

STK#4
JUL 25 1998

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 622230

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) TWRS Projects/SST Retrieval		4. Related EDT No.: n/a	
5. Proj./Prog./Dept./Div.: W-320 TWRS/TCPN # D2MA1		6. Design Authority/ Design Agent/Cog. Engr.: JW Bailey, NHC		7. Purchase Order No.: n/a	
8. Originator Remarks: For approval and release of a new supporting document. This document has been generated to ensure retrievability of the Project W-320 "Piping Calculations, Vol. 2".					
11. Receiver Remarks: 11A. Design Baseline Document? ☒ Yes ☐ No				9. Equip./Component No.: n/a	
				10. System/Bldg./Facility: 241-C-106	
				12. Major Assm. Dwg. No.: n/a	
				13. Permit/Permit Application No.: n/a	
				14. Required Response Date:	

15. DATA TRANSMITTED						(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted		Approval Design- nator	Reason for Trans- mittal	Origin- ator Dispo- sition	Receiv- er Dispo- sition
1	HNF-2472	-	0	Project W-320, 241-C-106 Sluicing, Piping Calculations, Vol. 2		NA			-

16. KEY					
Approval Designator (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
E, S, Q, D or N/A (see WHC-CM-3-5, Sec. 12.7)		1. Approval 2. Release 3. Information		4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	
				1. Approved 2. Approved w/comment 3. Disapproved w/comment	
				4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged	

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
2	1	Design Authority/	JW Bailey	7/23/98	S2-48						
		Design Agent									
2		Cog. Eng.	MC Davenport	7/25/98	S2-48						
2		Cog. Mgr.	JW Bailey	7/23/98	S2-48						
		QA									
		Safety									
		Env.									

18. Signature of EDT Originator MC Davenport 3/24/98 7/25/98		19. Authorized Representative Date for Receiving Organization		20. Design Authority/ Cognizant Manager J.W. Bailey 7/23/98		21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments	

Project W-320, 241-C-106 Sluicing Piping Calculations, Vol. 2

John W. Bailey

Numatec Hanford Co., Richland, WA 99352

U.S. Department of Energy Contract DE-AC09-96RL13200

EDT/ECN: 622230

UC: 506

Org Code: 8C452

Charge Code: D2991/HANA0600

B&R Code: EW3130010

Total Pages: 395 (JICB 7/25/98)

Key Words: W-320, Sluicing, Tank 241-C-106, Tank 241-AY-102, WRSS, calculations, piping.

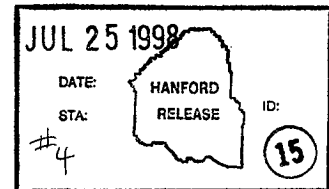
Abstract: This supporting document has been prepared to make the FDNW calculations for Project W-320, readily retrievable.

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

Printed in the United States of America. To obtain copies of this document, contact: Document Control Services, P.O. Box 950, Mailstop H6-08, Richland WA 99352, Phone (509) 372-2420; Fax (509) 376-4989.

James Braden
Release Approval

7/25/98
Date



Release Stamp

Approved for Public Release

Project W-320, 241-C-106 Sluicing Piping Calculations, Vol. 2

TABLE OF CONTENTS

Calc. No.	Title	Page
W320-27-013	Process Pipe Stress Analysis	i

ICF KAISER HANFORD COMPANY	CALCULATION IDENTIFICATION AND INDEX	Page <u>i</u> of <u>iii</u> Date <u>9/3/1996</u>

This sheet shows the status and description of the attached Design Analysis sheets.

Discipline	27, Piping and Vessels	WO/Job No. 4319	Calculation No. W-320-27-013
Project No. & Name	Project W 320 Waste Retrieval for Tank 241-C-106		
Calculation Item	Process Pipe Stress Analysis		

These calculations apply to:

Dwg. No. <u>ES-320-M3, ES-320-M4, ES-320-M5, and</u>	Rev. No. <u>0</u>
Dwg. No. <u>ES-320-M6</u>	Rev. No. <u>0</u>
Other (Study, CDR) _____	Rev. No. _____

The status of these calculations is:

☐ Preliminary Calculations
☒ Final Calculations
☐ Check Calculations (On Calculation Dated _____)
☐ Void Calculation (Reason Voided _____)

Incorporated in Final Drawings? ☒ Yes ☐ No

This calculation verified by independent "check" calculation? ☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 0 Signature / Date	Rev. 1 Signature / Date	Rev. 2 Signature / Date
Originator	D. L. Stone 5/6/94	D. L. Stone 8/4/95	<i>DL Stone</i> 9-29-96
Checked by	M.M. Ahmed 5/6/94	C.D. Jones 8/7/95	<i>CD Jones</i> 9/25/96
Approved by	C.D. Jones 6/3/94	C.D. Jones 8/7/95	<i>CD Jones</i> 9/25/96
Checked Against Approved Vendor Data			

INDEX

Design Analysis Page No.	Description
<u>i - ii</u>	<u>Calculation Identification and Index</u>
<u>iii</u>	<u>Calculation Cross Index</u>
<u>1 - 2</u>	<u>Objective, Design Inputs, and Design Criteria</u> <u>and Design Methodology</u>
<u>3</u>	<u>Assumptions and Calculations</u>
<u>4</u>	<u>References and Conclusions</u>
<u>5 - 72</u>	<u>Calculations</u>

11/19/97

This sheet shows the status and description of the attached Design Analysis sheets.

Discipline: (27) Piping and Vessels

WO/Job No.: ER4319

Calculation No.: W320-27-013

Project No. & Name: Project W-320 Waste Retrieval for Tank 241-C-106

Calculation Item: Process Pipe Stress Analysis

These calculations apply to:

Dwg. No.: See Calculation Cross Index

Rev. No.

Dwg. No.:

Rev. No.

Other (Study, CDR):

Rev. No.

The status of these calculations is:

- ☐ Preliminary Calculations
- ☒ Final Calculations
- ☐ Check Calculations (On Calculation Dated)
- ☐ Void Calculation (Reason Voided)

Incorporated in Final Drawings?

☒ Yes ☐ No

This calculation verified by independent "check" calculations?

☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 3 Signature/Date	Rev. 4 Signature/Date	Rev. 5 Signature/Date
Originator	Kelly L. Hagan 11/19/97		
Checked by	M. Ahmed 3.12.98		
Approved by	D. L. Ewins 4.9.98		
Checked Against Approved Vendor Data	M. Ahmed 3.10.98		

INDEX

Design Analysis
Page No.

Description

i - ii	Calculation Identification and Index
iii	Calculation Cross Index
1 - 2	Objective, Design Inputs, and Design Criteria and Design Methodology
3	Assumptions and Calculations
4	References and Conclusions
5 - 72	Calculations



Page 112 of 111

Date _____

11/19/97

WO/Job No. ER4319

Calculation No. W320-27-013

	Rev. 3 Signature/Date	Rev. 4 Signature/Date	Rev. 5 Signature/Date
Originator	Kelly K. Haynes 11/19/97		
Checked by	M. Ahmed 3.12.98		

INDEX

Design Analysis
Page No.

Description

Appdx A	AUTOPIPE Results for Slurry Line
Appdx B	AUTOPIPE Results for Supernate Line
Appdx C	AUTOPIPE Results for Supernate Line under Hydrotest Conditions
Appdx D	Stress Isometric Drawings
Appdx E	Supporting Documentation

REVISION

Revision
No.

Description

[illegible]

CALCULATION CROSS INDEX (Typical)

Subject Calculation No.: W320-27-013

Subject Calculation Revision No.	Superseded by Calculation No.	These interfacing calculation/documents provide input to the subject calculation, and if revised may require revision of the subject calculation.	Results and conclusions of the subject calculation are used in these interfacing calculations and/or documents		Does the output interface calculation/documents require revision?	Has the output interface calculation/documents been revised?	Page iii of iii
			Calculation/Document No.	Revision No.	Yes	No	
3	NA	H-2-818532, Sheet 1		Ø1			Discipline manager's signature and date indicating evaluation complete. S.D. Evans 7/16/98
		H-2-818532, Sheet 2		Ø1		X	
		H-2-818532, Sheet 3		Ø1	X		
		H-2-818533, Sheet 1		Ø1			
		H-2-818534, Sheet 1		Ø1			
		H-2-818535, Sheet 1		Ø1			
		H-2-818546, Sheet 1		Ø1			
		H-2-818546, Sheet 2		Ø1			
		H-2-818547, Sheet 1		Ø1			
		H-2-818548, Sheet 1		Ø1			
		H-2-818548, Sheet 2		Ø1			
		Calc # W320-27-014		3			
		WHC-SD-W320-FDC-001		4			
		WHC-SD-W320-SEL-033					

KEH 1975.00 (7289)

Page iii of iii

CALCULATION CROSS INDEX (Typical)

Subject Calculation No. W320-27-013

KEH 1975.00 (12/88)

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc No. W-320-27-013

Revision No. 23

Page No. 1 of 72

Client WESTINGHOUSE HANFORD COMPANY
Subject PROCESS PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM - 200 W. AREA

WO/Job No. ER4319

Date 9/3/96

Checked PKS/PL

Revised 11/18/97

Filename PROC-TXT.WP

By D.L. STONE DL S

By C.D. Stone

By K. Hapase CHKD: K. Hapase

3.12.9

OBJECTIVE:

The objectives of this calculation are:

1. To perform static and Safety Class 2 dynamic stress analysis of the Slurry and Supernate Process (inner) piping connecting Tanks 241-C-106 and 241-AY-102 in order to be in compliance with the Code ASME B31.3 (Ref. 1) requirements.
2. To assure the thermal expansion of the process pipe will not be restrained by the outer encasement pipe.
3. To furnish process pipe support to the Civil Engineering group.

DESIGN CRITERIA:

1. Project W320, Tank 241-C-106 Sluicing, *Functional Design Criteria*, (WHC document No. WHC-SD-W320-FDC-001, Rev. 2)
2. ASME B31.3-1993, Chemical Plant and Petroleum Refinery Piping
3. A/E Standards GC-LOAD-01, Rev. 0, Design Loads for Facilities
(Now FONW practice # 134, 215-1217, Design Loads for Facilities)

DESIGN INPUTS:

Design Pressure:	750 ft of Water (320 Psia-cons)	Ref: 12
Design Temperature:	180°F	Ref: 4
Pipe Contents:	Slurry - Specific gravity: 1.2	Ref: 4
Pipe Materials:	Stainless Steel SA 312, Gr TP304L	Ref: 5
Corrosion rate:	2 mils/yr, For 20 years 0.04 (considered as 0.06) (2 year life, but conservative so o.k.)	Ref: 4
Piping Classification:	SC-2	Ref: 5
~~Building Settlements:~~	~~Dy = 0.30" (Considered as 0.40" conservative)~~	~~Ref: 7~~

ICF KAISER

HANFORD COMPANY

DESIGN ANALYSIS

Calc No. W-320-27-013

Revision No. 23

Page No. 2 of 72

Client WESTINGHOUSE HANFORD COMPANY
Subject PROCESS PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM - 200 W. AREA

WO/Job No. ER4319

Date 9/3/96

Checked 9/12/96

Revised 11/18/97

Filename PROC-TXT.WP

By D.L. STONE DLS

By C.D. JONES

By K. Hayase CHKS: K. Hayase

E 12 9

DESIGN METHODOLOGY:

The stress analysis of the slurry and supernate pipes for sustained, thermal and seismic loads has been performed using the computer program "AutoPIPE" Version-4.6 by "Engineering Design Automation" (EDA) (Ref. 3).

SUSTAINED STRESS:

The sustained stress is the summation of longitudinal stresses due to dead weight of the pipe and internal pressure within the pipe. The design pressure of the contents is 750 feet of water which is equivalent to 325 psia (Ref.12). The pipe material is stainless steel ASTM A 312, Grade TP 304L with allowable stress "S" per ASME Code B31.3 of 16,700 psi. The "AutoPIPE" program checks the sustained stress against the Code allowable stress.

THERMAL (DISPLACEMENT) STRESS:

The maximum design temperature of 180°F, in accordance with the project Functional Design Criteria (Ref.4), has been considered in the "AutoPIPE" program. Since the process pipe is anchored to the encasement pipe by welded structures (intermediate anchors), the thermal movements of the encasement pipe are transmitted to the process pipe by inputting the support displacements into the "AutoPIPE" analysis. Displacements are computed for each support based on encasement pipe thermal movements at pipe bends, obtained from Calculation W320-27-014.

The "AutoPIPE" program has been run to qualify the thermal stress to Code B31.3 allowable for displacement stress "Sa".

The thermal expansion of the process pipe calculated by "AutoPIPE" is less than the gap available between the primary and encasement pipes at all bends except at Node Point A95. The thermal expansion of the process pipe in this case has exceeded the available gap by 1/16" (See Page 70). Since the "AutoPIPE" analysis indicates that the maximum thermal stress in the entire system is 16758 psi, compared to a code allowable of 25,050 psi, pipe binding at 1/16" will not cause pipe stresses to exceed the Code Allowable.

~~The building permanent settlements have been considered by allowing the pipe anchor at building penetration to move accordingly. These building settlements have been obtained from Civil/Structural Group (See Ref. 7).~~

SEISMIC STRESS:

Since the primary pipe has been classified as Safety Class 2 Pipe in (Ref.5), Dynamic analysis is performed using "Fig 5" seismic response spectra (5% Damping) from GC-LOAD-01, Rev. 0, Design Loads for Facilities (Ref.2). This response spectra is modelled in "AutoPipe" as "SC2&3".

The seismic stresses from the dynamic analysis are added to the sustained stresses from the static analysis to qualify against ASME B31.3 occasional stress allowable 1.33Sh.

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc No. W-320-27-013

Revision No. 2

Page No. 3 of 72

Client WESTINGHOUSE HANFORD COMPANY
Subject PROCESS PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM - 200 W. AREA

WO/Job No. ER4319

Date 9/3/96

Checked 9/15/96

Revised 1/1

Filename PROC-TXT.WP

By D.L. STONE DLS

By C.D. JENSEN

By

The encasement pipe seismic movements (Ref. 10) are negligibly small and will not have a significant impact on the process pipe stress analysis. Therefore, these movements are not considered.

ASSUMPTIONS:

The building structure is adequate to withstand the pipe loads.

CALCULATIONS:

Support Displacement Calculations for Slurry Piping	Pages 5 - 45
Support Displacement Calculations for Supernate Piping	Pages 45 - 69
Eccentricity (defines clearance in pipe annulus.)	Page 70
Restraint Reactions as Building Penetrations	Page 71 - 72
"AutoPIPE" analysis for Slurry Piping.	Appendix A
"AutoPIPE" analysis for Supernate Piping.	Appendix B
"AutoPIPE" analysis for Hydrotest Pressure.	Appendix C
Piping Stress Isometric Drawings	Appendix D
Support Documentation	Appendix E

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc No. W-320-27-014

Revision No. 2

Page No. 4 of 72

Client WESTINGHOUSE HANFORD COMPANY
Subject ENCASUREMENT PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM - 200 W. AREA

WO/Job No. ER4319

Date 9/3/96

Checked 9/12/96

Revised 1/1

Filename ENC-TEXT.WPW

By D.L. STONE DLS

By C.D. Jones

By

REFERENCES:

1. ASME CODE B31.3-93 & ADDENDA B31.3a-93 "Chemical and Petroleum Refinery"
2. A/E Standards GC-LOAD-01, Rev. 0, Design Loads for Facilities
3. Crane Technical Paper No: 410, 22nd Printing-1986.
4. Computer Program "STAB" (Seismic and Thermal analysis of Buried Piping), Version-0
5. ASME PAPER on "Hand Calculation of Seismic & Thermal Stresses in Buried Pipe" by G.C.K. Yeh. PVP Volume-77, June' 1983.
6. ASME PAPER on "Flexibility analysis of Buried Pipe" By E. C. Goodling. PVP Volume-82, June, 1978.
7. AISI "Modern Sewer Design" First Edition, 1980.
8. Shannon & Wilson Inc. Geotechnical and Environmental Consultants, "Final Report of Geotechnical Engineering Studies, W-320 Waste Retrieval and Sluicing Systems", Dated April 12, 1994.
9. Calculations #W320-33-004, "Earth Cover Shielding Thickness for C-farm Piping", Dated: April 12, 1994. (DSI from G.J.Peter dated April 12,1994)
10. WHC-SD-WM-SEL-033, Rev-1. "Safety Equipment List for 241-C-106 Waste Retrieval, Project W-320"
11. WHC-SD-W320-FDC-001, Rev-2. "Functional Design Criteria for Tank 241-C-106 Waste Retrieval, Project W-320".
12. Project W-320 Construction specifications W320-C1 Rev-0 for M-26a piping material.
13. DSI from C.D.Jones dated March 28, 1994 "Design Pressure for Slurry and Sluice Pumps".

CONCLUSION:

1. As evident from succeeding analysis, Sustained, Seismic and Thermal stresses in the Encasement Pipe have met the Code B31.3-1993 requirements.
2. Seismic & thermal pipe bend displacements are computed and listed on Pages 11 & 12
3. Building penetration Anchor loads are calculated and listed on Page 13.

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc No. W-320-27-013

Revision No. 23

Page No. 4th of 72

Client WESTINGHOUSE HANFORD COMPANY
Subject PROCESS PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM - 200 W. AREA

WO/Job No. ER4319

Date 9/3/96

Checked 1/1

Revised 11/18/97

Filename PROC-TXT.WP

By D.L. STONE

By

By K. Hays CHKD: 11/18/96
3:3 96

REFERENCES:

1. ASME Code B31.3 and B31.3a-1990 Addenda for "Chemical and Petroleum Refinery."
2. A/E Standards GC-LOAD-01, Rev. 0, Design Loads for Facilities
(New F&W Practice # 134.215.1217, Design Loads for Facilities)
3. Computer program "AutoPIPE" Version 4.6 by "Engineering Design Automation."
4. Project W320, Tank 241-C-106 Sluicing, *Functional Design Criteria*, (WHC document No. WHC-SD-W320-FDC-001, Rev. 214)
5. WHC-SD-W320-SEL-033, Rev.1, "Safety Equipment List for 241-C-106 Waste Retrieval Project W-320."
6. Piping plan and Detail Drawings: H-2-131088 (Sheets 1 to 4) Rev-0, ,
Piping Stress Isometric Drawings: ES-320-M3, ES-320-M4, ES-320-M5, and ES-320-M6
7. ~~Calculation No. W030-034 Rev-0 for "Recirculation Building - Foundation."~~
9. Calculation No: W-030-011, Rev-1 for "Fouling factor and Corrosion rate."
10. Calculation No: M3-P-R1 Rev-0 for "Encasement Pipe Stress Analysis."
11. Project Specification No: ~~GS15493-SP, Rev-0 for "Pipe Codes."~~
W-320-C1 Rev 0, Section 15493, Pipe Code M-9
12. DSI from C.D.Jones P.E., dated March 28, 1994, "Design Pressure for Slurry and Sluice Pumps."

CONCLUSION:

The review of the "AutoPipe" summary results attached as Appendices to this calculation indicates that all pipe stresses are in compliance with the requirements of ASME Code B31.3 requirements.

Rev. 3

Rev 3 of this calculation verified the analysis against the as-built conditions. There are minor dimensional differences between the Autopipe Model and the as-built conditions. However, because these differences are negligible (less than 1 ft), the analysis is still acceptable. Therefore the calculation is acceptable

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 7/13/97
Revised:

By: D.L. STONE *DLS*
By: C.D. Jones
By:

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A03

A01 and A02 Support Displacements corresponding to thermal expansion of Lp leg.

$\theta := 45 \text{ deg}$

Bend Angle

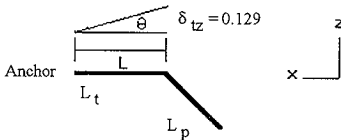
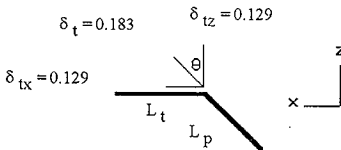
$\delta_t := 0.183$

Thermal expansion of Lp leg as given by STAB. (Local)
(Calculation # W-320-27-014)

$\delta_{tx} := \delta_t \cos(\theta)$

Components of δ_t (Global)

$\delta_{tz} := \delta_t \sin(\theta)$



Displacement of Lt leg caused by
growth of Lp leg.

$N := 3$

Number of pipe segments between
bend and anchor in feet.

$i := 0..N \quad L_0 := 0$

Individual segment identifier, indexed from 0 to N.

$Seg_i :=$

0
7.07
9.49
1.5

Lengths of individual pipe segments between
bend and anchor in feet.

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 6 of 70

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: *9/25/96*

Revised:

By: D.L. STONE *DLS*

By: *C. D. Stone*

By:

$$L_t := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_t = 216.72$$

Total length of Lt leg in inches.

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
84.84
198.72
216.72

Effective pipe length (cumulative) from anchor in inches.

$$\delta_i := \frac{\delta_{tz}}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_t .

Displacements weighted as to distance from anchor (inches).

$$\delta_i \quad (+z)$$

0
0.051
0.119
0.129

A00 (Anchor - No displacement.)

A01 (Displacements < 0.063 are considered negligible.)

A02 (Vertical-support - Displacements apply at lateral supports, only.)

A03 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320-27- 013
 Revision No.: 2
 Page No.: 7 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: *9/12/96*

Revised:

By: D.L. STONE *DL S*

By: *C.D. Stone*

By:

A04 and A05 support displacements corresponding to thermal expansion of Lt leg.

$$\theta := 45 \text{ deg}$$

Bend Angle

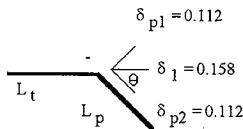
$$\delta_1 := 0.158$$

Thermal expansion of Lt leg as given by STAB. (Local)
 (Calculation # W-320-27-014)

$$\delta_{p1} := \delta_1 \cdot \cos(\theta)$$

Components of δ_1 . (Global)

$$\delta_{p2} := \delta_1 \cdot \sin(\theta)$$

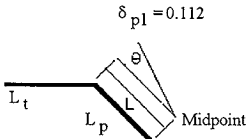


$$L := 1.5 + 13.22 + 14.26 + 10.59 + 3.83$$

Total distance between adjacent bends.

$$\frac{L}{2} - (1.5 + 13.22) = 6.98$$

Support A05 to Midpoint.



Displacement of Lp leg caused by growth of Lt leg.

$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
6.98
13.22
1.5

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 260.4$$

Total length of Lp leg (in inches).

DESIGN ANALYSIS

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/25/96

Revised:

By: D.L. STONE *DL S*

By: *DJ*

By:

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
83.76
242.4
260.4

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_{p1}}{L_p} \cdot L_{i+1}$$

Support displacement of L_p leg due to δ_{p1}

δ_i

0	Midpoint
0.036	A05
0.104	A04
0.112	A03

Displacements weighted as to distance from midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

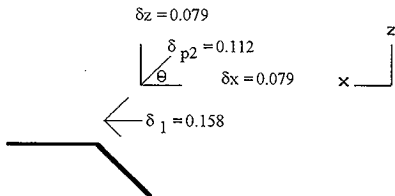
$$\theta := 45 \text{ deg}$$

Orientation Angle of Pipeline

$$\delta x := \delta_{p1} \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta z := \delta_{p1} \cdot \sin(\theta)$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i (-x)

0
0.025
0.074
0.079

δz_i (+z)

0
0.025
0.074
0.079

A00 (Anchor/Midpoint - No displacement.)

A05 (Displacements < 0.063 are considered negligible.)

A04 (Vertical-support - Displacements apply at lateral supports, only.)

A03 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 9 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/25/96

Revised:

By: D.L. STONE DLS

By: C.D. Jones

By:

THERMAL DISPLACEMENTS for BEND at SLURRRY PIPE NODE A08

Since displacements are appcable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A06 and A07 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.022$$

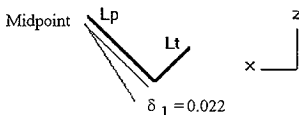
Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$L := 1.5 + 13.22 + 14.26 + 10.59 + 3.83$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 10.59) = 7.28$$

A06 to Midpoint.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
6.99
10.59
3.83

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 256.92$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from midpoint in inches.

L_{i+1}
0
83.88
210.96
256.92

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support Displacement of Lp leg due to δ_i .

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 10 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9/3/96

Checked: 9/12/96

Revised:

By: D.L. STONE *DLS*
By: *CPD Jones*
By:

δ_i

0
0.007
0.018
0.022

A06
A07
A08

Displacements weighted as to distance from midpoint (inches).

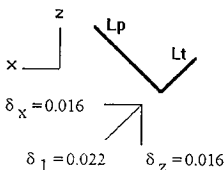
x,z Coordinates of weighted deflections for input to Autopipe:

$\theta := 45\text{-deg}$

Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta) \quad \delta_z := \delta_1 \cdot \sin(\theta)$$

x,z Coordinates of deflections for input to Autopipe:



$$\delta x_i := \delta_i \cdot \cos(\theta) \quad \delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i

(+x)

0
0.005
0.013
0.016

δz_i

(-z)

0
0.005
0.013
0.016

A06
A07
A08

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 11 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

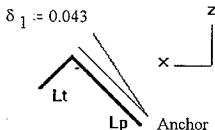
WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 7/25/96
 Revised:

By: D.L. STONE DLS
 By: CDJ/ma
 By:

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A11

Since displacements are applicable only at lateral supports, analysis of offsets with vertical supports, only, has been omitted from this calculation.

A12 to A16 Support displacement corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014) .

N := 6

Number of pipe segments between bend and anchor/midpoint in feet.

i := 0..N

$L_0 := 0$

Individual segment identifier, indexed from 0 to N.

Seg_i :=

0
12
12
12
12
7.67
3.83

Lengths of individual pipe segments between bend and anchor/midpoint in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 714$$

Total length of Lp leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor/midpoint in inches.

L_{i+1}
0
144
288
432
576
668.04
714

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 12 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 9/13/96
Revised:

By: D.L. STONE *DIS*
By: *CD Jones*
By:

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_{p1}

δ_i

0
0.009
0.017
0.026
0.035
0.04
0.043

(Anchor)

A16
A15
A14
A13
A12
A11

Displacements weighted as to distance from Anchor (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

$$\theta := 45 \text{ deg}$$

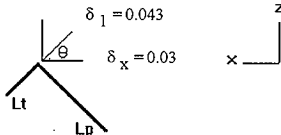
Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$

$$\delta_z = 0.03$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i (-x)

0
0.006
0.012
0.018
0.025
0.028
0.03

δz_i (+z)

0
0.006
0.012
0.018
0.025
0.028
0.03

(Anchor/Midpoint - No displacement.)

A16
A15
A14
A13

(Displacements < 0.063 are considered negligible.)

A12
A11

(Vertical-support - Displacements apply at lateral supports, only.
(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 13 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

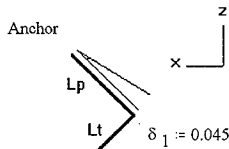
WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: *7 RST/6*
 Revised:

By: D.L. STONE *DL5*
 By: *CD Jones*
 By:

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODES A23

Since displacements are appcable only at lateral supports, analysis of offsets with vertical supports, only, has been omitted from this calculation.

A18 and A21 Support Displacements corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014) .

$N := 6$

Number of pipe segments between bend and anchor in feet.

$i := 0..N$ $L_0 := 0$

Individual segment identifier, indexed from 0 to N.

$Seg_i :=$

0
12
12
12
12
7.67
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 714$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
144
288
432
576
668.04
714

Effective pipe length (cumulative) from anchor in inches.

DESIGN ANALYSIS

Calc. No.: W-320-27-013

Revision No.: 2

Page No.: 14 of 70

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: *P. R. 5/7/96*

Revised:

By: D.L. STONE *DL S*

By: *C. D. Jones*

By:

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Displacement of Lt leg due to δ_1 .

δ_1	
0	(Anchor)
0.009	A18
0.018	A19
0.027	A20
0.036	A21
0.042	A22
0.045	A23

Displacements weighted as to distance from Anchor (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

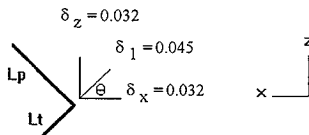
$$\theta := 45 \cdot \text{deg}$$

Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$



$$\delta x_i := \delta_1 \cdot \cos(\theta)$$

$$\delta z_i := \delta_1 \cdot \sin(\theta)$$

δx_i (-x)

0
0.006
0.013
0.019
0.026
0.03
0.032

δz_i (+z)

0
0.006
0.013
0.019
0.026
0.03
0.032

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.
(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 15 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/25/96
 Revised:
 By: D.L. STONE DLS
 By: C.D. Jones

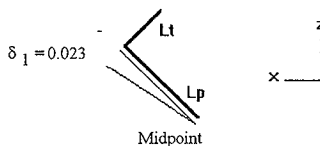
THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A26

Since displacements are appcable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

Displacement of Lp leg corresponding to thermal displacement of Lt leg.

$$\delta_1 := 0.023$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N := 3$$

Number of pipe segments between bend and anchor/midpoint in feet.

$$i := 0..N$$

$$L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

0
12.712
9.481
3.855

Lengths of individual pipe segments between bend and midpoint in feet.

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 312.576$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
152.544
266.316
312.576

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Displacement of Lt leg due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W- 320-27- 013
 Revision No.: 2
 Page No.: 16 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/25/96
 Revised:

By: D.L. STONE JLS
 By: CD Jones

δ_i	
0	(Midpoint)
0.011	A28
0.02	A27
0.023	A26

Displacements weighted as to distance from midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

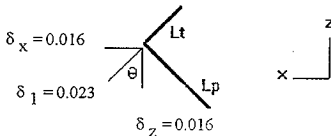
$$\theta := 45\text{-deg}$$

Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i	
0	
0.008	A28
0.014	A27
0.016	A26

δz_i	
0	
0.008	A28
0.014	A27
0.016	A26

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 17 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/25/96
 Revised:

By: D.L. STONE DLS
 By: [Signature]

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A32

*Since displacements are appcable only at lateral supports,
 analysis of offset with vertical supports, only, has been oमितed from this calculation.*

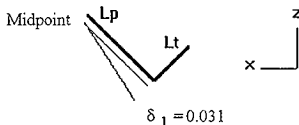
A30 support displacement corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.031$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$L := 12.712 + 9.481 + 3.855$$

Total distance between adjacent bends.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
12.712
9.481
3.855

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 312.576 \quad \text{Total length of Lt leg (in inches).}$$

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
152.544
266.316
312.576

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 18 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: *7 R57/6*
Revised:

By: D.L. STONE *DL5*
By: *Stone*

$$\delta_i$$

0	(Midpoint)
0.015	A30
0.026	A31
0.031	A32

Displacements weighted as to distance from midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

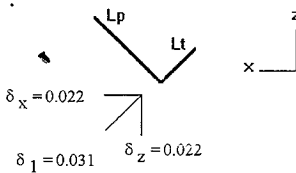
$$\theta := 45 \cdot \text{deg}$$

Orientation Angle

$$\delta_x := \delta_i \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_i \cdot \sin(\theta)$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

$$\delta x_i \quad (+x)$$

0
0.011
0.019
0.022

A30
A31
A32

$$\delta z_i \quad (-z)$$

0
0.011
0.019
0.022

A30
A31
A32

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Bend - Displacements apply at supports, only.)

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

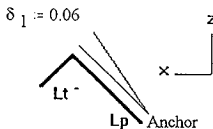
WO/Job No.: ER4319
 Date: 9/3/96
 Checked: 9/12/96
 Revised:

By: D.L. STONE DLS
 By: [Signature]

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A35

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A36 to A38 Support Displacements corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$N := 4$

Number of pipe segments between bend and anchor in feet.
 Individual segment identifier, indexed from 0 to N.

$i := 0..N$ $L_0 := 0$

$Seg_i :=$

0
12
12
9.81
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 451.68$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
144
288
405.72
451.68

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 20 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9/3/96
Checked: 9/12/96
Revised:
By: D.L. STONE DLS
By: CD Jones
By:

δ_1	
0	(Anchor)
0.019	A38
0.038	A37
0.054	A36
0.06	A35

Displacements weighted as to distance from anchor (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

$$\theta = 45^\circ \text{ deg}$$

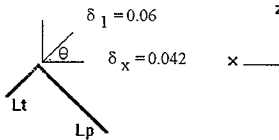
Orientation Angle

$$\delta_x = \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z = \delta_1 \cdot \sin(\theta)$$

$$\delta_z = 0.042$$



$$\delta x_i = \delta_1 \cdot \cos(\theta)$$

$$\delta z_i = \delta_1 \cdot \sin(\theta)$$

δx_i (-x)

0	
0.014	A38
0.027	A37
0.038	A36
0.042	A35

δz_i (+z)

0	
0.014	A38
0.027	A37
0.038	A36
0.042	A35

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 21 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: J R 5/96
 Revised:
 By: D.L. STONE DLS
 By: C. Jones

THERMAL DISPLACEMENTS for BEND at SLURRY / SUPERNATE PIPE NODE A43

A40 to A42 Support Displacements corresponding to thermal expansion of Lp leg.

$$\theta := 45 \text{ deg}$$

$$\delta_t := 0.345$$

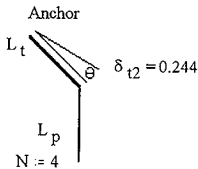
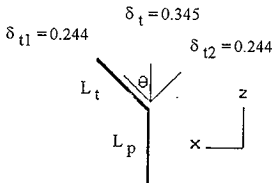
$$\delta_{t1} := \delta_t \cdot \cos(\theta)$$

$$\delta_{t2} := \delta_t \cdot \sin(\theta)$$

Bend Angle

Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014)

Components of δ_t



$$i := 0..N \quad L_0 := 0$$

$$\text{Seg}_i :=$$

0
12
12
11.89
1.5

$$L_t := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_t = 448.68$$

Weighted deflections of Lt leg due to δ_{t2}

Number of pipe segments between bend and anchor in feet.

Individual segment identifier, indexed from 0 to N.

Lengths of individual pipe segments between bend and anchor in feet.

Total length of Lt leg.

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 22 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: P. R. F. / 96

Revised:

By: D.L. STONE DLS

By: C. D. Stone

By:

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
144
288
430.68
448.68

Effective pipe length (cumulative) from anchor in inches.

$$\delta_i := \frac{\delta_{t2}}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_{t2}

δ_i
0
0.078
0.157
0.234
0.244

Anchor
 A40
 A41
 A42
 A43

Displacements weighted as to distance from anchor / midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

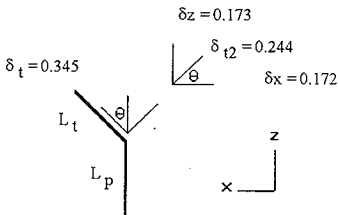
$$\theta := 45\text{-deg}$$

Orientation Angle

$$\delta_x := \delta_{t2} \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_{t2} \cdot \sin(\theta)$$



$$\delta_{x_i} := \delta_i \cdot \cos(\theta)$$

$$\delta_{z_i} := \delta_i \cdot \sin(\theta)$$

δ_{x_i} (-x)

0
0.055
0.111
0.166
0.172

A40
 A41
 A42
 A43

δ_{z_i} (+z)

0
0.055
0.111
0.166
0.173

A40
 A41
 A42
 A43

(Anchor/Midpoint - No displacement.)
 (Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.)
 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 23 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 7/25/96

Revised:

By: D.L. STONE DLS
By: [Signature]
By:

A44 to A48 Support Displacements corresponding to thermal expansion of Lt leg.

$$\theta := 45\text{-deg}$$

$$\delta_1 := 0.273$$

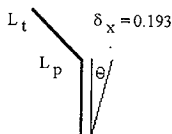
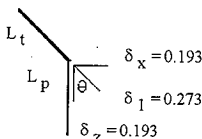
$$\delta_x := \delta_1 \cdot \sin(\theta)$$

$$\delta_z := \delta_1 \cdot \cos(\theta)$$

Bend Angle

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

Components of δ_1



Anchor

$$N := 6$$

$$i := 0..N$$

$$L_0 := 0$$

$$\text{Seg}_i :=$$

0
12.75
12.75
13.5
13.5
13.01
1.5

Number of pipe segments between bend and anchor / midpoint in feet.

Individual segment identifier, indexed from 0 to N.

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 804.12$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
153
306
468
630
786.12
804.12

Effective pipe length (cumulative) from anchor / midpoint in inches.

$$\delta_i := \frac{\delta_x}{L_p} L_{i+1}$$

Support displacement due to δ_i .

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 24 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/25/96

Revised:

By: D.L. STONE DLS

By: [Signature]

By:

Displacements weighted as to distance from anchor (inches).

δ_i	(-x)	
0		(Anchor/Midpoint - No displacement.)
0.037	A48	(Displacements < 0.063 are considered negligible.)
0.073	A47	<-----
0.112	A46	<-----
0.151	A45	<-----
0.189	A44	(Vertical-support - Displacements apply at lateral supports, only.)
0.193	A43	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 25 of 70

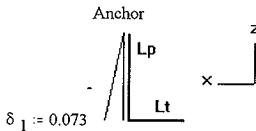
Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: P B S F G
Revised:
By: D.L. STONE DLS
By: C.D. Jones

THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A55

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A50 to A54 Support Displacements corresponding to thermal expansion of Lt leg.



$$\delta_1 := 0.073$$

$$N := 7$$

$$i := 0..N \quad L_0 := 0$$

$$Seg_i :=$$

0
12.75
12.75
12.75
12.75
12.75
13.25
3.83

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

Number of pipe segments between bend and anchor / midpoint in feet.
Individual segment identifier, indexed from 0 to N.

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 969.96$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
153
306
459
612
765
924
969.96

Effective pipe length (cumulative) from anchor / midpoint in inches.

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 26 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: *T. B. S. H.*
 Revised:

By: D.L. STONE *DLS*
 By: *C. D. Stone*
 By:

Displacements weighted as to distance from anchor / midpoint (inches).

δ_i	(+x)	
0		(Anchor/Midpoint - No displacement.)
0.012	A50	
0.023	A51	
0.035	A52	(Displacements < 0.063 are considered negligible.)
0.046	A53	
0.058	I 53	
0.07	A54	(Vertical-support - Displacements apply at lateral supports, only.
0.073	A55	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 27 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9/3/96

Checked: *7/25/96*

Revised:

By: D.L. STONE *DS*

By: *Stone*

By:

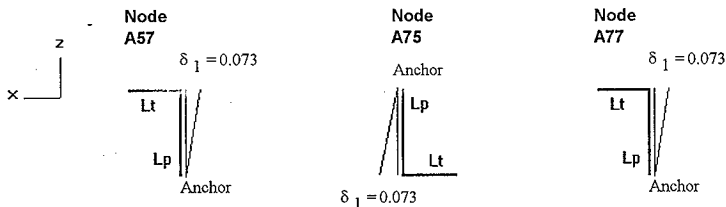
THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODES A57, A75 and A77

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 = 0.073$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N := 9$$

Number of pipe segments between bend and anchor / midpoint in feet.

$$i := 0..N$$

$$L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

0
13.33
13.33
13.33
13.33
13.33
13.33
13.33
13.44
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 1.327 \cdot 10^3$$

Total length of Lt leg (in inches).

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 28 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: P 125716
 Revised:
 By: D.L. STONE DLS
 By: [Signature]
 By:

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
159.96
319.92
479.88
639.84
799.8
959.76
$1.12 \cdot 10^3$
$1.281 \cdot 10^3$
$1.327 \cdot 10^3$

Effective pipe length (cumulative) from
 anchor / midpoint in inches.

$$\delta_i := \frac{\delta}{L} \cdot L_{i+1}$$

Support displacement due to δ_i .

Displacements weighted as to distance from anchor / midpoint (inches).

	Node A57	Node A75	Node A77
δ_i	(-x)	(+x)	(-x)
0			
0.009	A65	A67	A85
0.018	A64	A68	A84
0.026	A63	A69	A83
0.035	A62	A70	A82
0.044	A61	A71	A81
0.053			
0.062	A60	A72	A80
0.07	A59	A73	A79
0.073	A58	A74	A78
	A57	A75	A77

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.
 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 29 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 9/25/96
Revised:
By: D.L. STONE DLS
By: CD [Signature]

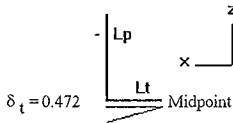
THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A95

A96 and A97 Support Displacements corresponding to thermal expansion of Lp leg.

$$\delta_t := 0.472$$

$$L := (2 \cdot 3.83) + (2 \cdot 11.25) + 11.84$$

$$\frac{L}{2} - (3.83 + 11.25) = 5.92$$



Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014).

Total distance between adjacent bends.

A97 to Midpoint.

$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

0
5.92
11.25
3.83

Lengths of individual pipe segments between bend and midpoint in feet.

$$L_t := \left(\sum_i Seg_i \right) \cdot 12 \quad L_t = 252$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
71.04
206.04
252

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_t}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_t

Displacements weighted as to distance from midpoint (inches).

δ_i	(-z)
0	
0.133	A97
0.386	A96
0.472	A95

(Anchor/Midpoint - No displacement.)

←-----

(Vertical-support - Displacements apply at lateral supports, only.
(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 30 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96 By: D.L. STONE DLS
 Checked: 9/15/96 By: C. D. Stone
 Revised:

A87 to A94 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 = 0.178$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

Anchor



$$\delta_1 = 0.178$$

$$N := 9$$

Number of pipe segments between bend and anchor / midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

0
13.33
13.33
13.33
13.33
13.33
13.33
13.33
13.44
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 1.327 \cdot 10^3$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor / midpoint in inches.

L_{i+1}
0
159.96
319.92
479.88
639.84
799.8
959.76
$1.12 \cdot 10^3$
$1.281 \cdot 10^3$
$1.327 \cdot 10^3$

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 31 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/25/96

Revised:

By: D.L. STONE DLS

By: *[Signature]*

By:

$$\delta_i := \frac{\delta_i}{L_p} L_{i+1}$$

Support displacement due to δ_i .

Displacements weighted as to distance from anchor / midpoint (inches).

δ_i (+x)

0	(Anchor/Midpoint - No displacement.)
0.021	A87 (Displacements < 0.063 are considered negligible.)
0.043	A88 (Displacements < 0.063 are considered negligible.)
0.064	
0.086	A89 <-----
0.107	A90 <-----
0.129	A91 <-----
0.15	A92 <-----
0.172	A93 <-----
0.178	A94 (Vertical-support - Displacements apply at lateral supports, only.
	A95 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 32 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: *P. B. S. / 96*
Revised:

By: D.L. STONE *DLS*
By: *C. J. S. / 96*
By:

THERMAL DISPLACEMENTS for BEND at SUPERNATE / SLURRY PIPE NODE A100

A98 and A99 Support Displacements corresponding to thermal expansion of Lp leg.

$$\delta_t = 0.411$$

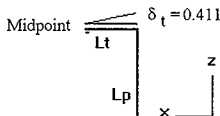
Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014).

$$L = (2 \cdot 3.83) + (2 \cdot 11.25) + 11.84$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 11.25) = 5.92$$

Segment adjacent to Midpoint.



$$N := 3$$

Number of pipe segments between bend and anchor / midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

0
5.92
11.25
3.83

$$L_t := \left(\sum_i Seg_i \right) \cdot 12$$

$$L_t = 252$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
71.04
206.04
252

Effective pipe length (cumulative) from anchor / midpoint in inches.

$$\delta_i := \frac{\delta_t}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_t .

Displacements weighted as to distance from anchor / midpoint (inches).

$$\delta_i \quad (+z)$$

0
0.116
0.336
0.411

A98

A99

A100

(Anchor/Midpoint - No displacement.)

←-----

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 33 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9/3/96

Checked: PDS 9/6

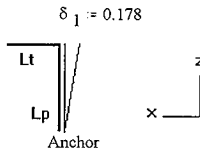
Revised:

By: D.L. STONE JLS

By: CD Jones

By:

Deflection of Lp leg corresponding to thermal displacement of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$N := 7$

Number of pipe segments between bend and anchor / midpoint in feet.

$i := 0..N$ $L_0 := 0$

Individual segment identifier, indexed from 0 to N.

$Seg_i :=$

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

0
12.25
12.25
12.25
12.25
12.25
13
3.83

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 936.96$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_1 + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from anchor / midpoint in inches.

L_{i+1}
0
147
294
441
588
735
891
936.96

$$\delta_1 := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 34 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 7/25/96
 Revised:
 By: D.L. STONE DLS
 By: [Signature]

Displacements weighted as to distance from anchor / midpoint (inches).

δ_i (-x)

0		(Anchor/Midpoint - No displacement.)
0.028	A106	(Displacements < 0.063 are considered negligible.)
0.056	A105	(Displacements < 0.063 are considered negligible.)
0.084	A104	<-----
0.112	A103	<-----
0.14	A102	<-----
0.169	A101	(Vertical-support - Displacements apply at lateral supports, only.
0.178	A100	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 35 of 70.

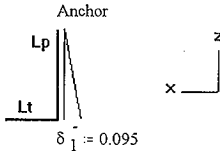
Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: *9/25/96*
Revised:
By: D.L. STONE *DLS*
By: *CTD*
By:

THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A114

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A108 to A113 Support Displacements corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

N := 9

Number of pipe segments between bend and anchor in feet.

i := 0..N $L_0 := 0$

Individual segment identifier, indexed from 0 to N.

Seg_i :=

Lengths of individual pipe segments between bend and anchor in feet.

0
12.25
12.25
12.25
2.88
1.62
11
11
11
3.83

$$L_P := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_P = 936.96$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
147
294
441
475.56
495
627
759
891
936.96

Effective pipe length (cumulative) from anchor in inches.

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 36 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/25/96
 Revised:
 By: D.L. STONE DLS
 By: C.D. Jones

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from anchor (inches).

δ_i (-x)

0		(Anchor/Midpoint - No displacement.)
0.015	A108	(Displacements < 0.063 are considered negligible.)
0.03	A109	(Displacements < 0.063 are considered negligible.)
0.045	A110	(Displacements < 0.063 are considered negligible.)
0.048	A111	(Displacements < 0.063 are considered negligible.)
0.05	A112	(Displacements < 0.063 are considered negligible.)
0.064	I112	<-----
0.077	I113	<-----
0.09		
0.095	A113	(Vertical-support - Displacements apply at lateral supports, only.
	A114	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 37 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/25/96
 Revised:

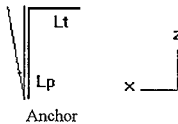
By: D.L. STONE DLS
 By: CD Jones

THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A117

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A118 to A124 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.095$$



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$N := 8$$

Number of pipe segments between bend and anchor in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and anchor in feet.

0
13.83
13.83
13.83
13.83
13.83
13.83
13.74
3.83

$$L_p := \left(\sum_i Seg_i \right) \cdot 12$$

$$L_p = 1.207 \cdot 10^3$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
165.96
331.92
497.88
663.84
829.8
995.76
$1.161 \cdot 10^3$
$1.207 \cdot 10^3$

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 38 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 7/15/96
 Revised:

By: D.L. STONE DLS
 By: C.D. Jones

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_i + 1$$

Displacements weighted as to distance from anchor (inches).

Support displacement due to δ_1 .

δ_i (+x)

0	(Anchor - No displacement.)
0.013	A124 (Displacements < 0.063 are considered negligible.)
0.026	A123 (Displacements < 0.063 are considered negligible.)
0.039	A122 (Displacements < 0.063 are considered negligible.)
0.052	A121 (Displacements < 0.063 are considered negligible.)
0.065	A120 <-----
0.078	A119 <-----
0.091	
0.095	A118 (Vertical-support - Displacements apply at lateral supports, only.
	A117 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 39 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

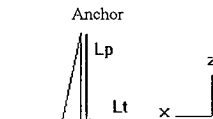
WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/12/96
 Revised:

By: D.L. STONE JLS
 By: [Signature]
 By:

THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A133

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A126 to A131 Support Displacements corresponding to thermal expansion Lt leg.



$\delta_1 := 0.082$

$N := 8$

$i := 0..N \quad L_0 := 0$

$Seg_i :=$

0
13.83
13.83
13.83
13.83
13.83
13.74
3.83

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

Number of pipe segments between bend and anchor in feet.
 Individual segment identifier, indexed from 0 to N.

Lengths of individual pipe segments between bend and anchor in feet.

$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 1.207 \cdot 10^3$

Total length of Lt leg (in inches).

$L_{i+1} := L_i + (Seg_i) \cdot 12$

L_{i+1}
0
165.96
331.92
497.88
663.84
829.8
995.76
$1.161 \cdot 10^3$
$1.207 \cdot 10^3$

Effective pipe length (cumulative) from anchor in inches.

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 40 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9/3/96
 Checked: 9/15/96
 Revised:

By: D.L. STONE DLS
 By: [Signature]
 By:

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

δ_i (+X)

Displacements weighted as to distance from anchor (inches).

0
0.011
0.023
0.034
0.045
0.056
0.068
0.079
0.082

(Anchor - No displacement.)
 (Displacements < 0.063 are considered negligible.)
 A126
 A127
 A128
 A129
 A130
 A131 <-----
 A132 (Vertical-support - Displacements apply at lateral supports, only.)
 A133 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 41 of 70.

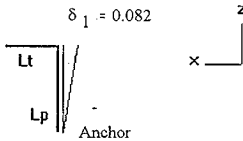
Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/12/96
 Revised:
 By: D.L. STONE
 By: [Signature]

THERMAL DISPLACEMENTS for BEND at SUPERRNATE / SLURRY PIPE NODE A135

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A136 to A142 Support Displacement corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

N := 8

Number of pipe segments between bend and anchor in feet.

i := 0..N L₀ := 0

Individual segment identifier, indexed from 0 to N.

Seg_i :=

Lengths of individual pipe segments between bend and anchor in feet.

0
13.83
13.83
13.83
13.83
13.83
13.83
13.75
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 1.207 \cdot 10^3$$

Total length of Lt leg (in inches).

$$L_{i+1} = L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L _{i+1}
0
165.96
331.92
497.88
663.84
829.8
995.76
1.161 · 10 ³
1.207 · 10 ³

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 42 of 70.

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 7/12/96

Revised:

By: D.L. STONE *DIS*

By: *CD*

By:

$$\delta_i = \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from anchor (inches).

δ_i (-X)

0
0.011
0.023
0.034
0.045
0.056
0.068
0.079
0.082

A142

A141

A140

A139

A138

A137

A136

A135

(Anchor - No displacement.)

(Displacements < 0.063 are considered negligible.)

<-----

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 43 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9/3/96
Checked: *AS 176*
Revised:

By: D.L. STONE *DLS*
By: *CD Jones*
By:

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE 151

A152 and A153 Support Displacements corresponding to thermal expansion of Lp leg.

$$\delta_t := 0.456$$

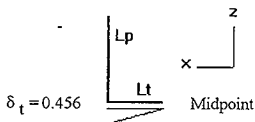
Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014).

$$L := (2 \cdot 3.83) + 13 + 5.88 + 7.12 + 12.88$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 13) = 6.44$$

Segment adjacent to Midpoint.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
6.44
13
3.83

$$L_t := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_t = 279.24$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

0
77.28
233.28
279.24

$$\delta_i := \frac{\delta_t}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_t .

Displacements weighted as to distance from midpoint (inches).

δ_i	(-z)
0	
0.126	A153
0.381	A152
0.456	A151

(Midpoint - No displacement.)

<-----

(Vertical-support - Displacements apply at lateral supports, only.
(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 44 of 70

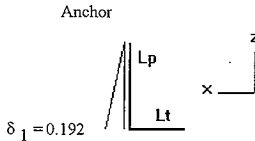
Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: *BSY*
 Revised:
 By: D.L. STONE *DLS*
 By: *CD*

A144 to A150 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 = 0.192$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N = 8$$

Number of pipe segments between bend and anchor in feet.

$$i = 0..N \quad L_0 = 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and anchor in feet.

0
13.83
13.83
13.83
13.83
13.83
13.83
13.75
3.83

$$L_p = \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 1.207 \cdot 10^3$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
165.96
331.92
497.88
663.84
829.8
995.76
$1.161 \cdot 10^3$
$1.207 \cdot 10^3$

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 45 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96 By: D.L. STONE JLS
 Checked: 9/25/96 By: C.D. Jones
 Revised: By:

$$\delta_i = \frac{\delta_1}{L_p} L_{i+1} \quad \text{Support displacement due to } \delta_1.$$

Displacements weighted as to distance from anchor (inches).

δ_i	(+x)	
0		(Anchor - No displacement.)
0.026	A144	(Displacements < 0.063 are considered negligible.)
0.053		
0.079	A146	<-----
0.106	A147	<-----
0.132	A148	<-----
0.158	A149	<-----
0.185	A150	(Vertical-support - Displacements apply at lateral supports, only.)
0.192	A151	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 46 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 9/12/96
Revised:

By: D.L. STONE DLS
By: D. Stone

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A157

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A155 and A156 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 = 0.025$$

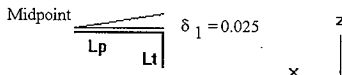
Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$L = (3.83 \cdot 2) + 13 + 5.88 + 7.12 + 12.88$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 12.88) = 6.56$$

Segment adjacent to Midpoint.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0 \dots N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
6.56
12.88
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 279.24$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from midpoint in inches.

L_{i+1}
0
78.72
233.28
279.24

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from midpoint (inches).

δ_i	(+z)
0	
0.007	
0.021	
0.025	

(Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

A155 (Vertical-support - Displacements apply at lateral supports, only.)

A157 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 47 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: *9/12/96*
 Revised:
 By: D.L. STONE *DLS*
 By: *C. Jones*

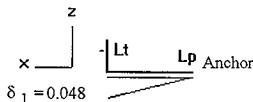
THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODES A160, A166 and A169

Since displacements are applicable only at lateral supports, analyses of offsets with only anchors or vertical supports have been omitted from this calculation.

A162 and A164 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.048$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$\delta_1 = 0.048$$

$$N := 3$$

Number of pipe segments between bend and anchor in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

0
14
10.92
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 345$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
168
299.04
345

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from anchor (inches).

$$\delta_i \quad (-Z)$$

0
0.023
0.042
0.048

(Anchor - No displacement.)

A162 A164 (Displacements < 0.063 are considered negligible.)
 A161 A165 (Vertical-support - Displacements apply at lateral supports, only.)
 A160 A166 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/15/96
 Revised:

By: D.L. STONE DLS
 By: C.D. Jones

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A03

A01 and A02 Support Displacements corresponding to thermal expansion of Lp leg.

$\theta := 45\text{-deg}$

Bend Angle

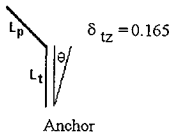
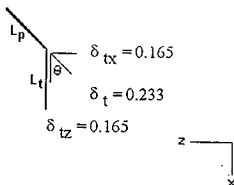
$\delta_t := 0.233$

Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014)

$\delta_{tx} := \delta_t \cos(\theta)$

Components of δ_t (Global)

$\delta_{tz} := \delta_t \sin(\theta)$



Displacement of Lt leg caused by growth of Lp leg.

$N := 3$

Number of pipe segments between bend and anchor in feet.

$i := 0..N$ $L_0 := 0$

Individual segment identifier, indexed from 0 to N.

$\text{Seg}_i :=$

0
6.62
8.67
1.5

Lengths of individual pipe segments between bend and anchor in feet.

DESIGN ANALYSIS

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/15/96

Revised:

By: D.L. STONE DLS

By: CD Jones

By:

$$L_t := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_t = 201.48$$

Total length of Lt leg in inches.

$$L_{i+1} := L_i + \left(\text{Seg}_i \right) \cdot 12$$

L_{i+1}
0
79.44
183.48
201.48

Effective pipe length (cumulative) from anchor in inches.

$$\delta_i := \frac{\delta_{Lz}}{L_t} L_{i+1}$$

Support displacement due to δ_t .

Displacements weighted as to distance from anchor (inches).

δ_i (-z)

0
0.065
0.15
0.165

A00 (Anchor - No displacement.)

A01 <-----

A02 (Vertical-support - Displacements apply at lateral supports, only.

A03 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 50 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96 By: D.L. STONE DLS
 Checked: 9/12/96 By: C.D. Jones
 Revised:

A04 and A05 support displacements corresponding to thermal expansion of Lt leg.

$$\theta := 45 \text{ deg}$$

Bend Angle

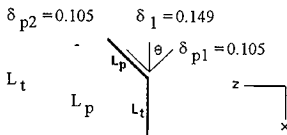
$$\delta_1 := 0.149$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$\delta_{p1} := \delta_1 \cdot \cos(\theta)$$

Components of δ_1 . (Global)

$$\delta_{p2} := \delta_1 \cdot \sin(\theta)$$



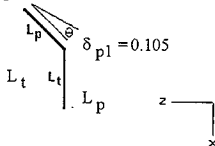
$$L := 1.06 + (4 \cdot 11) + 5.98 + 4.33 + 3.83$$

Total distance between adjacent bends.

$$\frac{L}{2} - (1.5 + (2 \cdot 11)) = 6.1$$

Support A05 to Midpoint.

Midpoint



Displacement of Lp leg caused by growth of Lt leg.

$$N := 4$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0 \dots N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

0
6.1
11
11
1.5

Lengths of individual pipe segments between bend and midpoint in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 355.2$$

Total length of Lp leg (in inches).

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 51 of 70

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/12/96

Revised:

By: D.L. STONE DLS

By: *[Signature]*

By:

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
73.2
205.2
337.2
355.2

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_{p1}}{L_p} \cdot L_{i+1}$$

Support displacement of L_p leg due to δ_{p1}

δ_i

0	Midpoint
0.022	A06
0.061	A05
0.1	A04
0.105	A03

Displacements weighted as to distance from midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

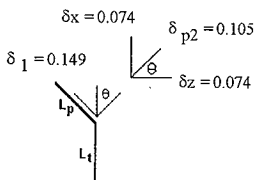
$$\theta := 45\text{-deg}$$

Orientation Angle of Pipeline

$$\delta x := \delta_{p1} \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta z := \delta_{p1} \cdot \sin(\theta)$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i	(-x)
0	
0.015	A06
0.043	A05
0.071	A04
0.074	A03

δz_i	(-z)
0	
0.015	A06
0.043	A05
0.071	A04
0.074	A03

(Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.)
 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 52 of 70

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/25/96

Revised:

By: D.L. STONE JLS

By: C. D. Stone

By:

THERMAL DISPLACEMENTS for BEND at SUPERRNATE PIPE NODE A10

A07 and A08 Support Displacements corresponding to thermal expansion of Lp leg.

$$\delta_t := 0.397$$

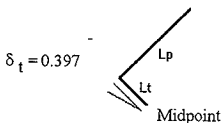
Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014).

$$L := 1.06 + (4.11) + 5.98 + 4.33 + 3.83$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 4.33 + 5.98 + 11) = 4.46$$

Segment adjacent to Midpoint.



$$N := 4$$

Number of pipe segments between bend and anchor / midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and anchor / midpoint in feet.

0
4.46
11
10.31
3.83

$$L_t := \left(\sum_i Seg_i \right) \cdot 12$$

$$L_t = 355.2$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

L_{i+1}
0
53.52
185.52
309.24
355.2

Effective pipe length (cumulative) from anchor / midpoint in inches.

$$\delta_i := \frac{\delta_t}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_t .

Displacements weighted as to distance from midpoint (inches).

δ_i
0
0.06
0.207
0.346
0.397

A07
A08
A09
A10

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 53 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9/3/96

Checked: 9/25/96

Revised:

By: D.L. STONE *Des*

By: *Donez*

By:

x,z Coordinates of weighted deflections for input to Autopipe:

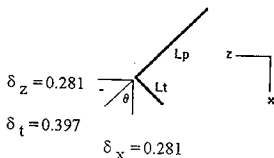
$$\theta := 45 \cdot \text{deg}$$

Orientation Angle

$$\delta_x := \delta_t \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_t \sin(\theta)$$



$$\delta x_i := \delta_i \cos(\theta)$$

$$\delta z_i := \delta_i \sin(\theta)$$

δx_i (+x)

0
0.042
0.147
0.244
0.281

δz_i (+z)

0
0.042
0.147
0.244
0.281

A07

A08

A09

A10

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

<-----

(Vertical-support - Displacements apply at lateral supports, only.)

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

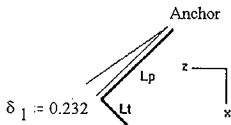
Calc. No.: W-320-27-013
Revision No.: 2
Page No.: 54 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: P BSK/6
Revised:

By: D.L. STONE *Dis*
By: *CD Jones*
By:

A12 to A16 Support Displacements corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

N := 7

Number of pipe segments between bend and anchor in feet.

i := 0..N $L_0 := 0$

Individual segment identifier, indexed from 0 to N.

Seg_i :=

Lengths of individual pipe segments between bend and anchor in feet.

0
12
12
12
12
12
8.67
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 870$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
144
288
432
576
720
824.04
870

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 55 of 70.

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 7/25/96

Revised:

By: D.L. STONE *DIS*
 By: *CDN*
 By:

Displacements weighted as to distance from anchor (inches).

δ_i	(-x)
0	
0.038	A16
0.077	A15
0.115	A14
0.154	A13
0.192	A12
0.22	A11
0.232	A10

x,z Coordinates of weighted deflections for input to Autopipe:

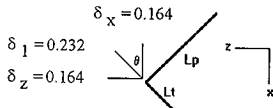
$\theta := 45 \text{ deg}$

Orientation Angle

$\delta_x := \delta_1 \cos(\theta)$

x,z Coordinates of deflections for input to Autopipe:

$\delta_z := \delta_1 \sin(\theta)$



$\delta x_i := \delta_i \cos(\theta)$

$\delta z_i := \delta_i \sin(\theta)$

δx_i (-x)

0
0.027
0.054
0.081
0.109
0.136
0.155
0.164

δz_i (+z)

0
0.027
0.054
0.081
0.109
0.136
0.155
0.164

(Anchor - No displacement.)

(Displacements < 0.063 are considered negligible.)

<-----

<-----

<-----

(Vertical-support - Displacements apply at lateral supports, only.
 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 56 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

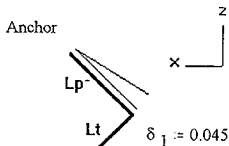
WO/Job No.: ER4319
 Date: 9/3/96
 Checked: 7/25/96
 Revised:

By: D.L. STONE *Dis*
 By: *CD Jones*
 By:

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A23

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

Deflection of Lp leg corresponding to thermal displacement of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

N := 6

Number of pipe segments between bend and anchor in feet.

i := 0..N L₀ := 0

Individual segment identifier, indexed from 0 to N.

Seg_i :=

0
12
12
12
12
8.67
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 726$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L _{i+1}
0
144
288
432
576
680.04
726

Effective pipe length (cumulative) from anchor in inches.

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 57 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/12/96
 Revised:

By: D.L. STONE DLS
 By: [Signature]

$$\delta_i := \frac{\delta_1}{L_p} L_{i+1}$$

Displacement of Lt leg due to δ_1 .

δ_i	
0	(Anchor)
0.009	A18
0.018	A19
0.027	A20
0.036	A21
0.042	A22
0.045	A23

Displacements weighted as to distance from Anchor (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

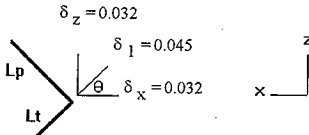
$$\theta := 45 \text{ deg}$$

Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$



$$\delta x_i := \delta_1 \cdot \cos(\theta)$$

$$\delta z_i := \delta_1 \cdot \sin(\theta)$$

δx_i (-x)

0
0.006
0.013
0.019
0.025
0.03
0.032

δz_i (+z)

0
0.006
0.013
0.019
0.025
0.03
0.032

(Anchor - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.
 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013
 Revision No.: 2
 Page No.: 58 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

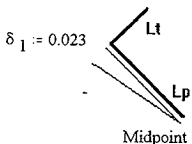
WO/Job No.: ER4319
 Date: 9/3/96
 Checked: 9/12/96
 Revised:

By: D.L. STONE DIS
 By: C.D. Stone

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A26

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

Displacement of Lp leg corresponding to thermal displacement of Lt leg.



$$\delta_1 := 0.023$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$N := 3$$

Number of pipe segments between bend and anchor/midpoint in feet.

$$i := 0..N$$

$$L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

0
12.719
8.308
3.857

Lengths of individual pipe segments between bend and midpoint in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 298.608$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

L_{i+1}
0
152.628
252.324
298.608

Effective pipe length (cumulative) from midpoint in inches.

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Displacement of Lt leg due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 59 of 70

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: 9/13/96

Revised:

By: D.L. STONE DLS

By: C.D. Jones

By:

δ_i	(Midpoint)
0	
0.012	A28
0.019	A27
0.023	A26

Displacements weighted as to distance from midpoint (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

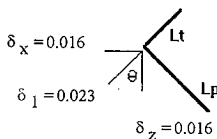
$$\theta := 45 \text{ deg}$$

Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i	
0	
0.008	A28
0.014	A27
0.016	A26

δz_i	
0	
0.008	A28
0.014	A27
0.016	A26

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.)

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320-27-013
 Revision No.: 2
 Page No.: 60 of 70

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9/3/96
 Checked: 9/12/96
 Revised:

By: D.L. STONE DLS
 By: CD Jones
 By:

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A32

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

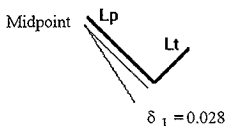
A30 support displacement corresponding to thermal expansion of Lt leg.

$$d_1 := 0.028$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$L := 12.719 + 8.308 + 3.857$$

Total distance between adjacent bends.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
12.712
9.481
3.855

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 312.576 \quad \text{Total length of Lt leg (in inches).}$$

$$L_{i+1} := L_i + (Seg_i) \cdot 12 \quad L_{i+1} \quad \text{Effective pipe length (cumulative) from midpoint in inches.}$$

0
152.544
266.316
312.576

$$d_i := \frac{d_1}{L_p} \cdot L_{i+1}$$

Support displacement due to d_1 .

DESIGN ANALYSIS

Calc. No.: W- 320-27- 013
Revision No.: 2
Page No.: 62 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

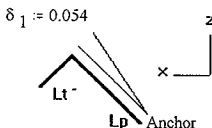
WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: P 12596
Revised:

By: D.L. STONE DLS
By: CD Jones

THERMAL DISPLACEMENTS for BEND at SLURRY PIPE NODE A35

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A37 and A38 Support Displacements corresponding to thermal expansion of Lt leg.



Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014) .

$N := 4$

Number of pipe segments between bend and anchor in feet.
Individual segment identifier, indexed from 0 to N.

$i := 0..N$ $L_0 := 0$

$Seg_i :=$

0
12
12
9.81
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 451.68$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
144
288
405.72
451.68

$$\delta_1 := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 63 of 70

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: P12596
Revised:

By: D.L. STONE DL
By: C.D. Jones

$$\delta_i$$

0	(Anchor)
0.017	A38
0.034	A37
0.049	A36
0.054	A35

Displacements weighted as to distance from anchor (inches).

x,z Coordinates of weighted deflections for input to Autopipe:

$$\theta := 45 \cdot \text{deg}$$

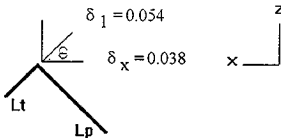
Orientation Angle

$$\delta_x := \delta_1 \cdot \cos(\theta)$$

x,z Coordinates of deflections for input to Autopipe:

$$\delta_z := \delta_1 \cdot \sin(\theta)$$

$$\delta_z = 0.038$$



$$\delta x_i := \delta_i \cdot \cos(\theta)$$

$$\delta z_i := \delta_i \cdot \sin(\theta)$$

δx_i (-x)

0
0.012
0.024
0.034
0.038

A38
A37
A36
A35

δz_i (+z)

0
0.012
0.024
0.034
0.038

A38
A37
A36
A35

(Anchor/Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013

Revision No.: 2

Page No.: 64 of 72

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9/3/96
Checked: *[Signature]*
Revised:

By: D.L. STONE *DL S*
By: *[Signature]*
By:

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE 151

A153 Support Displacement corresponding to thermal expansion of Lp leg.

$$\delta_t = 0.456$$

$$L := (2 \cdot 3.83) + 13 + 5.88 + 7.12 + 13.88$$

$$\frac{L}{2} - (3.83 + 13) = 6.94$$



Lateral displacement of Lt leg caused by thermal expansion of Lp leg, provided by STAB. (Calculation # W-320-27-014).

Total distance between adjacent bends.

Segment adjacent to Midpoint.

$$N := 3$$

$$i := 0..N \quad L_0 := 0$$

Number of pipe segments between bend and midpoint in feet.

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

0
6.94
13
3.83

Lengths of individual pipe segments between bend and midpoint in feet.

$$L_t := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_t = 285.24$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

0
83.28
239.28
285.24

Effective pipe length (cumulative) from anchor in inches.

$$\delta_i = \frac{\delta_t}{L_t} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from midpoint (inches).

δ_i	(-z)
0	
0.133	A153
0.383	A152
0.456	A151

(Midpoint - No displacement.)

(Vertical-support - Displacements apply at lateral supports, only.
(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 65 of 72

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

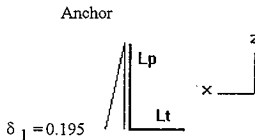
WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 9/05/96
 Revised:

By: D.L. STONE DLS
 By: CD Jones
 By:

A144 to A150 Support Displacements corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.195$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N := 8$$

Number of pipe segments between bend and anchor in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and anchor in feet.

0
13.83
13.83
13.83
13.83
13.83
13.83
13.75
3.83

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 1.207 \cdot 10^3$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12$$

Effective pipe length (cumulative) from anchor in inches.

L_{i+1}
0
165.96
331.92
497.88
663.84
829.8
995.76
$1.161 \cdot 10^3$
$1.207 \cdot 10^3$

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
Revision No.: 2
Page No.: 66 of 72

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 9/12/96
Revised:
By: D.L. STONE DLS
By: *CD Jones*

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from anchor (inches).

δ_i	(+x)	
0		(Anchor - No displacement.)
0.027	A144	(Displacements < 0.063 are considered negligible.)
0.054		
0.08	A146	<-----
0.107	A147	<-----
0.134	A148	<-----
0.161	A149	<-----
0.188	A150	(Vertical-support - Displacements apply at lateral supports, only.)
0.195	A151	(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013

Revision No.: 2

Page No.: 67 of 72

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL

PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9 / 3 / 96

Checked: *9/13/96*

Revised:

By: D.L. STONE *DL*

By: *C.D. Jones*

By:

THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A157

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A155 Support Displacement corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.027$$

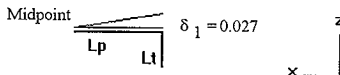
Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).

$$L := (3.83 \cdot 2) + 13 + 5.88 + 7.12 + 13.88$$

Total distance between adjacent bends.

$$\frac{L}{2} - (3.83 + 13.88) = 6.06$$

Segment adjacent to Midpoint.



$$N := 3$$

Number of pipe segments between bend and midpoint in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$Seg_i :=$$

Lengths of individual pipe segments between bend and midpoint in feet.

0
6.06
13.88
3.83

$$L_p := \left(\sum_i Seg_i \right) \cdot 12 \quad L_p = 285.24$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (Seg_i) \cdot 12$$

Effective pipe length (cumulative) from midpoint in inches.

0
72.72
239.28
285.24

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from midpoint (inches).

δ_i	(+z)
0	
0.007	A155
0.023	A156
0.027	A157

(Midpoint - No displacement.)

(Displacements < 0.063 are considered negligible.)

(Vertical-support - Displacements apply at lateral supports, only.)

(Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W- 320- 27- 013
 Revision No.: 2
 Page No.: 68 of 72

Client: WESTINGHOUSE HANFORD COMPANY
 Subject: PROJECT W-320 WASTE RETRIEVAL
 PROCESS PIPE STRESS ANALYSIS
 Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
 Date: 9 / 3 / 96
 Checked: 7 12576
 Revised:

By: D.L. STONE DLS
 By: [Signature]

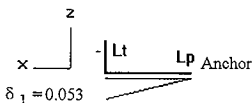
THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODES A160

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A162 Support Displacement corresponding to thermal expansion of Lt leg.

$$d_1 := 0.053$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N := 3$$

Number of pipe segments between bend and anchor in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

0
14
9.92
3.83

Lengths of individual pipe segments between bend and anchor in feet.

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 333$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12 \quad L_{i+1}$$

Effective pipe length (cumulative) from anchor in inches.

0
168
287.04
333

$$d_1 := \frac{d_1}{L_p} \cdot L_{i+1}$$

Support displacement due to d_1 .

$$d_i \quad (-Z)$$

Displacements weighted as to distance from anchor (inches).

0
0.027
0.046
0.053

(Anchor - No displacement.)

A162 (Displacements < 0.063 are considered negligible.)

A161 (Vertical-support - Displacements apply at lateral supports, only.)

A160 (Bend - Displacements apply at supports, only.)

Client: WESTINGHOUSE HANFORD COMPANY
Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS
Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319
Date: 9 / 3 / 96
Checked: 9/13/96
Revised:

By: D.L. STONE DLS
By: CD Jones

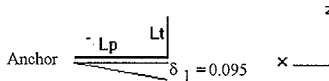
THERMAL DISPLACEMENTS for BEND at SUPERNATE PIPE NODE A165

Since displacements are applicable only at lateral supports, analysis of offset with vertical supports, only, has been omitted from this calculation.

A164 Support Displacement corresponding to thermal expansion of Lt leg.

$$\delta_1 := 0.095$$

Lateral displacement of Lp leg caused by thermal expansion of Lt leg, provided by STAB. (Calculation # W-320-27-014).



$$N := 2$$

Number of pipe segments between bend and anchor in feet.

$$i := 0..N \quad L_0 := 0$$

Individual segment identifier, indexed from 0 to N.

$$\text{Seg}_i :=$$

Lengths of individual pipe segments between bend and anchor in feet.

0
14
4.5

$$L_p := \left(\sum_i \text{Seg}_i \right) \cdot 12 \quad L_p = 222$$

Total length of Lt leg (in inches).

$$L_{i+1} := L_i + (\text{Seg}_i) \cdot 12 \quad L_{i+1}$$

0
168
222

Effective pipe length (cumulative) from anchor in inches.

$$\delta_i := \frac{\delta_1}{L_p} \cdot L_{i+1}$$

Support displacement due to δ_1 .

Displacements weighted as to distance from anchor (inches).

$$\delta_i \quad (-Z)$$

0
0.072
0.095

A164 (Anchor - No displacement.)

<-----

A165 (Bend - Displacements apply at supports, only.)

DESIGN ANALYSIS

Calc. No.: W-320-27-013

Revision No.: 2

Page No.: 70 of 72

Client: WESTINGHOUSE HANFORD COMPANY

Subject: PROJECT W-320 WASTE RETRIEVAL
PROCESS PIPE STRESS ANALYSIS

Location: C TANK FARM - 200 EAST AREA HANFORD

WO/Job No.: ER4319

Date: 9/3/96

Checked: 9/25/96

Revised:

Filename: ECC.mcd

By: D.L. STONE DLS

By: CDW

By:

Interference Resulting from Pipe Displacements at Bends.

$$ID_8 := 7.981$$

Inner Diameter of 8" Encasement pipe.

$$r_8 := \frac{ID_8}{2} \quad r_8 = 3.99$$

Inner Radius of 8" Encasement pipe.

$$OD_4 := 4.5$$

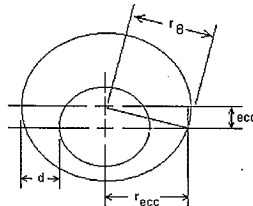
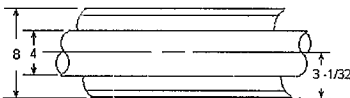
Outer Diameter of 4" Schedule 40 pipe.

$$r_4 := \frac{OD_4}{2} \quad r_4 = 2.25$$

Outer Radius of 4" Schedule 40 pipe.

$$ecc := r_8 - \left(3 + \frac{1}{32}\right) \quad ecc = 0.959$$

Eccentricity of pipe axes. (Ref , Detail 2)



$$r_{ecc} := \sqrt{(r_8^2 - ecc^2)} \quad r_{ecc} = 3.873$$

Distance from axis of 4" pipe to inner surface of 8" pipe at eccentricity.

$$d := r_{ecc} - r_4 \quad d = 1.623$$

Distance between outer surface of 4" pipe and inner surface of 8" pipe at eccentricity.

$$\delta_{max} := 1.69$$

Axial Displacement as given by Autopipe analysis (Nodepoint A95).

$$gap := d - \delta_{max} \quad gap = -0.067$$

Available gap at maximum displacement.

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

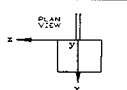
Client WESTINGHOUSE HANFORD CO.
 Subject PROCESS PIPE STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL FOR TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

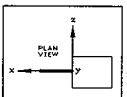
WO/Job No. ER4319
 Date 9/3/1996
 Checked 9/25/96
 Revised

Calc. No. W-320-27-013
 Revision No. 2
 Page No. 71 of 72

Filename ANCOR-SL.xls
 By D. L. STONE
 By *D. Stone*

ANCHOR LOADS AT PIT WALLS

Nozzle: Location:	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
17 241-C-06A Pump Pit	Inner Pipe								
Identification: W-320 Pump Pit Slurry Line Nozzle Node #: A00 Orientation: 	(Seismic)			57	0	74	0	876	0
	(Thermal) (*1)			990	156	-564	2676	-15804	-5244
	Encasement								
	(Seismic) (*4)	L = 217	F1 = 24.48	5305.31					
	(Thermal) (*5)	L = 217	F2 = 23.18	5023.57					
	Absolute Sum			11376	156	638	2676	16680	5244

Nozzle: Location:	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
U-11 241-AY-02A Pump Pit	Inner Pipe								
Identification: W-320 AY Slurry Line Nozzle Node #: A171 Orientation: 	(Seismic)			0	0	0	0	0	0
	(Thermal) (*1)			-536	-78	305	-108	-12720	-1344
	Encasement								
	(Seismic) (*4)	L = 138	F1 = -24.48	-3378.24					
	(Thermal) (*5)	L = 138	F2 = -23.18	-3198.84					
	Absolute Sum			7113	78	305	108	12720	1344

(*1) (Ref. Appendix A, Autopipe Filename: TRAN-SL)

(*2) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3
 and # ES-320-M6: (Ref. Appendix D)

(*3) For underground pipe:

(For SEISMIC: Ref. Calculation W320-27-014, Appendix. A, Page 5, Soil Friction)

(For THERMAL: Ref. Calculation W320-27-014, Appendix. B, Page 5, Static Soil Friction)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc. No. W-320-27-013

Revision No. 2

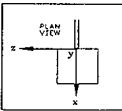
Page No. 72 of 72

Client WESTINGHOUSE HANFORD CO.
 Subject PROCESS PIPE STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

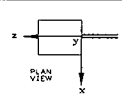
WO/Job No. ER4319
 Date 9/3/1996
 Checked 9/25/96
 Revised

Filename ANCOR-SP.xls
 By D. L. STONE
 By D. Stone

ANCHOR LOADS AT PIT WALLS

Nozzle: 6 Location: 241-C-06C Sluice Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 Supernate Line Nozzle Node #: A00 Orientation: 	Inner Pipe								
	(Seismic)			264	0	207	0	5424	0
	(Thermal)			378	-45	30	288	-3456	432
	(*1)								
	Encasement								
	(Seismic) (*4)	L = 201	F1 = 24.48	4932.23					
	(Thermal) (*5)	L = 201	F2 = 23.18	4670.31					
	Absolute Sum			10245	45	237	288	8880	432

DLS 10-3-96

Nozzle: U-2 Location: 241-AY-02E Sluice Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 AY Supernate Line Nozzle Node #: A167 Orientation: 	Inner Pipe								
	(Seismic)			0	0	0	0	0	0
	(Thermal)			-633	-67	964	-972	33396	-36
	(*1)								
	Encasement								
	(Seismic) (*4)	L = 120	F1 = 24.48			2937.60			
	(Thermal) (*5)	L = 120	F2 = 23.18			2781.60			
	Absolute Sum			633	67	6683	972	33396	36

(*1) (Ref. Appendix B, Autopipe Filename: TRAN-SP)

(*2) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3 and # ES-320-M6: (Ref. Appendix D)

(*3) For underground pipe:

(For SEISMIC: Ref. Calculation W320-27-014, Appendix. AO, Page 5, Soil Friction)

(For THERMAL: Ref. Calculation W320-27-014, Appendix. AP, Page 5, Static Soil Friction)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

APPENDIX A

SLURRY LINE PROCESS PIPE

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
*** SEGMENT A						
A00	Run	0	0	0	0	PIPE-1
A01	Run	-7.07	0	0	0	
A02	Run	-9.49	0	0	0	
A03	Bend	-1.50	0	0	0	Elbow, Radius = 40.00 inch Bend angle change = 45.03 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A04	Run	-1.06	0	-1.06		
A05	Run	-9.35	0	-9.35		
A06	Run	-10.08	0	-10.08		
A07	Run	-7.49	0	-7.49		
A08	Bend	-2.71	0	-2.71		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A10	Run	3.66	0	3.66		
A11	Bend	-2.71	0	-2.71		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A12	Run	-2.71	0	-2.71		
A13	Run	-5.30	0	-5.30		
A14	Run	-8.49	0	-8.49		
A15	Run	-8.49	0	-8.49		
A16	Run	-8.48	0	-8.49		
A17	Run	-8.48	0	-8.49		
A18	Run	-8.48	0	-8.49		
A19	Run	-8.48	0	-8.49		
A20	Run	-8.48	0	-8.48		
A21	Run	-8.48	0	-8.48		
A22	Run	-5.30	0	-5.30		
A23	Bend	-2.71	0	-2.71		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A25	Run	3.66	0	-3.66		
A26	Bend	2.71	0	-2.71		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A27	Run	-2.71	0.44	-2.71		Flex = 1.000
A28	Run	-6.66	1.07	-6.66		
A29	Run	-8.93	1.44	-8.93		
A30	Run	-8.93	1.44	-8.93		
A31	Run	-6.66	1.07	-6.66		
A32	Bend	-2.71	0.44	-2.71		Elbow, Radius = 40.00 inch Bend angle change = 89.98 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A33	Run	-2.71	0	2.71		
A34	Run	-2.71	0	3.15		
A35	Bend	-2.71	0	2.71		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A36	Run	-2.71	0	-2.71		
A37	Run	-2.91	0	-2.71		
A38	Run	-8.49	0	-8.48		
A39	Run	-8.48	0	-8.48		
A40	Run	-8.48	0	-8.48		
A41	Run	-8.48	0	-8.48		
A42	Run	-8.41	0	-8.41		
A43	Bend	-1.06	0	-1.06		Elbow, Radius = 40.00 inch Bend angle change = 44.98 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A44	Run	0	0	-1.50		
A45	Run	0	0	-13.01		
A46	Run	0	0	-13.01		
A47	Run	0	0	-13.50		
A48	Run	0	0	-12.75		
A49	Run	0	0	-12.75		
A50	Run	0	0	-12.75		
A51	Run	0	0	-12.75		
A52	Run	0	0	-12.75		
A53	Run	0	0	-12.75		
A54	Run	0	0	-13.25		
A55	Bend	0	0	-3.83		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A56	Run	-3.83	0	0		SIF - In 1.00, Out = 1.00 Flex = 1.000
A57	Bend	-7.34	0	0		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A58	Run	0	0	-3.83		
A59	Run	0	0	-13.44		
A60	Run	0	0	-13.33		
A61	Run	0	0	-13.33		
A62	Run	0	0	-13.33		
A63	Run	0	0	-13.33		
A64	Run	0	0	-13.33		
A65	Run	0	0	-13.33		
A66	Run	0	0	-13.33		
A67	Run	0	0	-13.33		
A68	Run	0	0	-13.33		
A69	Run	0	0	-13.33		
A70	Run	0	0	-13.33		
A71	Run	0	0	-13.33		
A72	Run	0	0	-13.33		
A73	Run	0	0	-13.33		
A74	Run	0	0	-13.33		
A75	Bend	0	0	-3.83		
A76	Run	-3.83	0.38	0		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A77	Bend	-7.34	0.38	0		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A78	Run	0	0	-3.83		
A79	Run	0	0	-13.44		
A80	Run	0	0	-13.33		
A81	Run	0	0	-13.33		
A82	Run	0	0	-13.33		
A83	Run	0	0	-13.33		
A84	Run	0	0	-13.33		

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A85	Run	0	0	-13.33		
A86	Run	0	0	-13.33		
A87	Run	0	0	-13.33		
A88	Run	0	0	-13.33		
A89	Run	0	0	-13.33		
A90	Run	0	0	-13.33		
A91	Run	0	0	-13.33		
A92	Run	0	0	-13.33		
A93	Run	0	0	-13.33		
A94	Run	0	0	-13.44		
A95	Bend	0	0	-3.83		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A96	Run	-3.83	0	0		
A97	Run	-11.25	0	0		
A98	Run	-11.84	0	0		
A99	Run	-11.25	0	0		
A100	Bend	-3.83	0	0		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A101	Run	0	0	-3.83		
A102	Run	0	0	-13.00		
A103	Run	0	0	-12.55		
A104	Run	0	0	-12.55		
A105	Run	0	0	-12.25		
A106	Run	0	0	-12.25		
A107	Run	0	0	-12.25		
A108	Run	0	0	-12.25		
A109	Run	0	0	-12.25		
A110	Run	0	0	-2.68		
A111	Run	0	0.11	-1.62		
A112	Run	0	0	-11.00		
A113	Run	0	0.72	-11.00		
A114	Bend	0	0.72	-11.00		Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A115	Run	3.83	0	0		
A116	Run	12.34	0	0		

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Y	Z	
A117	Bend	3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A118	Run	0	-3.83	0	
A119	Run	0	-13.74	0	
A120	Run	0	-13.83	0	
A121	Run	0	-13.83	0	
A122	Run	0	-13.83	0	
A123	Run	0	-13.83	0	
A124	Run	0	-13.83	0	
A125	Run	0	-13.83	0	
A126	Run	0	-13.83	0	
A127	Run	0	-13.83	0	
A128	Run	0	-13.83	0	
A129	Run	0	-13.83	0	
A130	Run	0	-13.83	0	
A131	Run	0	-13.75	0	
A132	Run	0	-13.75	0	
A133	Bend	0	-3.83	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A134	Run	-3.83	0.32	0	
A135	Run	-9.34	0.91	0	
A135	Bend	-3.83	0.32	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A136	Run	0	-3.83	0	
A137	Run	0	-13.75	0	
A138	Run	0	-13.83	0	
A139	Run	0	-13.83	0	
A140	Run	0	-13.83	0	
A141	Run	0	-13.83	0	
A142	Run	0	-13.83	0	
A143	Run	0	-13.83	0	
A144	Run	0	-13.83	0	
A145	Run	0	-13.83	0	
A146	Run	0	-13.83	0	
A147	Run	0	-13.83	0	
A148	Run	0	-13.83	0	
A149	Run	0	-13.83	0	

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Y	Z	
A150	Run	0	-13.75	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A151	Bend	0	-3.83	0	
A152	Run	-3.83	0	0	
A153	Run	-13.00	0	0	
A154	Run	-5.88	0	0	
A155	Run	-7.12	0	0	
A156	Run	-12.88	0	0	
A157	Bend	-3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A159	Run	0	-5.75	0	
A160	Bend	0	-3.83	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A161	Run	-3.83	0	0	
A162	Run	-10.92	0	0	
A163	Run	-14.00	0	0	
A164	Run	-14.00	0	0	
A165	Run	-8.43	0	0	
A166	Bend	-3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A168	Run	0	5.92	0	
A169	Bend	0	3.83	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A170	Run	-3.83	0	0	
A171	Run	-7.67	0	0	

Total weight of empty pipes : 19362 lb

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
*** SEGMENT A			
A00	0.00	0.00	0.00 ANCHOR Thermal movements : None
A01	-7.07	0.00	0.00 GUIDE ID : A01 1, Connected to Ground
A02	-16.56	0.00	0.00 Gaps set Weightless
A03 N	-16.68	0.00	0.00 Stiffness = RIGID
A03	-18.06	0.00	0.00 TI ID : A03 1, Connected to Ground
A03 M	-17.92	0.00	0.00 Gap-down = 0.00, Above = 0.06 inch
A03 F	-17.92	0.00	0.00 Gap-left = 0.06, Right = 0.06 inch
A04	-18.06	0.00	0.00 Friction = 0.15
A05	-28.47	0.00	0.00 Gaps set Weightless
A06	-38.55	0.00	0.00 -20.49 GUIDE ID : A05 1, Connected to Ground
A07	-46.04	0.00	0.00 -27.98 INCLIN ID : A06 1, Connected to Ground
A08 N	-46.39	0.00	0.00 Stiffness = RIGID
A08 M	-48.72	0.00	0.00 Gap-down = 0.00, Above = 0.06 inch
A08 F	-51.11	0.00	0.00 Gap-left = 0.06, Right = 0.06 inch
A10	-52.41	0.00	0.00 Friction = 0.15
A11 N	-52.76	0.00	0.00 Gaps set Weightless
A11 M	-55.12	0.00	0.00 Stiffness = RIGID
A11 F	-57.48	0.00	0.00 ID : A09 1, Connected to Ground
A12	-57.83	0.00	0.00 Along global Y direction

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A13	-65.13	0.00	0.00 -32.33 GUIDE ID : A13 1, Connected to Ground
A14	-71.61	0.00	0.00 -40.82 GUIDE ID : A14 1, Connected to Ground
A15	-80.10	0.00	0.00 -49.30 GUIDE ID : A15 1, Connected to Ground
A16	-88.58	0.00	0.00 -57.79 GUIDE ID : A16 1, Connected to Ground
A17	-97.07	0.00	0.00 -66.27 ANCHOR ID : A17 1, Connected to Ground
A18	-105.55	0.00	0.00 -74.76 GUIDE ID : A18 1, Connected to Ground
A19	-114.04	0.00	0.00 -83.24 GUIDE ID : A19 1, Connected to Ground
A20	-122.52	0.00	0.00 -91.73 GUIDE ID : A20 1, Connected to Ground
A21	-131.01	0.00	0.00 -100.21 GUIDE ID : A21 1, Connected to Ground

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 MODEL PAGE 11

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A22	-136.31	0.00	-105.51	INCLIN	ID : A22 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A23 N	-136.66	0.00	-105.86		
A23	-139.02	0.00	-108.22	TI	
A23 M	-137.64	0.00	-108.22		
A23 F	-136.66	0.00	-110.58		
A25	-135.36	0.00	-111.88	INCLIN	ID : A24 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A26 N	-135.00	0.00	-112.32		
A26	-135.00	0.00	-114.59	TI	
A26 M	-134.02	0.11	-114.59		
A26 F	-134.99	0.38	-116.53		
A27	-135.35	0.44	-117.30	INCLIN	ID : A27 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A28	-142.01	1.51	-123.96	GUIDE	ID : A28 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A29	-150.95	2.95	-132.89	GUIDE	ID : A29 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A30	-159.88	4.39	-141.82	GUIDE	ID : A30 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

TRAN-SL OUT 9-6-96 9:52a

HN-2472, Rev. 0, Page 84

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 MODEL PAGE 12

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A31	-166.54	5.46	-148.48	INCLIN	ID : A31 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A32 N	-166.90	5.52	-148.85	TI	
A32	-169.24	5.90	-151.19		
A32 M	-167.85	5.90	-149.83		
A32 F	-171.40	5.90	-148.48	INCLIN	ID : A33 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A34	-175.08	5.90	-145.36	INCLIN	ID : A34 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A35 N	-175.43	5.90	-145.01		
A35	-177.79	5.90	-142.65	TI	
A35 M	-177.79	5.90	-144.03		
A35 F	-180.15	5.90	-145.01		
A36	-180.50	5.90	-145.36	INCLIN	ID : A36 1, Connected to Ground Stiffness = RIGID Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A37	-187.43	5.90	-152.29	GUIDE	ID : A37 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A38	-195.92	5.90	-160.77	GUIDE	ID : A38 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A39	-204.40	5.90	-169.26	ANCHOR	Rigid Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A40	-212.88	5.90	-177.74	GUIDE	ID : A40 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

Page 6 of 104

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A41	-221.36	5.90	-186.22	GUIDE	Gap-Left = 0.06, Right = 0.06 inch Gaps set Weightless Friction = 0.15 ID : A41 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal: 1
A42	-229.77	5.90	-194.63	DISPL	
A43	-229.85	5.90	-194.71		
A43	-230.83	5.90	-195.69	TI	
A43	-230.83	5.90	-195.79		
A43 F	-230.83	5.90	-197.07		
A43	-230.83	5.90	-197.07		
A45	-230.83	5.90	-210.20	GUIDE	ID : A45 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A46	-230.83	5.90	-223.70	GUIDE	Thermal: 1 ID : A46 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A47	-230.83	5.90	-237.20	GUIDE	Thermal: 1 ID : A47 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A48	-230.83	5.90	-249.95	GUIDE	Thermal: 1 ID : A48 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A49	-230.83	5.90	-262.70	ANCHOR	Thermal movements : None ID : A49 1, Connected to Ground Stiffness = RIGID
A50	-230.83	5.90	-275.45	GUIDE	ID : A50 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A51	-230.83	5.90	-288.20	GUIDE	Friction = 0.15 Gaps set Weightless ID : A51 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A52	-230.83	5.90	-300.95	GUIDE	ID : A52 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A53	-230.83	5.90	-313.70	GUIDE	ID : A53 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
I53	-230.83	5.90	-326.45	GUIDE	ID : I53 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A54	-230.83	5.90	-339.70	INCLIN	ID : A54 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A55 N	-230.83	5.90	-340.20		
A55	-230.83	5.90	-343.53	TI	
A55 M	-231.80	5.90	-342.55		
A55 F	-234.16	5.90	-343.53		
A56	-234.66	5.90	-343.53	INCLIN	ID : A56 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
I56	-242.00	5.90	-343.53	INCLIN	ID : I56 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A57 N	-242.49	5.90	-343.53		

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A57	-245.83	5.90 -343.53 TI	Stiffness = RIGID
A57 M	-244.85	5.90 -344.51	Gap-down = 0.00, Above = 0.12 inch
A57 F	-245.83	5.90 -346.86	Gap-left = 0.06, Right = 0.06 inch
A58	-245.83	5.90 -347.36 INCLIN	Along global Y direction Stiffness = RIGID Gap-down = 0.00, plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A59	-245.83	5.90 -360.80 GUIDE	ID : A59 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A60	-245.83	5.90 -374.13 GUIDE	ID : A60 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A61	-245.83	5.90 -387.46 GUIDE	ID : A61 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A62	-245.83	5.90 -400.79 GUIDE	ID : A62 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A63	-245.83	5.90 -414.12 GUIDE	ID : A63 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A64	-245.83	5.90 -427.45 GUIDE	ID : A64 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A65	-245.83	5.90 -440.78 GUIDE	ID : A65 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A66	-245.83	5.90 -454.11 ANCHOR	Friction = 0.15 Gaps set Weightless
A67	-245.83	5.90 -467.44 GUIDE	ID : A67 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A68	-245.83	5.90 -480.77 GUIDE	ID : A68 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A69	-245.83	5.90 -494.10 GUIDE	ID : A69 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A70	-245.83	5.90 -507.43 GUIDE	ID : A70 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A71	-245.83	5.90 -520.76 GUIDE	ID : A71 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A72	-245.83	5.90 -534.09 GUIDE	ID : A72 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A73	-245.83	5.90 -547.42 GUIDE	ID : A73 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A74	-245.83	5.90 -560.86 INCLIN	Along global Y direction Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A75 N -245.83	5.90	-561.36	Gap-Minus = 0.00, Plus = 0.12 inch
A75 N -245.83	5.90	-561.36	Friction = 0.15
A75 M -245.83	5.90	-561.36	Gaps set Weightless
A75 F -249.14	6.23	-564.69	Gap-Minus = 0.00, Plus = 0.12 inch
A76 F -249.66	6.29	-564.69	Friction = 0.15
			Gaps set Weightless
176	-257.00	7.02	-564.69 INCLIN ID : A76 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A77 N -257.51	7.07	-564.69	Gap-Minus = 0.00, Plus = 0.12 inch
A77 M -260.83	7.40	-564.69	Friction = 0.15
A77 F -259.86	7.31	-565.67	Gaps set Weightless
A78 F -260.83	7.40	-568.02	Gap-Minus = 0.00, Plus = 0.12 inch
A78	-260.83	7.40	-568.52 INCLIN ID : A78 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A79	-260.83	7.40	-581.96 GUIDE ID : A79 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A80	-260.83	7.40	-595.29 GUIDE ID : A80 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A81	-260.83	7.40	-608.62 GUIDE ID : A81 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A82	-260.83	7.40	-621.95 GUIDE ID : A82 1, Connected to Ground
			Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A83	-260.83	7.40	-635.28 GUIDE ID : A83 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A84	-260.83	7.40	-648.61 GUIDE ID : A84 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A85	-260.83	7.40	-661.94 GUIDE ID : A85 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A86	-260.83	7.40	-675.27 ANCHOR RIGID
			Thermal movements : None
A87	-260.83	7.40	-688.60 GUIDE ID : A87 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A88	-260.83	7.40	-701.93 GUIDE ID : A88 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A89	-260.83	7.40	-715.26 GUIDE ID : A89 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A90	-260.83	7.40	-728.59 GUIDE ID : A90 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A91	-260.83	7.40 -741.92 GUIDE	DISPL Thermal 1 ID : A91 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A92	-260.83	7.40 -755.25 GUIDE	DISPL Thermal 1 ID : A92 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A93	-260.83	7.40 -768.58 GUIDE	DISPL Thermal 1 ID : A93 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A94	-260.83	7.40 -782.02 INCLIN	DISPL Thermal 1 ID : A94 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A95 N	-260.83	7.40 -782.52	ID : A95 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A95	-260.83	7.40 -785.85 TI	ID : A95 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A95 M	-261.80	7.40 -784.87	ID : A95 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A95 F	-264.16	7.40 -785.85	ID : A95 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A96	-264.66	7.40 -785.85 INCLIN	ID : A96 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A97	-275.91	7.40 -785.85 GUIDE	DISPL Thermal 1 ID : A97 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A98	-287.75	7.40 -785.85 GUIDE	DISPL Thermal 1 ID : A98 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A99	-299.00	7.40 -785.85 INCLIN	DISPL Thermal 1 ID : A99 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A100N	-299.49	7.40 -785.85	ID : A100 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A100	-302.83	7.40 -785.85 TI	ID : A100 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A100M	-301.85	7.40 -786.83	ID : A100 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A100F	-302.83	7.40 -789.18	ID : A100 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A101	-302.83	7.40 -789.68 INCLIN	ID : A101 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A102	-302.83	7.40 -802.68 GUIDE	ID : A102 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A103	-302.83	7.40 -814.93 GUIDE	ID : A103 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A104	-302.83	7.40 -827.18 GUIDE	ID : A104 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A105	-302.83	7.40 -839.43 GUIDE	ID : A105 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A106	-302.83	7.40 -851.68 GUIDE	ID : A106 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A107	-302.83	7.40	-863.93 ANCHOR Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Rigid
A108	-302.83	7.40	-876.18 GUIDE Thermal movements : None ID : A108 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A109	-302.83	7.40	-888.43 GUIDE ID : A109 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A110	-302.83	7.40	-900.68 GUIDE ID : A110 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A111	-302.83	7.40	-903.56 ID : A111 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A112	-302.83	7.51	-905.18 GUIDE ID : A112 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
I112	-302.83	8.23	-916.18 GUIDE ID : I112 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
I113	-302.83	8.95	-927.18 GUIDE Thermal 1 ID : I113 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A113	-302.83	9.67	-938.18 INCLIN Thermal 1 ID : A113 1, Connected to Ground Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A114N	-302.83	9.70	-938.68 Gaps set Weightless
A114	-302.83	9.89	-942.01 T1 Rigid
A114W	-301.85	9.84	-941.04 Thermal movements : None ID : A114 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.12 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A114F	-299.49	9.89	-942.01 INCLIN Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A115	-299.00	9.87	-942.01 INCLIN Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A116	-286.66	9.89	-942.01 INCLIN ID : A116 1, Connected to Ground Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A117N	-286.16	9.89	-942.01 T1 Rigid
A117	-282.83	9.89	-942.99 Thermal 1 ID : A117 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.12 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A118	-282.83	9.89	-945.84 INCLIN ID : A118 1, Connected to Ground Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A119	-282.83	9.89	-959.58 GUIDE ID : A119 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A120	-282.83	9.89	-973.41 DISPL Thermal 1 ID : A120 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A121	-282.83	9.89	-987.24 GUIDE Thermal 1 ID : A121 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A122	-282.83	9.89	-1001.07 GUIDE ID : A122 1, Connected to Ground Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A139	-299.83	11.44-1188.35	GUIDE		Friction = 0.15 Gaps set Weightless ID : A139 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A140	-299.83	11.44-1202.18	GUIDE		ID : A140 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A141	-299.83	11.44-1216.01	GUIDE		ID : A141 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A142	-299.83	11.44-1229.84	GUIDE		ID : A142 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A143	-299.83	11.44-1243.67	ANCHOR		ID : A143 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A144	-299.83	11.44-1257.50	GUIDE		ID : A144 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A145	-299.83	11.44-1271.33	GUIDE		ID : A145 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A146	-299.83	11.44-1285.16	GUIDE		ID : A146 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A147	-299.83	11.44-1298.99	GUIDE		ID : A147 1, Connected to Ground Stiffness = RIGID Thermal 1 DISPL

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A148	-299.83	11.44-1312.82	GUIDE		ID : A148 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A149	-299.83	11.44-1326.65	GUIDE		ID : A149 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A150	-299.83	11.44-1340.40	INCLIN		ID : A150 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A151N	-299.83	11.44-1340.90			ID : A151 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A151M	-299.83	11.44-1344.23	71		ID : A151 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A151F	-303.66	11.44-1344.23			ID : A151 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A152	-303.66	11.44-1344.23	INCLIN		ID : A152 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A153	-316.66	11.44-1344.23	GUIDE		ID : A153 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A154	-322.54	11.44-1344.23			ID : A154 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL
A155	-329.66	11.44-1344.23	GUIDE		ID : A155 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 DISPL

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A156	-342.54	11.44-1344.23 INCLIN	ID : A156 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A157M	-343.03	11.44-1344.23	
A157	-346.37	11.44-1344.23 TI	
A157M	-345.39	11.44-1345.21	
A157F	-346.37	11.44-1347.56	
A159	-346.37	11.44-1349.98 INCLIN	ID : A158 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A160M	-346.37	11.44-1350.48	
A160	-346.37	11.44-1353.81 TI	
A160M	-347.34	11.44-1352.83	
A160	-347.34	11.44-1352.83	
A161	-350.20	11.44-1353.81 INCLIN	ID : A161 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A162	-361.12	11.44-1353.81 GUIDE	ID : A162 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Left = 0.00, Above = 0.06 inch Gap-Right = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A163	-375.12	11.44-1353.81 ANCHOR	Rigid Thermal movements : None
A164	-389.12	11.44-1353.81 GUIDE	ID : A164 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-Left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A165	-397.54	11.44-1353.81 INCLIN	ID : A165 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A166M	-398.03	11.44-1353.81	
A166	-401.37	11.44-1353.81 TI	
A166M	-400.39	11.44-1352.83	

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A166F	-401.37	11.44-1350.48	
A168	-401.37	11.44-1347.89 INCLIN	ID : A167 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A169M	-401.37	11.44-1347.39	
A169	-401.37	11.44-1344.06 TI	
A169M	-402.34	11.44-1345.04	
A169F	-404.70	11.44-1344.06	
A170	-405.20	11.44-1344.06 INCLIN	ID : A170 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A171	-412.87	11.44-1344.06 ANCHOR	Rigid Thermal movements : None

Number of points in the system : 243

TRAN-SL PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
 09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe4.60 MODEL PAGE 29

PIPE DATA LISTING

Pipe ID/ Material	Nom/ Sch	O.D. inch	Thick. inch	Corr Mill	Insul	Weight (lb/ft) Pipe	Spec
PIPE-1	4	4.500	0.237	0.06	0.03	0	0 1.20
A312-TP304L STD						11.04	0 17.66

TRAN-SL PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
 09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe4.60 MODEL PAGE 30

MATERIAL DATA LISTING

Material Name	Pipe ID	Density (lb/cu.ft)	Pois. Ratio	Temper. deg F	Modulus E6 psi	Expans. In/100ft	Allow. psi
A312-TP304L PIPE-1	PIPE-1	501.0	0.30	180.0	28.42	1.5442	16700.0
							16700.0

TEMPERATURE AND PRESSURE DATA

-----C A S E 1-----C A S E 2-----C A S E 3-----
POINT PRESS. TEMPER. EXPAN. PRESS. TEMPER. EXPAN.
NAME psi deg F in/100ft psi deg F in/100ft

*** SEGMENT A
A00 180 1.544
325 180 1.544
A171

THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (in)	DY (in)	DZ (in)	RX (deg)	RY (deg)	RZ (deg)
A41	Thermal 1	-0.11	0.00	0.11	0.000	0.000	0.000
A45	Thermal 1	-0.15	0.00	0.00	0.000	0.000	0.000
A46	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A47	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000
A89	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A90	Thermal 1	0.09	0.00	0.00	0.000	0.000	0.000
A91	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A92	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A93	Thermal 1	0.15	0.00	0.00	0.000	0.000	0.000
A97	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000
A98	Thermal 1	0.00	0.00	0.12	0.000	0.000	0.000
A102	Thermal 1	-0.14	0.00	0.00	0.000	0.000	0.000
A103	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A104	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
I112	Thermal 1	-0.06	0.00	0.00	0.000	0.000	0.000
I113	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
A119	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A120	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A131	Thermal 1	0.07	0.00	0.00	0.000	0.000	0.000
A137	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000
A146	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A147	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A148	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A149	Thermal 1	0.16	0.00	0.00	0.000	0.000	0.000
A153	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000

ANALYSIS SUMMARY

Current model revision number : 29

Static	-	Date and Time of analysis	.....	Sep 6, 1996	9:50 AM
		Model Revision Number	.....	29	
		Number of load cases	.....	3	
		Load cases analyzed	.....	GR T1 P1	
		Gaps/Friction/Yielding considered	.....	No	
		Slender design run	.....	No	
		Outlets included	.....	No	
		Weight of contents included	.....	Yes	
		Pressure stiffening case	.....	0	
		Water elevation for buoyancy loads	.....	Not considered	
Modal	-	Date and Time of analysis	.....	Sep 6, 1996	9:50 AM
		Model Revision Number	.....	29	
		Number of modes	.....	12	
		Cutoff frequency (Hz)	.....	0	
		Weight of contents included	.....	Yes	
		Pressure stiffening case	.....	0	
		Water elevation for buoyancy loads	.....	Not considered	
Response	-	Date and Time of analysis	.....	Sep 6, 1996	9:51 AM
		Model Revision Number	.....	29	
		Number of load cases	.....	R1 R2 R3	
		Load cases analyzed	.....	Sep 6, 1996	9:50 AM
		Date and time of modal analysis	.....	12	
		Number of modes	.....	33.0	
		Cutoff frequency (Hz)	.....	29	
		Model revision of modal analysis	.....	Yes	
		Weight of contents included	.....	0	
		Pressure stiffening case	.....	Not considered	
		Water elevation for buoyancy loads	.....	Not considered	

CODE COMPLIANCE COMBINATIONS

Combination	Category	Method	Load	Factor	Allowable	Remarks
GR + Max P	Sustain	Sum	Gravity Max Long	1.00 1.00	Automatic	Default
Cold to T1	Expansion	Sum	Thermal 1	1.00	Automatic	Default
Max P	Hoop		Max Hoop	1.00	Automatic	Default
SRSS	Occasion	SRSS	Response 1 Response 2 Response 3	1.00 1.00 1.00	Automatic	User

OTHER USER COMBINATIONS

Combination	Method	Load	Factor	Remarks
GR	Sum	Gravity	1.00	Default
T1	Sum	Thermal 1	1.00	Default
P1	Sum	Press 1	1.00	Default
SUM	Sum	Gravity Thermal 1 Press 1	1.00 1.00 1.00	User
RESP	Abs sum	Response 1 Response 2 Response 3	1.00 1.00 1.00	User
TOTAL	Abs sum	SUM RESP	1.00 1.00	User

CODE COMPLIANCE

Y - Factor	0.40
Weld efficiency factor	1.00
Range reduction factor	1.00
Design Pressure factor	1.00
Minimum ratio section in reports	1.00
Include torsion stress	Y
Include torsion in code stress	Y
Include axial force in code stress	N
Longitudinal pressure calculation	P0/4t
Include rigorous pressure	Y

RESPONSE SPECTRUM LOAD CASES :

Number of load cases analysed : 3

Load case 1 - R1

Missing mass : No

ZPA : No

Combination method : SRSS

X- Spectrum : SC2&3

Multiplier : 1.00

SC2&3

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.140	0.02	0.250	0.04
0.400	0.06	0.600	0.09	0.700	0.07
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

Load case 2 - R2

Missing mass : No
ZPA : No

Combination method : SRSS

Y- Spectrum : SC283
Multiplier : 1.00

SC283

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

Load case 3 - R3

Missing mass : No
ZPA : No

Combination method : SRSS

Z- Spectrum : SC283
Multiplier : 1.00

SC283

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

F R E Q U E N C I E S

Mode Number	Frequency (Rads/sec)	Frequency (Hertz)	Period (Sec)	Participation factors		
				X	Y	Z
1	10.3567	1.6483	0.607	1.650	0.000	-0.046
2	11.7521	1.8704	0.535	-1.264	0.000	0.085
3	12.7169	2.0240	0.494	1.283	0.000	0.125
4	12.8605	2.0468	0.489	-1.223	0.000	0.073
5	13.0496	2.0769	0.481	-1.220	0.000	0.073
6	16.0393	2.5527	0.392	-1.488	0.000	0.492
7	18.9508	3.0161	0.332	0.708	0.000	0.959
8	20.8845	3.3239	0.301	-0.074	0.052	-1.171
9	21.6873	3.4516	0.290	1.525	-0.091	0.420
10	22.3583	3.5584	0.281	0.000	-0.836	0.000
11	24.5125	3.9013	0.256	0.082	0.000	-1.356
12	28.8194	4.5867	0.218	-0.403	-0.030	0.986

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
*** Segment A begin ***							
A00	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A01	GR	0.000	0.000	0.000	0.082	0.000	0.075
	T1	-0.108	0.000	0.000	0.000	0.190	0.000
	P1	-0.001	0.000	0.000	0.000	0.003	0.000
	SUM	-0.110	0.000	0.000	0.082	0.192	0.075
	RESP	0.000	0.000	0.000	0.000	0.025	0.000
	TOTAL	0.110	0.000	0.000	0.082	0.218	0.075
A02	GR	0.000	-0.340	0.000	0.193	0.000	0.177
	T1	-0.254	0.000	0.769	0.000	0.273	0.000
	P1	-0.003	0.000	0.010	0.000	0.004	0.000
	SUM	-0.257	-0.340	0.779	0.193	0.277	0.177
	RESP	0.000	0.000	0.000	0.000	0.045	0.000
	TOTAL	0.257	0.340	0.887	0.193	0.322	0.177
A03 N	GR	0.000	-0.345	0.000	0.194	0.000	0.176
	T1	-0.255	0.000	0.775	0.000	0.262	0.000
	P1	-0.003	0.000	0.010	0.000	0.003	0.000
	SUM	-0.259	-0.345	0.786	0.194	0.266	0.176
	RESP	0.000	0.000	0.000	0.000	0.044	0.000
	TOTAL	0.259	0.345	0.895	0.194	0.310	0.176
A03 M	GR	0.000	-0.379	0.000	0.209	0.000	0.158
	T1	-0.284	0.000	0.825	0.000	0.130	0.000
	P1	-0.004	0.000	0.011	0.000	0.002	0.000
	SUM	-0.288	-0.379	0.836	0.209	0.132	0.158
	RESP	0.002	0.000	0.119	0.000	0.030	0.000
	TOTAL	0.290	0.379	0.955	0.209	0.162	0.158
A03 F	GR	0.000	-0.379	0.000	0.221	0.000	0.137
	T1	-0.309	0.000	0.828	0.000	-0.008	0.000
	P1	-0.004	0.000	0.011	0.000	0.000	0.000
	SUM	-0.313	-0.379	0.839	0.221	-0.008	0.137
	RESP	0.005	0.000	0.124	0.000	0.014	0.000
	TOTAL	0.318	0.379	0.963	0.221	0.022	0.137

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A04	GR	0.000	-0.378	0.000	0.222	0.000	0.135
	T1	-0.310	0.000	0.827	0.000	-0.020	0.000
	P1	-0.004	0.000	0.011	0.000	0.000	0.000
	SUM	-0.314	-0.378	0.837	0.222	-0.020	0.135
	RESP	0.005	0.000	0.125	0.000	0.012	0.000
A05	GR	0.319	0.378	0.962	0.222	0.032	0.135
	T1	0.000	0.000	0.000	0.190	0.000	0.061
	P1	0.115	0.000	0.115	0.000	-0.172	0.000
	SUM	0.117	0.000	0.117	0.190	-0.175	0.061
	RESP	0.060	0.000	0.060	0.000	0.044	0.000
A06	GR	0.177	0.000	0.177	0.190	0.219	0.061
	T1	0.000	0.000	0.000	0.056	0.000	0.079
	P1	-0.039	0.000	-0.039	0.000	-0.201	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	-0.040	0.000	-0.040	0.056	-0.204	0.079
A07	GR	0.060	0.000	0.060	0.000	0.064	0.000
	T1	0.099	0.000	0.099	0.056	0.268	0.079
	P1	0.000	0.000	0.000	0.038	0.000	0.012
	SUM	0.264	0.000	0.264	0.000	0.032	0.000
	RESP	0.004	0.000	-0.003	0.000	0.000	0.000
A08 N	GR	0.267	0.000	-0.579	0.038	0.033	0.012
	T1	0.068	0.000	0.188	0.000	0.052	0.000
	P1	0.335	0.000	0.766	0.038	0.085	0.012
	SUM	0.000	0.002	0.000	0.035	0.000	0.011
	RESP	0.254	0.000	-0.572	0.000	0.097	0.000
A08 M	GR	0.004	0.000	-0.008	0.000	0.001	0.000
	T1	0.257	0.002	-0.579	0.035	0.098	0.011
	P1	0.072	0.000	0.191	0.000	0.045	0.000
	SUM	0.329	0.002	0.771	0.035	0.143	0.011
	RESP	0.000	0.000	0.000	0.002	0.000	0.002
A09	GR	0.172	0.000	-0.442	0.000	0.473	0.000
	T1	0.175	0.005	-0.447	0.022	0.479	0.002
	P1	0.078	0.000	0.203	0.000	0.004	0.000
	SUM	0.253	0.005	0.650	0.022	0.483	0.002
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A08 F	GR	0.000	0.002	0.000	0.013	0.000	-0.004
	T1	0.274	0.000	-0.120	0.000	0.744	0.000
	P1	0.004	0.000	-0.002	0.000	0.010	0.000
	SUM	0.277	0.002	-0.122	0.013	0.754	-0.004
	RESP	0.083	0.000	0.196	0.000	0.035	0.000
A10	GR	0.360	0.002	0.317	0.013	0.789	0.004
	T1	0.000	0.000	0.000	0.011	0.000	-0.003
	P1	0.465	0.000	0.112	0.000	0.778	0.000
	SUM	0.006	0.000	0.001	0.000	0.010	0.000
	RESP	0.472	0.000	0.113	0.011	0.788	-0.003
A11 N	GR	0.095	0.000	0.183	0.000	0.058	0.000
	T1	0.567	0.000	0.296	0.011	0.846	0.003
	P1	0.000	-0.001	0.000	0.012	0.000	-0.002
	T1	0.517	0.000	0.174	0.000	0.762	0.000
	SUM	0.007	0.000	0.002	0.000	0.010	0.000
A11 M	GR	0.524	-0.001	0.177	0.012	0.772	-0.002
	T1	0.100	0.000	0.178	0.000	0.063	0.000
	P1	0.624	0.001	0.355	0.012	0.836	0.002
	SUM	0.000	-0.003	0.000	0.011	0.000	-0.001
	RESP	0.625	0.000	0.516	0.000	0.533	0.000
A11 F	GR	0.008	0.000	0.007	0.000	0.007	0.000
	T1	0.633	-0.003	0.523	0.011	0.540	-0.001
	P1	0.115	0.000	0.141	0.000	0.085	0.000
	SUM	0.748	0.003	0.664	0.011	0.625	0.001
	RESP	0.000	-0.001	0.000	0.008	0.000	0.000
A12	GR	0.525	0.000	0.686	0.000	0.199	0.000
	T1	0.007	0.000	0.009	0.000	0.003	0.000
	P1	0.532	-0.001	0.695	0.008	0.201	0.000
	SUM	0.096	0.000	0.096	0.000	0.094	0.000
	RESP	0.628	0.001	0.791	0.008	0.296	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A13	GR	0.000	0.000	0.000	-0.002	0.000	0.009
	T1	0.519	0.000	0.519	0.000	-0.126	0.000
	P1	0.007	0.007	0.000	0.000	-0.002	0.000
	SUM	0.526	0.000	0.526	-0.002	-0.128	0.009
	RESP	0.000	0.000	0.000	0.000	0.047	0.000
	TOTAL	0.526	0.000	0.526	0.002	-0.175	0.009
A14	GR	0.000	0.000	0.000	0.004	0.000	0.001
	T1	0.330	0.000	0.330	0.000	0.034	0.000
	P1	0.005	0.000	0.005	0.000	0.000	0.000
	SUM	0.335	0.000	0.335	0.004	0.034	0.001
	RESP	0.000	0.000	0.000	0.000	0.013	0.000
	TOTAL	0.335	0.000	0.335	0.004	0.047	0.001
A15	GR	0.000	0.000	0.000	0.001	0.000	0.002
	T1	0.240	0.000	0.240	0.000	-0.009	0.000
	P1	0.003	0.000	0.003	0.000	0.000	0.000
	SUM	0.263	0.000	0.263	0.001	-0.009	0.002
	RESP	0.000	0.000	0.000	0.000	0.003	0.000
	TOTAL	0.263	0.000	0.263	0.001	0.012	0.002
A16	GR	0.000	0.000	0.000	0.001	0.000	0.001
	T1	0.132	0.000	0.132	0.000	0.002	0.000
	P1	0.002	0.000	0.002	0.000	0.000	0.000
	SUM	0.132	0.000	0.132	0.001	0.002	0.001
	RESP	0.000	0.000	0.000	0.000	0.001	0.000
	TOTAL	0.132	0.000	0.132	0.001	0.003	0.001
A17	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A18	GR	0.000	0.000	0.000	0.001	0.000	0.001
	T1	-0.002	0.000	-0.002	0.000	-0.002	0.000
	P1	-0.002	0.000	-0.002	0.000	0.000	0.000
	SUM	-0.132	0.000	-0.132	0.001	-0.002	0.001
	RESP	0.000	0.000	0.000	0.000	0.001	0.001
	TOTAL	0.132	0.000	0.132	0.001	0.003	0.001

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A19	GR	0.000	0.000	0.000	0.002	0.000	0.000
	T1	-0.261	0.000	-0.261	0.000	0.007	0.000
	P1	-0.003	0.000	-0.003	0.000	0.000	0.000
	SUM	-0.264	0.000	-0.264	0.002	0.007	0.001
	RESP	0.001	0.000	0.001	0.001	0.004	0.001
	TOTAL	0.264	0.000	0.264	0.002	0.012	0.002
A20	GR	0.000	0.000	0.000	0.000	-0.002	0.004
	T1	-0.391	0.000	-0.391	0.000	0.000	0.000
	P1	-0.005	0.000	-0.005	0.000	0.000	0.000
	SUM	-0.396	0.000	-0.396	0.000	-0.028	0.003
	RESP	0.001	0.000	0.001	0.001	0.016	0.002
	TOTAL	0.396	0.000	0.396	0.002	0.044	0.005
A21	GR	0.000	0.000	0.000	0.009	0.006	-0.003
	T1	-0.507	0.000	-0.507	0.000	0.001	0.000
	P1	-0.001	0.000	-0.001	0.000	0.000	0.000
	SUM	-0.528	0.000	-0.528	0.007	0.104	-0.003
	RESP	0.001	0.000	0.001	0.003	0.060	0.001
	TOTAL	0.529	0.000	0.529	0.010	0.164	0.003
A22	GR	-0.064	0.000	0.004	-0.002	-0.007	0.009
	T1	-0.493	0.000	-0.493	0.000	-0.007	0.000
	P1	-0.009	0.000	-0.009	0.000	0.000	0.000
	SUM	-0.706	0.000	-0.514	0.001	-0.063	0.004
	RESP	0.102	0.000	0.102	0.001	0.114	0.005
	TOTAL	0.808	0.000	0.616	0.002	0.177	0.009
A23 N	GR	-0.003	0.001	0.004	-0.004	-0.010	0.010
	T1	-0.493	0.000	-0.493	0.000	-0.007	0.000
	P1	-0.009	0.000	-0.009	0.000	0.000	0.000
	SUM	-0.705	0.000	-0.526	0.000	-0.102	0.005
	RESP	0.110	0.000	0.110	0.002	0.117	0.006
	TOTAL	0.815	0.001	0.635	0.002	0.219	0.011
A23 M	GR	0.006	-0.006	0.000	-0.004	-0.026	0.014
	T1	-0.493	0.000	-0.493	0.000	-0.007	0.000
	P1	-0.008	0.000	-0.008	0.000	0.000	0.000
	SUM	-0.610	-0.002	-0.599	0.000	-0.335	0.007
	RESP	0.164	0.003	0.130	0.003	0.147	0.009
	TOTAL	0.774	0.005	0.729	0.004	0.482	0.016

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A25 F	GR	0.022	-0.004	0.007	-0.001	-0.037	0.016
	T1	-0.401	0.004	-0.543	0.000	-0.454	-0.009
	P1	-0.005	0.000	-0.007	0.000	-0.006	0.000
	SUM	-0.385	0.000	-0.542	-0.002	-0.497	0.007
	RESP	0.227	0.003	0.118	0.003	0.173	0.012
	TOTAL	0.612	0.003	0.660	0.005	0.670	0.019
A25	GR	0.032	0.000	0.018	-0.001	-0.038	0.014
	T1	-0.254	0.000	-0.435	-0.007	-0.460	-0.012
	P1	-0.003	0.000	-0.006	0.000	-0.006	0.000
	SUM	-0.225	0.000	-0.423	-0.009	-0.504	0.002
	RESP	0.262	0.000	0.130	0.002	0.167	0.015
	TOTAL	0.487	0.000	0.553	0.011	0.671	0.017
A26 N	GR	0.035	0.001	0.021	-0.002	-0.037	0.013
	T1	-0.215	-0.002	-0.407	-0.009	-0.446	-0.013
	P1	-0.003	0.000	-0.005	0.000	-0.006	0.000
	SUM	-0.182	-0.001	-0.392	-0.011	-0.488	0.000
	RESP	0.270	0.001	0.138	0.002	0.161	0.016
	TOTAL	0.453	0.002	0.530	0.013	0.650	0.016
A26 M	GR	0.050	0.003	0.027	0.000	-0.024	0.012
	T1	-0.017	-0.007	-0.361	-0.006	-0.277	-0.007
	P1	0.000	0.000	-0.005	0.000	-0.004	0.000
	SUM	0.033	-0.004	-0.338	-0.006	-0.305	0.005
	RESP	0.311	0.005	0.161	0.003	0.109	0.023
	TOTAL	0.344	0.009	0.499	0.008	0.414	0.028
A26 F	GR	0.057	0.001	0.025	0.002	-0.007	0.014
	T1	0.049	-0.002	-0.421	0.012	-0.043	0.002
	P1	0.001	0.000	-0.006	0.000	-0.001	0.000
	SUM	0.107	-0.001	-0.402	0.014	-0.050	0.016
	RESP	0.318	0.002	0.146	0.009	0.069	0.031
	TOTAL	0.425	0.003	0.548	0.023	0.120	0.047
A27	GR	0.057	0.000	0.025	0.002	-0.003	0.014
	T1	0.045	0.000	-0.428	0.015	-0.002	0.003
	P1	0.001	0.000	-0.006	0.000	0.000	0.000
	SUM	0.101	0.000	-0.409	0.017	-0.005	0.018
	RESP	0.315	0.000	0.142	0.010	0.074	0.033
	TOTAL	0.418	0.000	0.552	0.027	0.079	0.051

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A28	GR	0.041	-0.007	0.041	0.004	0.010	0.013
	T1	-0.291	0.047	-0.291	0.012	0.144	-0.001
	P1	-0.004	0.001	-0.004	0.000	0.002	0.000
	SUM	-0.254	0.049	-0.294	0.017	0.156	0.011
	RESP	0.185	0.030	0.185	0.018	0.080	0.030
	TOTAL	0.439	0.071	0.439	0.035	0.236	0.041
A29	GR	0.041	-0.007	0.041	0.006	-0.005	0.006
	T1	-0.428	0.069	-0.428	-0.022	0.008	-0.030
	P1	-0.006	0.001	-0.006	0.000	0.000	0.000
	SUM	-0.393	0.070	-0.393	-0.017	0.003	-0.025
	RESP	0.185	0.030	0.185	0.016	0.031	0.017
	TOTAL	0.578	0.093	0.578	0.033	0.034	0.041
A30	GR	0.041	-0.007	0.041	0.011	0.006	0.000
	T1	-0.566	0.091	-0.566	-0.084	-0.151	-0.036
	P1	-0.007	0.001	-0.007	-0.001	-0.002	0.000
	SUM	-0.537	0.091	-0.537	-0.074	-0.147	-0.037
	RESP	0.185	0.030	0.185	0.025	0.086	0.012
	TOTAL	0.717	0.115	0.717	0.099	0.234	0.049
A31	GR	0.034	0.000	0.048	0.007	-0.004	0.001
	T1	-0.452	0.000	-0.901	-0.093	0.088	-0.021
	P1	-0.006	0.000	-0.012	-0.001	0.001	0.000
	SUM	-0.420	0.000	-0.864	-0.087	0.085	-0.020
	RESP	0.290	0.000	0.242	0.024	0.167	0.005
	TOTAL	0.715	0.000	1.106	0.111	0.252	0.026
A32 N	GR	0.034	0.000	0.048	0.005	-0.006	0.002
	T1	-0.466	-0.004	-0.899	-0.087	0.142	-0.019
	P1	-0.006	0.000	-0.012	-0.001	0.002	0.000
	SUM	-0.438	-0.004	-0.862	-0.083	0.137	-0.018
	RESP	0.303	0.001	0.242	0.022	0.164	0.005
	TOTAL	0.741	0.006	1.105	0.105	0.301	0.023
A32 M	GR	0.036	0.000	0.043	0.002	-0.017	0.001
	T1	-0.551	-0.010	-0.769	-0.057	0.450	-0.005
	P1	-0.007	0.000	-0.010	-0.001	0.006	0.000
	SUM	-0.522	-0.010	-0.737	-0.056	0.440	-0.004
	RESP	0.334	0.003	0.246	0.015	0.141	0.003
	TOTAL	0.856	0.013	0.983	0.071	0.581	0.007

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in) X Y Z	ROTATIONS (deg) X Y Z
A32 F	GR	0.031 0.000 0.032	0.000 -0.025 -0.001
	T1	-0.457 -0.001 -0.467	-0.030 0.708 0.009
	P1	-0.006 0.000 -0.006	0.000 0.009 0.000
	SUM	-0.432 -0.001 -0.441	-0.030 0.692 0.009
	RESP	0.309 0.000 0.292	0.008 0.125 0.001
	TOTAL	0.741 0.002 0.734	0.038 0.817 0.010
A33	GR	0.029 0.000 0.030	0.000 -0.027 -0.001
	T1	-0.409 0.000 -0.408	-0.025 -0.740 0.011
	P1	-0.005 0.000 -0.005	0.000 0.010 0.011
	SUM	-0.385 0.000 -0.384	-0.025 -0.723 0.011
	RESP	0.302 0.000 0.298	0.007 0.126 0.002
	TOTAL	0.686 0.000 0.682	0.032 0.849 0.012
A34	GR	0.011 0.000 0.012	0.001 -0.027 0.000
	T1	0.055 0.000 0.152	-0.007 0.734 0.009
	P1	0.001 0.000 0.002	0.000 0.010 0.000
	SUM	0.067 0.000 0.166	-0.006 0.717 0.009
	RESP	0.265 0.000 0.325	0.001 0.125 0.002
	TOTAL	0.332 0.000 0.491	0.007 0.842 0.012
A35 N	GR	0.009 0.000 0.010	0.001 -0.025 0.000
	T1	0.103 0.000 0.210	-0.006 -0.700 0.007
	P1	0.001 0.000 0.003	0.000 0.009 0.000
	SUM	0.113 0.000 0.223	-0.005 0.684 0.008
	RESP	0.265 0.000 0.325	0.001 0.122 0.002
	TOTAL	0.379 0.000 0.548	0.006 0.806 0.009
A35 M	GR	0.004 0.000 0.000	0.001 -0.017 -0.001
	T1	0.194 0.000 0.508	-0.004 -0.435 0.000
	P1	0.002 0.000 0.007	0.000 0.006 0.000
	SUM	0.201 -0.001 0.514	-0.003 0.424 -0.001
	RESP	0.272 0.000 0.301	0.001 0.094 0.000
	TOTAL	0.473 0.001 0.815	0.004 0.517 0.001
A35 F	GR	0.006 0.000 -0.006	-0.002 -0.006 0.000
	T1	0.112 0.000 0.632	-0.002 0.119 -0.002
	P1	0.001 0.000 0.008	0.000 0.002 0.000
	SUM	0.120 0.000 0.635	-0.004 0.115 -0.003
	RESP	0.247 0.000 0.247	0.000 0.140 0.001
	TOTAL	0.367 0.000 0.882	0.004 0.255 0.003

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in) X Y Z	ROTATIONS (deg) X Y Z
A36	GR	0.007 0.000 -0.007	-0.003 -0.004 0.001
	T1	0.100 0.000 0.634	-0.002 0.066 -0.002
	P1	0.001 0.000 0.008	0.000 0.001 0.000
	SUM	0.108 0.000 0.636	-0.005 0.063 -0.001
	RESP	0.237 0.000 0.237	0.000 0.150 0.001
	TOTAL	0.345 0.000 0.872	0.005 0.212 0.002
A37	GR	0.000 0.000 0.000	-0.003 0.005 0.002
	T1	0.261 0.000 0.260	-0.001 -0.179 -0.001
	P1	0.003 0.000 0.003	0.000 -0.002 0.000
	SUM	0.264 0.000 0.264	-0.005 -0.176 0.000
	RESP	0.000 0.000 0.000	0.000 0.099 0.000
	TOTAL	0.264 0.000 0.264	0.005 0.275 0.000
A38	GR	0.000 0.000 0.000	0.000 -0.001 -0.001
	T1	0.130 0.000 0.130	-0.001 0.045 -0.001
	P1	0.002 0.000 0.002	0.000 0.001 0.000
	SUM	0.132 0.000 0.132	-0.001 0.044 -0.002
	RESP	0.000 0.000 0.000	0.000 0.025 0.000
	TOTAL	0.132 0.000 0.132	0.001 0.069 0.002
A39	GR	0.000 0.000 0.000	0.000 0.000 0.000
	T1	0.000 0.000 0.000	0.000 0.000 0.000
	P1	0.000 0.000 0.000	0.000 0.000 0.000
	SUM	0.000 0.000 0.000	0.000 0.000 0.000
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.000	0.000 0.000 0.000
A40	GR	0.000 0.000 0.000	0.133 0.000 0.082
	T1	-0.129 0.000 -0.129	0.000 -0.084 0.000
	P1	-0.002 0.000 -0.002	0.000 -0.002 0.000
	SUM	-0.131 0.000 -0.131	0.133 -0.086 0.082
	RESP	0.000 0.000 0.000	0.042 0.000 0.028
	TOTAL	0.131 0.000 0.131	0.174 0.086 0.109
A41	GR	0.000 0.000 0.000	0.112 0.000 0.317
	T1	-0.370 0.000 -0.148	0.000 0.526 0.000
	P1	-0.003 0.000 -0.003	0.000 0.007 0.000
	SUM	-0.373 0.000 -0.151	0.112 0.532 0.317
	RESP	0.000 0.000 0.000	0.041 0.000 0.098
	TOTAL	0.373 0.000 0.151	0.152 0.532 0.415

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A42	GR	0.000	-0.658	0.000	0.144	0.000	0.496
	T1	-1.772	0.000	0.998	0.000	0.344	0.000
	P1	-0.023	0.000	0.013	0.000	0.005	0.000
	SUM	-1.795	-0.658	1.011	0.144	0.349	0.496
	RESP	0.000	0.191	0.000	0.048	0.000	0.159
	TOTAL	1.795	0.849	1.011	0.192	0.349	0.656
A43 N	GR	0.000	-0.664	0.000	0.147	0.000	0.496
	T1	-1.779	0.000	1.002	0.000	0.324	0.000
	P1	-0.023	0.000	0.013	0.000	0.005	0.000
	SUM	-1.802	-0.664	1.015	0.147	0.329	0.496
	RESP	0.000	0.193	0.000	0.049	0.000	0.159
	TOTAL	1.802	0.858	1.015	0.196	0.329	0.655
A43 H	GR	0.000	-0.703	0.000	0.173	0.000	0.491
	T1	-1.837	0.000	1.020	0.000	0.097	0.000
	P1	-0.024	0.000	0.013	0.000	0.001	0.000
	SUM	-1.861	-0.703	1.033	0.173	0.098	0.491
	RESP	0.000	0.205	0.000	0.057	0.000	0.158
	TOTAL	1.861	0.908	1.033	0.231	0.098	0.649
A43 F	GR	0.000	-0.679	0.000	0.199	0.000	0.483
	T1	-1.835	0.000	1.001	0.000	-0.134	0.000
	P1	-0.024	0.000	0.013	0.000	-0.002	0.000
	SUM	-1.859	-0.679	1.014	0.199	-0.136	0.483
	RESP	0.000	0.197	0.000	0.066	0.000	0.155
	TOTAL	1.859	0.876	1.014	0.265	0.136	0.638
A44	GR	0.000	-0.674	0.000	0.201	0.000	0.482
	T1	-1.832	0.000	0.999	0.000	-0.154	0.000
	P1	-0.024	0.000	0.013	0.000	-0.002	0.000
	SUM	-1.855	-0.674	1.012	0.201	-0.156	0.482
	RESP	0.000	0.196	0.000	0.067	0.000	0.155
	TOTAL	1.855	0.869	1.012	0.268	0.156	0.637
A45	GR	0.000	0.000	0.000	0.166	0.000	0.386
	T1	-0.151	0.000	0.891	0.000	-0.468	0.000
	P1	0.000	0.000	0.010	0.000	-0.007	0.000
	SUM	-0.151	0.000	0.811	0.146	-0.475	0.386
	RESP	0.000	0.000	0.000	0.040	0.000	0.124
	TOTAL	0.151	0.000	0.811	0.186	0.475	0.510

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A46	GR	0.000	0.000	0.000	-0.039	0.000	0.287
	T1	-0.112	0.000	0.595	0.000	0.110	0.000
	P1	0.000	0.000	0.008	0.000	0.002	0.000
	SUM	-0.112	0.000	0.603	-0.039	0.112	0.287
	RESP	0.000	0.000	0.000	0.011	0.000	0.092
	TOTAL	0.112	0.000	0.603	0.050	0.112	0.379
A47	GR	0.000	0.000	0.000	0.012	0.000	0.188
	T1	-0.073	0.000	0.389	0.000	0.063	0.000
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	-0.073	0.000	0.394	0.012	-0.056	0.188
	RESP	0.000	0.000	0.000	0.003	0.000	0.060
	TOTAL	0.073	0.000	0.394	0.015	0.056	0.248
A48	GR	0.000	0.000	0.000	-0.003	0.000	0.094
	T1	0.000	0.000	0.195	0.000	0.000	0.000
	P1	0.000	0.000	0.003	0.000	0.000	0.000
	SUM	0.000	0.000	0.197	-0.003	-0.006	0.094
	RESP	0.000	0.000	0.000	0.001	0.000	0.030
	TOTAL	0.000	0.000	0.197	0.004	0.006	0.124
A49	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A50	GR	0.000	0.000	0.000	0.000	0.000	0.002
	T1	0.000	0.000	-0.196	0.000	-0.001	0.000
	P1	0.000	0.000	-0.003	0.000	0.000	0.000
	SUM	0.000	0.000	-0.198	0.000	-0.001	0.002
	RESP	0.000	0.000	0.000	0.000	0.000	0.002
	TOTAL	0.000	0.000	0.198	0.000	0.001	0.002
A51	GR	0.000	0.000	0.000	0.000	0.000	0.005
	T1	0.000	0.000	-0.492	0.000	-0.004	0.000
	P1	0.000	0.000	-0.003	0.000	0.000	0.000
	SUM	0.000	0.000	-0.495	0.000	-0.004	0.005
	RESP	0.000	0.000	0.000	0.000	0.000	0.005
	TOTAL	0.000	0.000	0.397	0.000	0.002	0.005

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A52	GR	0.000	0.000	0.000	0.007
	T1	0.000	0.000	0.000	-0.014
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.007
A53	GR	0.000	0.000	0.002	0.009
	T1	0.000	0.000	0.000	0.054
	P1	0.000	0.000	0.001	0.000
	SUM	0.000	0.000	0.002	0.055
	TOTAL	0.000	0.000	0.002	0.082
I53	GR	0.000	0.000	-0.006	0.000
	T1	0.000	0.000	0.000	-0.202
	P1	0.000	0.000	0.000	-0.003
	SUM	0.000	0.000	-0.006	-0.205
	TOTAL	0.000	0.000	0.006	0.307
A54	GR	0.000	0.000	0.018	0.000
	T1	0.495	0.000	0.000	0.234
	P1	0.007	0.000	0.000	0.003
	SUM	0.502	0.000	0.018	0.238
	TOTAL	1.038	0.000	0.015	0.429
A55 N	GR	0.000	0.002	0.015	0.014
	T1	0.468	0.000	0.000	0.296
	P1	0.006	0.000	0.000	0.004
	SUM	0.474	0.002	0.015	0.300
	TOTAL	0.956	0.000	0.000	0.184
A55 M	GR	0.000	0.005	0.009	0.012
	T1	0.225	0.000	0.000	0.652
	P1	0.003	0.000	0.000	0.009
	SUM	0.228	0.005	0.009	0.661
	TOTAL	0.636	0.000	0.009	0.799

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A55 F	GR	0.000	0.001	0.000	0.005
	T1	0.031	0.000	0.000	0.964
	P1	0.000	0.000	0.000	0.013
	SUM	0.032	0.001	0.005	0.976
	TOTAL	0.661	0.000	0.000	0.086
A56	GR	0.000	0.000	0.005	0.009
	T1	0.024	0.000	0.000	1.008
	P1	0.000	0.000	0.000	0.013
	SUM	0.024	0.000	0.005	1.021
	TOTAL	0.685	0.000	0.005	1.097
I56	GR	0.000	0.000	0.000	-0.010
	T1	-0.089	0.000	0.000	1.004
	P1	-0.001	0.000	0.000	0.013
	SUM	-0.090	0.000	0.000	1.017
	TOTAL	0.661	0.000	0.000	0.076
A57 N	GR	0.000	0.001	0.000	-0.010
	T1	-0.097	0.000	0.000	0.959
	P1	-0.001	0.000	0.000	0.013
	SUM	-0.098	0.001	0.000	0.972
	TOTAL	0.661	0.000	0.000	0.086
A57 M	GR	0.000	0.005	0.000	-0.013
	T1	-0.289	0.000	0.000	0.645
	P1	-0.004	0.000	0.000	0.008
	SUM	-0.293	0.005	0.000	0.653
	TOTAL	0.637	0.000	0.000	0.137
A57 F	GR	0.000	0.002	0.000	-0.016
	T1	-0.528	0.000	0.000	0.286
	P1	-0.007	0.000	0.000	0.004
	SUM	-0.535	0.002	0.000	0.290
	TOTAL	1.092	0.002	0.000	0.471

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A58	GR	0.000	0.000	-0.018	0.000
	T1	-0.554	0.000	0.000	-0.014
	P1	-0.007	0.000	0.000	0.224
	SUM	0.551	0.000	0.000	0.003
	RESP	0.551	0.000	-0.018	0.227
A59	GR	0.000	0.000	0.018	0.415
	T1	1.099	0.000	0.018	0.415
	P1	0.000	0.000	0.005	0.000
	SUM	0.000	0.000	0.000	-0.217
	RESP	0.000	0.000	0.003	-0.003
A60	GR	0.000	0.000	0.005	0.000
	T1	0.000	0.000	0.000	-0.217
	P1	0.000	0.000	0.000	0.019
	SUM	0.000	0.000	0.003	-0.003
	RESP	0.000	0.000	0.005	-0.220
A61	GR	0.000	0.000	0.003	0.193
	T1	0.000	0.000	0.003	0.322
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.001	0.059
A62	GR	0.000	0.000	-0.001	0.000
	T1	0.000	0.000	0.000	-0.011
	P1	0.000	0.000	0.000	0.058
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	-0.001	0.091
A63	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.015
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A64	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A65	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A66	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A67	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A68	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A69	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A70	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A64	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A65	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A66	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A67	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A68	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A69	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A70	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A70	GR	0.000	0.000	0.000	0.007
	T1	0.000	0.000	0.000	0.005
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A71	GR	0.000	0.000	0.000	0.009
	T1	0.000	0.000	0.000	0.007
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A72	GR	0.000	0.000	0.001	0.011
	T1	0.000	0.000	0.001	0.004
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A73	GR	0.000	0.000	0.003	0.000
	T1	0.000	0.000	0.003	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A74	GR	0.000	0.000	0.018	0.000
	T1	0.000	0.000	0.011	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A75 N	GR	0.000	0.002	0.000	0.014
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A75 M	GR	0.000	0.005	0.000	0.009
	T1	0.282	0.005	-1.559	0.037
	P1	0.004	0.000	-0.020	0.000
	SUM	0.286	0.010	-1.579	0.047
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.286	0.010	-1.579	0.047
A76	GR	0.000	0.000	0.000	0.006
	T1	0.065	0.002	-1.107	0.069
	P1	0.001	0.000	-0.014	0.001
	SUM	0.066	0.003	-1.121	0.075
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.066	0.003	-1.121	0.075
176	GR	-0.001	0.000	0.001	0.005
	T1	0.057	0.000	-0.985	0.074
	P1	0.001	0.000	-0.013	0.001
	SUM	0.057	0.000	-0.997	0.080
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.057	0.000	-0.997	0.080
A77 N	GR	0.000	0.000	0.001	0.000
	T1	-0.057	0.000	0.985	0.074
	P1	-0.001	0.000	0.013	0.001
	SUM	-0.058	0.000	0.999	0.070
	RESP	0.000	0.000	0.000	0.000
	TOTAL	-0.058	0.000	0.999	0.070
A77 M	GR	0.000	0.001	0.000	0.000
	T1	-0.065	-0.002	1.107	0.069
	P1	-0.001	0.000	0.014	0.001
	SUM	-0.066	-0.001	1.122	0.070
	RESP	0.000	0.000	0.000	0.000
	TOTAL	-0.066	-0.001	1.122	0.070

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in) X Y Z	ROTATIONS (deg) X Y Z
A77 F	GR	0.000 0.002 0.000	-0.016 0.000 -0.014
	T1	-0.559 -0.001 1.647	0.013 0.340 0.044
	P1	-0.007 0.000 0.021	0.000 0.004 0.001
	SUM	-0.566 0.000 1.668	-0.002 0.344 0.031
	RESP	0.753 0.000 0.000	0.000 0.186 0.000
	TOTAL	1.140 0.001 1.668	0.002 0.531 0.031
A78	GR	0.000 0.000 0.000	-0.018 0.000 -0.014
	T1	-0.591 0.000 1.639	0.011 0.269 0.044
	P1	0.000 0.000 0.021	0.000 0.003 0.001
	SUM	-0.598 0.000 1.661	-0.007 0.273 0.030
	RESP	0.553 0.000 0.000	0.000 0.194 0.000
	TOTAL	1.152 0.000 1.661	0.007 0.467 0.031
A79	GR	0.000 0.000 0.000	0.005 0.000 -0.013
	T1	0.000 0.000 1.433	-0.003 0.239 0.039
	P1	0.000 0.000 0.019	0.000 -0.003 0.001
	SUM	0.000 0.000 1.451	0.002 -0.242 0.027
	RESP	0.000 0.000 0.000	0.000 0.106 0.000
	TOTAL	0.000 0.000 1.452	0.002 0.348 0.027
A80	GR	0.000 0.000 0.000	-0.001 0.000 -0.011
	T1	0.000 0.000 1.228	0.001 0.064 0.033
	P1	0.000 0.000 0.016	0.000 0.001 0.000
	SUM	0.000 0.000 1.244	-0.001 0.065 0.023
	RESP	0.000 0.000 0.000	0.000 0.028 0.000
	TOTAL	0.000 0.000 1.244	0.001 0.093 0.023
A81	GR	0.000 0.000 0.000	0.000 0.000 -0.009
	T1	0.000 0.000 1.023	0.000 -0.017 0.028
	P1	0.000 0.000 0.013	0.000 0.000 0.000
	SUM	0.000 0.000 1.037	0.000 -0.017 0.019
	RESP	0.000 0.000 0.000	0.000 0.008 0.000
	TOTAL	0.000 0.000 1.037	0.000 0.025 0.019
A82	GR	0.000 0.000 0.000	0.000 0.000 -0.007
	T1	0.000 0.000 0.819	0.000 0.005 0.022
	P1	0.000 0.000 0.011	0.000 0.000 0.000
	SUM	0.000 0.000 0.829	0.000 0.005 0.015
	RESP	0.000 0.000 0.000	0.000 0.002 0.000
	TOTAL	0.000 0.000 0.829	0.000 0.007 0.015

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in) X Y Z	ROTATIONS (deg) X Y Z
A83	GR	0.000 0.000 0.000	0.000 0.000 -0.005
	T1	0.000 0.000 0.614	0.000 -0.001 0.017
	P1	0.000 0.000 0.008	0.000 0.000 0.000
	SUM	0.000 0.000 0.622	0.000 -0.001 0.011
	RESP	0.000 0.000 0.000	0.000 0.001 0.000
	TOTAL	0.000 0.000 0.622	0.000 0.002 0.012
A84	GR	0.000 0.000 0.000	0.000 0.000 -0.004
	T1	0.000 0.000 0.409	0.000 0.000 0.011
	P1	0.000 0.000 0.005	0.000 0.000 0.000
	SUM	0.000 0.000 0.415	0.000 0.000 0.008
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.415	0.000 0.000 0.008
A85	GR	0.000 0.000 0.000	0.000 0.000 -0.002
	T1	0.000 0.000 0.205	0.000 0.000 0.006
	P1	0.000 0.000 0.003	0.000 0.000 0.000
	SUM	0.000 0.000 0.207	0.000 0.000 0.004
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.207	0.000 0.000 0.004
A86	GR	0.000 0.000 0.000	0.000 0.000 0.000
	T1	0.000 0.000 0.000	0.000 0.000 0.000
	P1	0.000 0.000 0.000	0.000 0.000 0.000
	SUM	0.000 0.000 0.000	0.000 0.000 0.000
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.000	0.000 0.000 0.000
A87	GR	0.000 0.000 0.000	0.000 0.000 0.003
	T1	0.000 0.000 -0.205	0.000 0.003 0.000
	P1	0.000 0.000 -0.003	0.000 0.000 0.000
	SUM	0.000 0.000 -0.208	0.000 0.003 0.003
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.208	0.000 0.003 0.003
A88	GR	0.000 0.000 0.000	0.000 0.000 0.005
	T1	0.000 0.000 -0.411	0.000 -0.013 0.000
	P1	0.000 0.000 -0.005	0.000 0.000 0.000
	SUM	0.000 0.000 -0.416	0.000 -0.013 0.005
	RESP	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL	0.000 0.000 0.416	0.000 0.013 0.005

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A89	GR	0.000	0.000	0.000	0.008
	T1	0.064	-0.616	0.000	-0.019
	P1	0.000	-0.009	0.000	0.000
	SUM	0.000	-0.004	0.000	-0.019
	RESP	0.000	0.000	0.000	0.008
A90	GR	0.064	0.624	0.000	0.008
	T1	0.000	0.000	0.000	0.000
	P1	0.086	-0.821	0.000	-0.003
	SUM	0.000	-0.011	0.000	0.000
	RESP	0.006	0.032	0.000	-0.003
A91	GR	0.006	0.833	0.000	0.010
	T1	0.086	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	-0.013	0.000	-0.016
	RESP	0.107	0.001	0.000	0.013
A92	GR	0.107	0.000	0.000	0.013
	T1	0.000	0.000	0.000	0.000
	P1	0.107	-1.027	0.000	-0.016
	SUM	0.000	-0.013	0.000	0.000
	RESP	0.000	0.000	0.000	0.013
A93	GR	0.000	1.041	0.000	0.016
	T1	0.107	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.016
A94	GR	0.000	1.269	0.002	0.063
	T1	0.129	0.000	0.002	0.016
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	-0.016	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A95	GR	0.000	1.437	-0.007	0.000
	T1	0.150	0.000	0.000	-0.109
	P1	0.000	-0.019	0.000	-0.002
	SUM	0.000	-0.019	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000
A96	GR	0.000	1.457	-0.007	0.018
	T1	0.150	0.000	0.000	-0.111
	P1	0.000	-0.019	0.000	-0.002
	SUM	0.000	-0.019	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000
A97	GR	0.000	1.657	0.007	0.065
	T1	0.150	0.000	0.000	-0.111
	P1	0.000	-0.019	0.000	-0.002
	SUM	0.000	-0.019	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000
A98	GR	0.000	1.657	0.007	0.065
	T1	0.150	0.000	0.000	-0.111
	P1	0.000	-0.019	0.000	-0.002
	SUM	0.000	-0.019	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000
A99	GR	0.000	1.657	0.007	0.065
	T1	0.150	0.000	0.000	-0.111
	P1	0.000	-0.019	0.000	-0.002
	SUM	0.000	-0.019	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A95 N	GR	0.000	0.002	0.000	0.022
	T1	0.385	0.000	0.000	0.000
	P1	0.005	-0.021	0.000	0.160
	SUM	0.391	0.002	0.000	0.160
	RESP	0.844	0.000	0.000	0.021
A95 M	GR	1.234	0.002	0.000	0.022
	T1	0.000	0.008	0.000	0.000
	P1	0.250	0.000	0.000	0.341
	SUM	0.004	-0.021	0.000	0.005
	RESP	0.253	0.008	0.000	0.345
A95 F	GR	0.945	0.000	0.000	0.157
	T1	1.198	0.008	0.000	0.502
	P1	0.000	0.002	0.000	0.018
	SUM	0.132	0.000	0.000	0.500
	RESP	0.134	0.002	0.000	0.507
A96	GR	0.970	0.000	0.000	0.067
	T1	1.104	0.002	0.000	0.574
	P1	0.000	0.000	0.000	0.016
	SUM	0.002	-0.018	0.000	0.507
	RESP	0.134	0.002	0.000	0.507
A97	GR	0.000	0.000	0.000	0.016
	T1	0.124	0.000	0.000	0.523
	P1	0.002	0.000	0.000	0.008
	SUM	0.126	0.000	0.000	0.530
	RESP	0.126	0.000	0.000	0.530
A98	GR	0.000	0.000	0.000	0.016
	T1	0.124	0.000	0.000	0.523
	P1	0.002	0.000	0.000	0.008
	SUM	0.126	0.000	0.000	0.530
	RESP	0.126	0.000	0.000	0.530
A99	GR	0.000	0.000	0.000	0.016
	T1	0.124	0.000	0.000	0.523
	P1	0.002	0.000	0.000	0.008
	SUM	0.126	0.000	0.000	0.530
	RESP	0.126	0.000	0.000	0.530

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A99	GR	0.000	0.000	0.000	-0.014	0.000	-0.018
	T1	-0.405	0.000	1.009	0.000	0.352	0.000
	P1	-0.005	0.000	0.013	0.000	0.005	0.000
	SUM	-0.411	0.000	1.022	-0.014	0.357	-0.018
	RESP	0.970	0.000	0.102	0.000	0.054	0.000
	TOTAL	1.361	0.000	1.124	0.014	0.412	0.018
A100N	GR	0.000	0.002	0.000	-0.015	0.000	-0.017
	T1	-0.413	0.000	1.045	0.000	0.331	0.000
	P1	-0.005	0.000	0.013	0.000	0.005	0.000
	SUM	-0.418	0.002	1.058	-0.015	0.336	-0.017
	RESP	0.970	0.000	0.096	0.000	0.070	0.000
	TOTAL	1.369	0.002	1.154	0.005	0.406	0.017
A100M	GR	0.000	0.007	0.000	-0.016	0.000	-0.018
	T1	-0.498	0.000	1.161	0.000	0.186	0.000
	P1	-0.007	0.000	0.015	0.000	0.003	0.000
	SUM	-0.505	0.007	1.177	-0.016	0.189	-0.018
	RESP	0.944	0.000	0.040	0.000	0.165	0.000
	TOTAL	1.448	0.007	1.216	0.016	0.354	0.018
A100F	GR	0.000	0.002	0.000	-0.020	0.000	-0.019
	T1	-0.563	0.000	1.152	0.000	0.028	0.000
	P1	-0.007	0.000	0.015	0.000	0.000	0.000
	SUM	-0.571	0.002	1.167	-0.020	0.028	-0.019
	RESP	0.837	0.000	0.001	0.000	0.257	0.000
	TOTAL	1.408	0.002	1.168	0.020	0.285	0.019
A101	GR	0.000	0.000	0.000	-0.022	0.000	-0.019
	T1	-0.565	0.000	1.144	0.000	0.001	0.000
	P1	-0.007	0.000	0.015	0.000	0.000	0.000
	SUM	-0.572	0.000	1.159	-0.022	0.001	-0.019
	RESP	0.810	0.000	0.001	0.000	0.272	0.000
	TOTAL	1.382	0.000	1.160	0.022	0.272	0.019
A102	GR	0.000	0.000	0.000	0.008	0.000	-0.016
	T1	-0.140	0.000	0.944	0.000	-0.128	0.000
	P1	0.000	0.000	0.012	0.000	-0.002	0.000
	SUM	-0.140	0.000	0.956	0.008	-0.130	-0.016
	RESP	0.000	0.000	0.001	0.000	0.162	0.000
	TOTAL	0.140	0.000	0.957	0.008	0.292	0.016

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A103	GR	0.000	0.000	0.000	-0.002	0.000	-0.012
	T1	-0.112	0.000	0.755	0.000	0.024	0.000
	P1	0.000	0.000	0.010	0.000	0.001	0.000
	SUM	-0.112	0.000	0.765	-0.002	0.025	-0.012
	RESP	0.000	0.000	0.001	0.000	0.043	0.000
	TOTAL	0.112	0.000	0.765	0.002	0.068	0.012
A104	GR	0.000	0.000	0.000	0.001	0.000	-0.009
	T1	-0.084	0.000	0.566	0.000	-0.034	0.000
	P1	0.000	0.000	0.007	0.000	0.000	0.000
	SUM	-0.084	0.000	0.574	0.001	-0.035	-0.009
	RESP	0.000	0.000	0.000	0.000	0.011	0.000
	TOTAL	0.084	0.000	0.574	0.001	0.046	0.009
A105	GR	0.000	0.000	0.000	0.000	0.000	-0.006
	T1	0.000	0.000	0.378	0.000	-0.017	0.000
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.382	0.000	-0.017	-0.006
	RESP	0.000	0.000	0.000	0.000	0.003	0.000
	TOTAL	0.000	0.000	0.383	0.000	0.020	0.006
A106	GR	0.000	0.000	0.000	0.000	0.000	-0.003
	T1	0.000	0.000	0.189	0.000	0.004	0.000
	P1	0.000	0.000	0.002	0.000	0.000	0.000
	SUM	0.000	0.000	0.191	0.000	0.004	-0.003
	RESP	0.000	0.000	0.000	0.000	0.001	0.000
	TOTAL	0.000	0.000	0.191	0.000	0.005	0.003
A107	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A108	GR	0.000	0.000	0.000	0.001	0.000	-0.002
	T1	0.000	0.000	-0.002	0.000	0.000	0.012
	P1	0.000	0.000	-0.002	0.000	0.000	0.000
	SUM	0.000	0.000	-0.004	0.003	0.000	0.010
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.191	0.003	0.000	0.010

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A109	GR	0.000	0.000	-0.003	0.000
	T1	0.000	0.000	-0.009	0.001
	P1	0.000	-0.377	0.000	0.025
	SUM	0.000	-0.385	0.000	0.000
	RESP	0.000	-0.382	0.000	0.000
TOTAL		0.000	0.000	0.012	0.002
A110	GR	0.000	0.000	0.010	0.000
	T1	0.000	0.000	0.035	-0.005
	P1	0.000	-0.566	0.000	0.037
	SUM	0.000	-0.007	0.000	0.000
	RESP	0.000	-0.000	0.045	-0.005
TOTAL		0.000	0.000	0.062	0.001
A111	GR	0.000	0.002	-0.002	0.000
	T1	0.003	0.026	0.000	-0.003
	P1	0.000	-0.611	0.045	0.000
	SUM	0.003	-0.008	0.001	0.000
	RESP	0.003	-0.618	0.043	0.000
TOTAL		0.004	0.028	0.043	0.003
A112	GR	0.000	0.000	-0.009	0.000
	T1	0.000	0.042	0.033	0.012
	P1	0.000	-0.008	0.000	0.000
	SUM	0.000	-0.008	0.000	0.000
	RESP	0.000	-0.008	0.025	0.012
TOTAL		0.000	0.042	0.025	0.018
I112	GR	0.000	0.000	0.004	0.001
	T1	-0.064	0.053	-0.005	-0.002
	P1	0.000	-0.010	0.000	0.000
	SUM	0.000	-0.014	0.000	0.001
	RESP	0.000	-0.010	-0.001	0.001
TOTAL		0.064	0.053	0.001	0.032
I113	GR	0.000	0.000	-0.005	0.001
	T1	-0.077	0.064	-0.014	0.076
	P1	0.000	-0.013	0.000	0.001
	SUM	-0.077	0.065	-0.020	0.078
	RESP	-0.077	0.065	-0.020	0.078
TOTAL		0.077	0.065	0.021	0.196

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A113	GR	0.001	0.000	0.019	0.001
	T1	-0.183	0.000	-0.035	-0.170
	P1	-0.002	0.000	0.000	-0.002
	SUM	-0.184	0.000	-0.017	-0.172
	RESP	0.000	0.000	0.003	0.255
TOTAL		0.721	0.000	0.020	0.426
A114W	GR	0.001	0.002	0.018	0.001
	T1	-0.163	-0.003	-0.034	-0.207
	P1	-0.002	0.000	0.000	-0.002
	SUM	-0.164	-0.001	-0.017	-0.209
	RESP	0.763	0.000	0.003	0.248
TOTAL		0.728	0.002	0.020	0.457
A114W	GR	0.001	0.007	0.017	0.000
	T1	0.002	-0.009	-0.029	-0.422
	P1	0.000	0.000	0.000	-0.005
	SUM	0.003	-0.002	-0.013	-0.427
	RESP	0.675	0.001	0.004	0.200
TOTAL		0.678	0.003	0.017	0.627
A114F	GR	0.001	0.002	0.001	0.013
	T1	0.139	-0.002	-0.025	-0.628
	P1	0.002	0.000	0.000	-0.008
	SUM	0.142	0.000	-0.012	-0.636
	RESP	0.712	0.000	0.004	0.139
TOTAL		0.894	0.001	0.016	0.775
A115	GR	0.001	0.000	0.012	0.000
	T1	0.146	0.000	-0.024	-0.660
	P1	0.002	0.000	0.000	-0.009
	SUM	0.150	0.000	-0.012	-0.669
	RESP	0.712	0.000	0.004	0.127
TOTAL		0.892	0.000	0.016	0.796
A116	GR	0.001	0.000	-0.018	0.000
	T1	0.307	0.000	-0.004	-0.614
	P1	0.035	0.000	0.000	-0.008
	SUM	0.342	0.000	-0.022	-0.622
	RESP	0.712	0.000	0.001	0.124
TOTAL		1.095	0.000	0.022	0.746

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A117N	GR	0.001	0.003	0.000	-0.019	0.000	0.026
	T1	0.344	0.000	1.259	-0.003	-0.578	-0.002
	P1	0.005	0.000	0.017	0.000	-0.008	0.000
	SUM	0.350	0.003	1.276	-0.022	-0.585	-0.024
	RESP	0.713	0.003	2.551	-0.044	-1.170	-0.048
	TOTAL	1.062	0.003	1.389	0.022	0.718	0.024
A117M	GR	0.001	0.010	0.000	-0.024	0.000	0.025
	T1	0.469	-0.001	1.479	0.000	-0.352	0.000
	P1	0.007	0.000	0.019	0.000	-0.004	0.000
	SUM	0.476	0.010	1.498	-0.023	-0.357	0.024
	RESP	0.950	0.010	2.996	-0.046	-0.713	0.048
	TOTAL	1.156	0.010	1.536	0.023	0.529	0.025
A117F	GR	0.001	0.003	0.000	-0.028	0.000	0.025
	T1	0.596	0.000	1.498	0.002	-0.118	0.000
	P1	0.008	0.000	0.019	0.000	-0.001	0.000
	SUM	0.605	0.003	1.517	-0.026	-0.119	0.025
	RESP	1.209	0.003	3.035	-0.050	-0.234	0.050
	TOTAL	1.190	0.003	1.518	0.026	0.325	0.025
A118	GR	0.001	0.000	0.000	-0.029	0.000	0.025
	T1	0.606	0.000	1.490	0.001	-0.078	0.000
	P1	0.008	0.000	0.019	0.000	-0.001	0.000
	SUM	0.615	0.000	1.509	-0.028	-0.078	0.025
	RESP	1.230	0.000	3.028	-0.056	-0.156	0.056
	TOTAL	1.179	0.000	1.510	0.028	0.287	0.025
A119	GR	0.000	0.000	0.000	0.008	0.000	0.021
	T1	0.078	0.000	1.278	0.000	0.168	0.000
	P1	0.000	0.000	0.017	0.000	0.002	0.000
	SUM	0.078	0.000	1.295	0.007	0.170	0.022
	RESP	0.156	0.000	2.590	0.014	0.340	0.044
	TOTAL	0.078	0.000	1.295	0.007	0.272	0.022
A120	GR	0.000	0.000	0.000	-0.002	0.000	0.018
	T1	0.065	0.000	1.065	0.000	-0.028	0.000
	P1	0.000	0.000	0.014	0.000	-0.001	0.000
	SUM	0.065	0.000	1.079	-0.002	-0.029	0.018
	RESP	0.065	0.000	2.158	0.000	-0.027	0.000
	TOTAL	0.065	0.000	1.079	0.002	0.036	0.018

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A121	GR	0.000	0.000	0.000	0.001	0.000	0.014
	T1	0.000	0.000	0.852	0.000	0.025	0.000
	P1	0.000	0.000	0.011	0.000	0.000	0.000
	SUM	0.000	0.000	0.863	0.001	0.026	0.014
	RESP	0.000	0.000	1.726	0.000	0.007	0.000
	TOTAL	0.000	0.000	0.864	0.001	0.033	0.014
A122	GR	0.000	0.000	0.000	0.000	0.000	0.011
	T1	0.000	0.000	0.639	0.000	-0.007	0.000
	P1	0.000	0.000	0.008	0.000	0.000	0.000
	SUM	0.000	0.000	0.648	0.000	-0.007	0.011
	RESP	0.000	0.000	1.296	0.000	0.002	0.000
	TOTAL	0.000	0.000	0.648	0.000	0.009	0.011
A123	GR	0.000	0.000	0.000	0.000	0.000	0.007
	T1	0.000	0.000	0.426	0.000	0.002	0.000
	P1	0.000	0.000	0.006	0.000	0.000	0.000
	SUM	0.000	0.000	0.432	0.000	0.002	0.007
	RESP	0.000	0.000	0.864	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.432	0.000	0.002	0.007
A124	GR	0.000	0.000	0.000	0.000	0.000	0.004
	T1	0.000	0.000	0.213	0.000	0.000	0.000
	P1	0.000	0.000	0.003	0.000	0.000	0.000
	SUM	0.000	0.000	0.216	0.000	0.000	0.004
	RESP	0.000	0.000	0.432	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.216	0.000	0.001	0.004
A125	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A126	GR	0.000	0.000	0.000	0.000	0.000	0.003
	T1	0.000	0.000	-0.213	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	-0.216	0.000	0.000	0.007
	RESP	0.000	0.000	0.432	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.216	0.000	0.000	0.007

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A127	GR	0.000	0.000	0.000	0.000	0.000	0.005
	T1	0.000	0.000	-0.426	0.000	-0.001	0.009
	P1	0.000	0.000	-0.006	0.000	0.000	0.000
	SUM	0.000	0.000	-0.431	0.000	-0.001	0.015
	TOTAL	0.000	0.000	0.000	0.000	0.001	0.000
A128	GR	0.000	0.000	0.000	0.000	0.000	0.008
	T1	0.000	0.000	-0.638	0.000	0.002	0.014
	P1	0.000	0.000	-0.008	0.000	0.000	0.000
	SUM	0.000	0.000	-0.647	0.000	0.002	0.022
	TOTAL	0.000	0.000	0.000	0.000	0.002	0.000
A129	GR	0.000	0.000	0.000	0.000	0.000	0.011
	T1	0.000	0.000	-0.851	0.000	-0.009	0.019
	P1	0.000	0.000	-0.011	0.000	0.000	0.000
	SUM	0.000	0.000	-0.862	0.000	-0.009	0.030
	TOTAL	0.000	0.000	0.000	0.000	0.009	0.000
A130	GR	0.000	0.000	0.000	0.000	0.000	0.018
	T1	0.000	0.000	-1.064	0.001	0.033	0.024
	P1	0.000	0.000	-0.014	0.000	0.001	0.000
	SUM	0.000	0.000	-1.078	0.002	0.034	0.037
	TOTAL	0.000	0.000	0.000	0.000	0.033	0.000
A131	GR	0.000	0.000	0.000	0.002	0.006	0.037
	T1	0.068	0.000	-1.277	-0.003	-0.195	0.028
	P1	0.000	0.000	-0.017	0.000	-0.003	0.000
	SUM	0.068	0.000	-1.293	-0.008	-0.197	0.044
	TOTAL	0.000	0.000	0.000	0.000	0.123	0.000
A132	GR	0.000	0.000	0.000	0.003	0.021	0.045
	T1	0.502	0.000	-1.488	0.010	0.224	0.033
	P1	0.007	0.000	-0.019	0.000	0.003	0.000
	SUM	0.509	0.000	-1.508	0.033	0.226	0.052
	TOTAL	0.661	0.000	0.000	0.000	0.231	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A133N	GR	0.000	0.002	0.000	0.021	0.000	0.018
	T1	0.476	0.001	-1.496	0.011	0.276	0.033
	P1	0.006	0.000	-0.019	0.000	0.003	0.000
	SUM	0.482	0.003	-1.515	0.032	0.279	0.052
	TOTAL	1.167	0.003	0.000	0.000	0.223	0.000
A133M	GR	0.000	0.007	0.000	0.014	0.000	0.017
	T1	0.255	0.004	-1.435	0.028	0.576	0.031
	P1	0.003	0.000	-0.019	0.000	0.007	0.000
	SUM	0.259	0.011	-1.454	0.043	0.584	0.049
	TOTAL	1.043	0.012	1.493	0.043	0.758	0.049
A133F	GR	0.000	0.002	0.001	0.010	0.000	0.016
	T1	0.080	0.001	-1.091	0.052	0.848	0.022
	P1	0.001	0.000	-0.014	0.001	0.011	0.000
	SUM	0.080	0.003	-1.105	0.062	0.859	0.038
	TOTAL	0.816	0.000	0.111	0.000	0.118	0.000
A134	GR	-0.001	0.000	0.001	0.009	0.000	0.016
	T1	0.072	0.000	-0.998	0.056	0.890	0.018
	P1	0.001	0.000	-0.013	0.001	0.012	0.000
	SUM	0.072	0.000	-1.010	0.066	0.902	0.035
	TOTAL	0.816	0.000	0.123	0.000	0.106	0.000
1134	GR	-0.001	0.000	0.001	-0.009	0.000	-0.016
	T1	-0.074	0.000	0.998	0.056	0.890	0.018
	P1	-0.001	0.000	0.013	0.001	0.012	0.000
	SUM	-0.075	0.000	1.012	0.068	0.902	0.002
	TOTAL	0.892	0.000	1.135	0.000	0.106	0.002
A135N	GR	0.000	0.002	0.000	-0.010	0.000	-0.016
	T1	-0.082	-0.001	1.091	0.052	0.848	0.022
	P1	-0.001	0.000	-0.014	0.001	0.011	0.000
	SUM	-0.083	0.000	1.106	0.062	0.859	0.006
	TOTAL	0.816	0.000	0.111	0.000	0.118	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A135M	GR	0.000	0.007	-0.014	0.000
	T1	-0.257	-0.004	0.028	-0.017
	P1	-0.003	0.000	0.576	0.031
	SUM	-0.003	0.000	0.007	0.000
	RESP	0.000	0.000	0.014	0.015
	TOTAL	0.000	0.000	0.014	0.015
A135F	GR	0.000	0.002	-0.021	0.000
	T1	-0.478	-0.001	0.011	-0.019
	P1	-0.006	0.000	0.000	0.033
	SUM	-0.484	0.001	0.009	0.003
	RESP	0.000	0.000	0.000	0.000
	TOTAL	1.169	0.001	0.010	0.015
A136	GR	0.000	0.000	-0.023	0.000
	T1	-0.504	0.000	0.010	-0.018
	P1	-0.007	0.000	0.000	0.033
	SUM	-0.511	0.000	0.009	0.000
	RESP	0.000	0.000	0.013	0.015
	TOTAL	1.171	0.000	0.013	0.015
A137	GR	0.000	0.000	0.006	0.000
	T1	-0.068	0.000	-0.003	-0.016
	P1	0.000	0.000	0.000	0.028
	SUM	-0.068	0.000	-0.003	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.068	0.000	0.003	0.015
A138	GR	0.000	0.000	-0.002	0.000
	T1	0.000	0.000	0.001	-0.013
	P1	0.000	0.000	0.000	0.033
	SUM	0.000	0.000	0.000	0.024
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A139	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	-0.011
	P1	0.000	0.000	0.000	0.009
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.009
	TOTAL	0.000	0.000	0.000	0.009

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A140	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	-0.008
	P1	0.000	0.000	0.000	0.002
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A141	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	-0.001
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A142	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	-0.003
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A143	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A144	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A145	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	-0.017
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A146	GR	0.000	0.000	0.000	0.012
	T1	0.079	0.000	0.000	-0.018
	P1	0.000	-0.639	0.000	0.000
	SUM	0.079	0.000	0.000	0.000
	RESP	0.079	-0.643	0.000	-0.018
A147	GR	0.000	0.000	0.000	0.012
	T1	0.079	0.000	0.000	-0.018
	P1	0.000	-0.639	0.000	0.000
	SUM	0.079	0.000	0.000	0.000
	RESP	0.079	-0.643	0.000	-0.018
A148	GR	0.000	0.000	0.000	0.016
	T1	0.132	0.000	0.002	0.019
	P1	0.000	-0.056	0.000	0.042
	SUM	0.132	0.000	0.002	0.061
	RESP	0.132	-0.056	0.002	0.061
A149	GR	0.000	0.000	0.000	0.023
	T1	0.158	0.000	0.000	-0.202
	P1	0.000	-0.017	0.000	-0.003
	SUM	0.158	0.000	0.000	-0.205
	RESP	0.158	-0.017	0.000	-0.205
A150	GR	0.000	0.000	0.030	0.027
	T1	0.955	0.000	0.000	-0.093
	P1	0.012	-0.019	0.000	-0.002
	SUM	0.967	-0.019	0.030	-0.095
	RESP	0.967	-0.019	0.030	-0.095
A151N	GR	0.000	0.003	0.028	0.000
	T1	0.963	0.000	0.000	-0.060
	P1	0.013	-0.019	0.000	-0.001
	SUM	0.976	0.003	0.028	-0.061
	RESP	0.976	0.003	0.028	-0.061

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A151M	GR	0.000	0.011	0.000	0.027
	T1	0.933	0.000	0.000	-1.521
	P1	0.012	0.000	0.000	0.136
	SUM	0.945	0.011	0.000	0.002
	RESP	0.945	0.011	0.000	0.002
A151F	GR	0.000	0.003	0.000	0.027
	T1	0.855	0.000	0.000	-1.417
	P1	0.011	0.000	0.000	0.005
	SUM	0.866	0.003	0.000	0.025
	RESP	0.866	0.003	0.000	0.025
A152	GR	0.000	0.000	0.025	0.000
	T1	0.847	0.000	0.000	-1.382
	P1	0.011	0.000	0.000	0.005
	SUM	0.858	0.000	0.025	0.005
	RESP	0.858	0.000	0.025	0.005
A153	GR	0.000	0.000	0.015	0.000
	T1	0.647	0.000	0.000	-1.266
	P1	0.008	0.000	0.000	0.004
	SUM	0.655	0.000	0.015	0.004
	RESP	0.655	0.000	0.015	0.004
A154	GR	0.000	-0.007	0.000	0.003
	T1	0.556	0.000	0.000	-1.013
	P1	0.007	0.000	0.000	-0.001
	SUM	0.563	-0.007	0.000	0.012
	RESP	0.563	-0.007	0.000	0.012
A155	GR	0.000	0.000	0.005	0.000
	T1	0.444	0.000	0.000	-0.001
	P1	0.006	0.000	0.000	0.000
	SUM	0.452	0.000	0.005	-0.002
	RESP	0.452	0.000	0.005	-0.002

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A156	GR	0.000	0.000	0.000	-0.005	0.000	-0.009
	T1	0.248	0.000	0.120	0.000	-0.012	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.251	0.000	0.121	-0.005	-0.013	-0.009
	RESP	0.231	0.000	0.109	-0.005	-0.013	-0.009
	TOTAL	0.294	0.000	0.164	0.003	0.131	0.009
A157N	GR	0.000	0.000	0.000	-0.006	0.000	-0.006
	T1	0.240	0.000	0.118	0.000	-0.025	0.000
	P1	0.003	0.000	0.001	0.000	0.000	0.000
	SUM	0.243	0.001	0.119	-0.006	-0.025	-0.006
	RESP	0.243	0.000	0.119	-0.006	-0.025	-0.006
	TOTAL	0.287	0.001	0.164	0.006	0.135	0.006
A157M	GR	0.000	0.000	0.000	-0.005	0.000	0.002
	T1	0.219	0.000	0.073	0.000	-0.099	0.000
	P1	0.003	0.000	0.001	0.000	-0.001	0.000
	SUM	0.222	0.000	0.074	-0.005	-0.100	0.002
	RESP	0.216	0.000	0.057	-0.005	-0.100	0.002
	TOTAL	0.266	0.000	0.130	0.000	0.182	0.000
A157F	GR	0.000	-0.001	0.000	0.001	0.000	0.002
	T1	0.269	0.000	0.012	0.000	-0.152	0.000
	P1	0.003	0.000	0.000	0.000	-0.002	0.000
	SUM	0.272	-0.001	0.012	0.001	-0.155	0.002
	RESP	0.272	-0.001	0.012	0.001	-0.155	0.002
	TOTAL	0.591	0.001	0.165	0.001	0.247	0.000
A159	GR	0.000	0.000	0.000	0.002	0.000	0.002
	T1	0.349	0.000	-0.025	0.000	-0.156	0.000
	P1	0.005	0.000	-0.001	0.000	-0.002	0.000
	SUM	0.354	0.000	-0.026	0.002	-0.159	0.002
	RESP	0.354	0.000	-0.026	0.002	-0.159	0.002
	TOTAL	0.723	0.000	0.130	0.000	0.284	0.000
A160N	GR	0.000	0.000	0.000	0.002	0.000	0.002
	T1	0.365	0.000	-0.033	0.000	-0.151	0.000
	P1	0.005	0.000	-0.001	0.000	-0.002	0.000
	SUM	0.370	0.000	-0.034	0.002	-0.153	0.002
	RESP	0.370	0.000	-0.034	0.002	-0.153	0.002
	TOTAL	0.736	0.000	0.135	0.000	0.286	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A160M	GR	0.000	0.001	0.000	0.003	0.000	0.002
	T1	0.414	0.000	-0.093	0.000	-0.096	0.000
	P1	0.005	0.000	-0.002	0.000	-0.001	0.000
	SUM	0.419	0.001	-0.095	0.003	-0.097	0.002
	RESP	0.419	0.001	-0.095	0.003	-0.097	0.002
	TOTAL	0.868	0.000	0.520	0.000	0.231	0.000
A160F	GR	0.000	0.000	0.000	0.004	0.000	0.004
	T1	0.392	0.000	-0.136	0.000	-0.136	0.000
	P1	0.005	0.000	-0.002	0.000	0.000	0.000
	SUM	0.397	0.000	-0.138	0.004	-0.019	0.004
	RESP	0.397	0.000	-0.138	0.004	-0.019	0.004
	TOTAL	0.798	0.000	0.432	0.000	0.210	0.004
A161	GR	0.000	0.000	0.000	0.004	0.000	0.006
	T1	0.384	0.000	-0.137	0.000	-0.137	0.000
	P1	0.005	0.000	-0.002	0.000	0.000	0.000
	SUM	0.389	0.000	-0.139	0.004	-0.006	0.006
	RESP	0.389	0.000	-0.139	0.004	-0.006	0.006
	TOTAL	0.801	0.000	0.413	0.000	0.209	0.006
A162	GR	0.000	0.000	0.000	0.004	0.000	0.006
	T1	0.390	0.000	-0.137	0.004	-0.137	0.000
	P1	0.005	0.000	-0.002	0.000	0.000	0.000
	SUM	0.395	0.000	-0.139	0.004	-0.006	0.006
	RESP	0.395	0.000	-0.139	0.004	-0.006	0.006
	TOTAL	0.806	0.000	0.413	0.000	0.209	0.006
A163	GR	0.000	0.000	0.000	0.002	0.000	0.005
	T1	0.216	0.000	0.000	0.000	-0.092	0.000
	P1	0.003	0.000	0.000	0.000	0.001	0.000
	SUM	0.219	0.000	0.000	0.002	-0.091	0.000
	RESP	0.219	0.000	0.000	0.002	-0.091	0.000
	TOTAL	0.438	0.000	0.000	0.000	0.103	0.000
A163	GR	0.000	0.000	0.000	0.002	0.000	0.005
	T1	0.219	0.000	0.000	0.000	-0.092	0.000
	P1	0.003	0.000	0.000	0.000	0.001	0.000
	SUM	0.222	0.000	0.000	0.002	-0.091	0.000
	RESP	0.222	0.000	0.000	0.002	-0.091	0.000
	TOTAL	0.438	0.000	0.000	0.000	0.103	0.000
A164	GR	0.000	0.000	0.000	-0.002	0.000	-0.012
	T1	-0.215	0.000	0.000	0.000	-0.092	0.000
	P1	-0.003	0.000	0.000	0.000	-0.002	0.000
	SUM	-0.218	0.000	0.000	-0.002	-0.142	-0.012
	RESP	-0.218	0.000	0.000	-0.002	-0.142	-0.012
	TOTAL	-0.438	0.000	0.000	-0.002	-0.284	-0.024

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A165	GR	0.000	0.000	-0.003	0.000
	T1	-0.345	0.000	0.000	-0.048
	P1	-0.004	0.000	0.000	-0.001
	SUM	-0.349	0.000	-0.003	-0.049
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.349	0.000	0.003	0.049
A166H	GR	0.000	-0.001	-0.003	0.000
	T1	-0.352	0.000	0.000	-0.016
	P1	-0.005	0.000	0.000	0.000
	SUM	-0.357	-0.001	-0.003	-0.016
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.357	0.001	0.003	0.016
A166H	GR	0.000	-0.007	-0.005	0.000
	T1	-0.365	0.000	0.000	-0.245
	P1	-0.005	0.000	0.000	-0.003
	SUM	-0.370	-0.007	-0.005	-0.248
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.370	0.007	0.005	0.248
A166F	GR	0.000	-0.006	-0.010	0.000
	T1	-0.245	0.000	0.000	-0.158
	P1	-0.003	0.000	0.000	-0.002
	SUM	-0.248	-0.006	-0.010	-0.161
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.248	0.006	0.010	0.161
A168	GR	0.000	0.000	-0.008	0.000
	T1	-0.046	0.000	0.000	-0.119
	P1	-0.001	0.000	0.000	-0.002
	SUM	-0.047	0.000	-0.008	-0.120
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.047	0.000	0.008	0.120
A169H	GR	0.000	0.001	-0.007	0.000
	T1	-0.009	0.000	0.000	-0.111
	P1	0.000	0.000	0.000	-0.002
	SUM	-0.009	0.001	-0.007	-0.112
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.009	0.001	0.007	0.112

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A169H	GR	0.000	0.002	-0.004	0.000
	T1	0.127	0.000	0.000	-0.228
	P1	0.002	0.000	0.000	0.003
	SUM	0.129	0.002	-0.004	-0.231
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.129	0.002	0.004	0.231
A169F	GR	0.000	0.000	-0.004	0.000
	T1	0.126	0.000	0.000	-0.059
	P1	0.002	0.000	0.000	0.001
	SUM	0.127	0.000	-0.004	-0.060
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.127	0.000	0.004	0.060
A170	GR	0.000	0.000	-0.003	0.000
	T1	0.118	0.000	0.000	-0.033
	P1	0.002	0.000	0.000	0.000
	SUM	0.119	0.000	-0.003	-0.033
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.119	0.000	0.003	0.033
A171	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000

*** Segment A end ***

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Dim	Force	Deform
A01 A01 Stiff	1 Guide :RIGID	GR	down left	514 0.000	0.000 0.000	X Y Z	-514 0.000 0.000	0.000 0.000 0.000
	T1		down left	1067 0.000	0.000 0.000	X Y Z	-0.108 0.000 0.000	0.000 0.000 0.000
	P1		down left	14 0.000	0.000 0.000	X Y Z	-0.001 0.000 0.000	0.000 0.000 0.000
	SUM		down left	514 1081	0.000 0.000	X Y Z	-0.110 -0.110 0.000	0.000 0.000 0.000
	RESP		down left	137 0.000	0.000 0.000	X Y Z	0.000 0.000 0.000	0.000 0.000 0.000
	TOTAL		down left	514 1218	0.000 0.000	X Y Z	0.110 0.000 0.000	0.000 0.000 0.000
A05 A05 Stiff	1 Guide :RIGID	GR	down left	399 0	0.000 0.000	X Y Z	0 -399 0	0.000 0.000 0.000
	T1		down left	603 0.000	0.000 0.000	X Y Z	-427 0.115 0.115	0.000 0.000 0.000
	P1		down left	8 0.000	0.000 0.000	X Y Z	-6 0.002 0.002	0.000 0.000 0.000
	SUM		down left	399 611	0.000 0.000	X Y Z	-432 0.117 0.117	0.000 0.000 0.000
	RESP		down left	14 0.000	0.000 0.000	X Y Z	10 0.060 0.060	0.000 0.000 0.000
	TOTAL		down left	399 626	0.000 0.000	X Y Z	443 0.177 0.177	0.000 0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	LOCAL			GLOBAL		
						Dim	Force	Deform	Dim	Force	Deform
A06 A06 Stiff	1 Guide :RIGID	GR	down right	167 0	0.000 0.000	down right	167 0	0.000 0.000	X Y Z	0 -167 0	0.000 0.000 0.000
	T1		down right	753 0.000	0.000 0.000	down right	753 0.000	0.000 0.000	X Y Z	533 -533 -0.039	-0.039 0.000 0.000
	P1		down right	10 0.000	0.000 0.000	down right	10 0.000	0.000 0.000	X Y Z	7 0.000 -7	0.000 0.000 0.000
	SUM		down right	167 763	0.000 0.000	down right	167 763	0.000 0.000	X Y Z	540 -167 -540	-0.040 0.000 -0.040
	RESP		down left	75 0.000	0.000 0.000	down left	75 0.000	0.000 0.000	X Y Z	53 0.060 53	0.060 0.000 0.000
	TOTAL		down left	167 839	0.000 0.000	down left	167 839	0.000 0.000	X Y Z	593 -167 593	0.099 0.000 0.099
A07 A07 Stiff	1 Inclined :RIGID	GR	back	143 0.000	0.000 0.000	back	143 0.000	0.000 0.000	X Y Z	-143 0.000 0.000	0.000 0.000 0.000
	T1		back		0.000 0.000	back		0.000 0.000	X Y Z	0.264 0.000 -0.571	0.264 0.000 -0.571
	P1		back		0.000 0.000	back		0.000 0.000	X Y Z	0.004 0.000 -0.008	0.004 0.000 -0.008
	SUM		back	143 0.000	0.000 0.000	back	143 0.000	0.000 0.000	X Y Z	-143 0.267 0.000	-0.579 0.267 0.000
	RESP		back		0.000 0.000	back		0.000 0.000	X Y Z	0.068 0.000 0.188	0.068 0.000 0.188
	TOTAL		back	143 0.000	0.000 0.000	back	143 0.000	0.000 0.000	X Y Z	143 0.000 0.766	0.335 0.000 0.766
A10	GR		back	137 0.000	0.000 0.000	back	137 0.000	0.000 0.000	X	0.000	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	Local Dim Force	Deform	GLOBAL Dim Force	Deform
A09 1 Stiff	Inclined :RIGID				Y	-137 0.000
T1		back	0.000		X	0.465
					Y	0.000
					Z	0.112
P1		back	0.000		X	0.006
					Y	0.000
					Z	0.001
SUM		back	137 0.000		X	0.472
					Y	0.000
					Z	0.113
RESP		back	0.000		X	0.095
					Y	0.000
					Z	0.183
TOTAL		back	137 0.000		X	0.567
					Y	0.000
					Z	0.296
GR		back	112 0.000		X	0.000
					Y	-112
					Z	0.000
T1		back	0.000		X	0.508
					Y	0.000
					Z	0.693
P1		back	0.000		X	0.007
					Y	0.000
					Z	0.009
SUM		back	112 0.000		X	0.514
					Y	-112
					Z	0.702
RESP		back	0.000		X	0.089
					Y	0.000
					Z	0.089
TOTAL		back	112 0.000		X	0.603
					Y	112
					Z	0.792
GR		down left	176 0.000		X	0 0.000
			0 0.000		Y	-176 0.000

A13 1 Guide
A13 1 Stiff

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	Local Dim Force	Deform	GLOBAL Dim Force	Deform
A14 1 Stiff	:RIGID				Z	0 0.000
T1		down left	576 0.000		X	-407 0.519
					Y	407 0.000
					Z	407 0.519
P1		down left	8 0.000		X	-5 0.007
					Y	5 0.000
					Z	5 0.007
SUM		down left	176 0.000		X	-413 0.526
					Y	-176 0.000
					Z	413 0.526
RESP		down left	84 0.000		X	59 0.000
					Y	59 0.000
					Z	59 0.000
TOTAL		down left	176 0.000		X	472 0.526
					Y	176 0.000
					Z	472 0.526
GR		down left	219 0.000		X	0 0.000
			0 0.000		Y	-219 0.000
					Z	0 0.000
A14 1 Stiff	:RIGID				X	86 0.390
					Y	0.000
					Z	-86 0.390
T1		down right	121 0.000		X	1 0.005
					Y	-1 0.005
					Z	-1 0.005
P1		down right	2 0.000		X	1 0.005
					Y	-1 0.005
					Z	-1 0.005
SUM		down right	219 0.000		X	87 0.395
					Y	-219 0.000
					Z	-87 0.395
RESP		down left	45 0.000		X	32 0.000
					Y	0.000
					Z	32 0.000
TOTAL		down left	219 0.000		X	119 0.395
					Y	219 0.000
					Z	119 0.395
GR		down left	210 0.000		X	0 0.000
			0 0.000		Y	-210 0.000
					Z	0 0.000

A15 1 Guide
A15 1 Stiff

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	GLOBAL Force	Deform
T1			down left	32 0.000	23 0.260
P1			down left	0 0.000	0 0.003
SUM			down left	210 33	0.000 0.003
RESP			down left	12 0.000	9 0.000
TOTAL			down left	210 45	0.000 0.263
GR	A16 1 Guide Stiff		down left	213 0	0.000 0.000
T1			down right	9 0.000	7 0.130
P1			down right	0 0.000	0 0.002
SUM			down right	213 9	0.000 0.132
RESP			down left	3 0.000	2 0.000
TOTAL			down left	213 13	0.000 0.132
GR	A18 1 Guide Stiff		down right	213 0	0.000 0.000
T1			up	0 0.000	5 -0.130

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	GLOBAL Force	Deform
P1			up right	0 0.000	0 0.002
SUM			down right	212 8	0.000 0.132
RESP			down left	0 4	0.000 0.000
TOTAL			down left	213 12	0.000 0.132
GR	A19 1 Guide Stiff		down left	210 1	0.000 0.000
T1			down left	25 0.000	18 0.261
P1			down left	0 0.000	0 0.003
SUM			down left	210 27	0.000 0.264
RESP			down left	0 15	0.000 0.001
TOTAL			down left	210 42	0.000 0.264
GR	A20 1 Guide Stiff		down right	220 6	0.000 0.000
T1			up right	2 93	0.000 0.391

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 50

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dimn	Force	Deform
P1		up	right	0	0.000	Z	-65	-0.391
				1	0.000	X	1	-0.005
				1	0.000	Y	0	0.000
				-1	-0.005	Z	-1	-0.005
SUM		down	right	219	0.000	X	70	-0.396
				99	0.000	Y	-219	0.000
						Z	-70	-0.396
RESP		down	left	1	0.000	X	41	0.001
				58	0.000	Y	1	0.000
						Z	41	0.001
TOTAL		down	left	220	0.000	X	111	0.396
				157	0.000	Y	220	0.000
						Z	111	0.396
GR		down	left	169	0.000	X	-19	0.000
				27	0.000	Y	-169	0.000
						Z	19	0.000
T1		down	left	11	0.000	X	-278	-0.521
				393	0.000	Y	-11	0.000
						Z	278	-0.521
P1		down	left	0	0.000	X	-4	-0.007
				5	0.000	Y	0	0.000
						Z	4	-0.007
SUM		down	left	179	0.000	X	-301	-0.528
				425	0.000	Y	-179	0.000
						Z	301	-0.528
RESP		down	left	9	0.000	X	118	0.001
				167	0.000	Y	9	0.000
						Z	118	0.001
TOTAL		down	left	188	0.000	X	419	0.529
				592	0.000	Y	188	0.000
						Z	419	0.529
GR		back		135	0.000	X	-135	-0.004
						Y	0.000	0.000
						Z	0.004	0.004
T1		forw		32	0.000	X	-32	-0.693
						Y	0.000	0.000
						Z	-0.512	-0.512

A22
A22 1
Inclined
Stiff :RIGID

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 51

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dimn	Force	Deform
P1			forw	0	0.000	X	0	-0.009
						Y	0	0.000
						Z	-0.007	-0.007
SUM			back	103	0.000	X	-103	-0.706
						Y	-103	0.000
						Z	-0.514	-0.514
RESP			back	17	0.000	X	17	0.102
						Y	0.000	0.000
						Z	0.102	0.102
TOTAL			back	120	0.000	X	120	0.808
						Y	120	0.000
						Z	0.616	0.616
GR			back	122	0.000	X	-122	0.032
						Y	0.000	0.000
						Z	0.018	0.018
T1			back	134	0.000	X	-134	-0.254
						Y	-134	0.000
						Z	-0.435	-0.435
P1			back	2	0.000	X	-2	-0.003
						Y	0.000	0.000
						Z	-0.006	-0.006
SUM			back	258	0.000	X	-258	-0.225
						Y	-258	0.000
						Z	-0.423	-0.423
RESP			back	12	0.000	X	12	0.262
						Y	12	0.000
						Z	0.130	0.130
TOTAL			back	269	0.000	X	269	0.487
						Y	269	0.000
						Z	0.553	0.553
GR			back	125	0.000	X	-125	0.057
						Y	-125	0.000
						Z	0.025	0.025
T1			forw	56	0.000	X	56	0.045
						Y	56	0.000
						Z	-0.428	-0.428
P1			forw	1	0.000	X	1	0.001

A27
A27 1
Inclined
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	LOCAL Dirn	GLOBAL Force	GLOBAL Deform
					Y	Z
	SUM	back	68	0.000	X	-0.006
					X	0.103
	RESP	back	12	0.000	Y	-68
					Z	-0.409
	TOTAL	back	80	0.000	X	0.315
					Y	0.000
					Z	0.142
	GR	down	203	0.000	X	0.418
		right	29	0.000	Y	0.552
	T1	down	35	0.000	X	-0.041
		right	455	0.000	Y	-201
					Z	-37
	P1	down	0	0.000	X	-0.004
		right	6	0.000	Y	-0.001
					Z	-0.004
	SUM	down	238	0.000	X	-0.291
		right	491	0.000	Y	-35
					Z	-325
	RESP	down	18	0.000	X	0.185
		left	186	0.000	Y	0.030
	TOTAL	down	256	0.000	X	0.439
		left	677	0.000	Y	0.071
					Z	0.439
	GR	down	235	0.000	X	-22
		left	5	0.000	Y	-234
					Z	-16
	T1	up	39	0.000	X	-194
		left	279	0.000	Y	39
					Z	200
	P1	up	1	0.000	X	-3
		left	4	0.000	Y	-0.006
					Z	1

A29
A29.1
Stiff

Guide
:RIGID

GR

T1

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	LOCAL Dirn	GLOBAL Force	GLOBAL Deform
					Z	
	SUM	down	196	0.000	X	-219
		left	287	0.000	Y	-194
	RESP	down	16	0.000	X	75
		left	105	0.000	Y	75
	TOTAL	down	212	0.000	X	293
		left	392	0.000	Y	210
	GR	down	197	0.000	X	-26
		left	14	0.000	Y	-106
	T1	down	65	0.000	X	373
		right	535	0.000	Y	-65
	P1	down	1	0.000	X	-383
		right	7	0.000	Y	-0.007
	SUM	down	263	0.000	X	-261
		right	527	0.000	Y	-394
	RESP	down	21	0.000	X	104
		left	146	0.000	Y	21
	TOTAL	down	284	0.000	X	456
		left	673	0.000	Y	282
	GR	back	139	0.000	X	-139
		forw	61	0.000	Y	61
	T1	forw	1	0.000	X	-0.006
					Y	1

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 54

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dim Force	Deform	GLOBAL Dim Force	Deform
		SUM	back	77 0.000	X Y Z	-0.424 -77 -0.864
		RESP	back	22 0.000	X Y Z	0.290 22 0.242
		TOTAL	back	99 0.000	X Y Z	0.715 99 1.106
A33 A33 1 A33 1	Inclined :RIGID	GR	back	86 0.000	X Y Z	0.029 86 0.030
		T1	back	5 0.000	X Y Z	-0.409 -5 -0.408
		P1	back	0 0.000	X Y Z	-0.005 0 -0.005
		SUM	back	91 0.000	X Y Z	-0.385 -91 -0.384
		RESP	back	21 0.000	X Y Z	0.302 21 0.298
		TOTAL	back	112 0.000	X Y Z	0.686 112 0.682
A34 A34 1 A34 1	Inclined :RIGID	GR	back	89 0.000	X Y Z	0.011 -89 0.012
		T1	forw	77 0.000	X Y Z	0.055 77 0.152
		P1	forw	1 0.000	X Y Z	0.001 1 0.002
		SUM	back	11 0.000	X	0.067

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 55

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dim Force	Deform	GLOBAL Dim Force	Deform
		RESP	back	25 0.000	X Y Z	0.265 25 0.325
		TOTAL	back	36 0.000	X Y Z	0.332 36 0.491
A36 A36 1 A36 1	Inclined :RIGID	GR	back	140 0.000	X Y Z	0.007 -140 -0.007
		T1	back	18 0.000	X Y Z	0.100 18 0.634
		P1	back	0 0.000	X Y Z	0.001 0 0.008
		SUM	back	158 0.000	X Y Z	0.108 -158 0.636
		RESP	back	5 0.000	X Y Z	0.237 5 0.237
		TOTAL	back	164 0.000	X Y Z	0.345 164 0.872
A37 A37 1 A37 1	Guide :RIGID	GR	down right	199 0.000 17 0.000	X Y Z	0.000 -199 0.000
		T1	up left	1 0.000 530 0.000	X Y Z	0.261 -375 0.260
		P1	up left	7 0.000	X Y Z	0.003 -5 0.003
		SUM	down left	199 0.000 521 0.000	X Y	0.264 -368 -199

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L	
						Dirn	Force
		RESP	down left	1 199	0.000 0.000	Z	368
		TOTAL	down left	199 720	0.000 0.000	X Y Z	141 141 0.000
A38 A38 1 Stiff	Guide :RIGID	GR	down left	215 5	0.000 0.000	X Y Z	-4 -215 4
		T1	down right	0 184	0.000 0.000	X Y Z	130 0 -130
		P1	down right	0 2	0.000 0.000	X Y Z	0 0 -2
		SUM	down right	215 182	0.000 0.000	X Y Z	128 -215 -128
		RESP	down left	0 102	0.000 0.000	X Y Z	72 0 72
		TOTAL	down left	215 284	0.000 0.000	X Y Z	201 215 201
A40 A40 1 Stiff	Guide :RIGID	GR	down left	62 0	0.000 0.000	X Y Z	0 -62 0
		T1	down right	0 414	0.000 0.000	X Y Z	293 -293 -129
		P1	down right	7	0.000	X Y Z	5 -5 -0.002
		SUM	down right	62 421	0.000 0.000	X Y Z	298 -298 -131

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	L O C A L		G L O B A L	
						Dirn	Force	Dirn	Force
		RESP	down left	42 0	0.000 0.000	down left	42 0	X Y Z	0 0.000 0.000
		TOTAL	down left	104 421	0.000 0.000	down left	104 421	X Y Z	298 104 298
A41 A41 1 Stiff	Guide :RIGID	GR	down right	465 0	0.000 0.000	down right	465 0	X Y Z	0 -465 0
		T1	down left	934	0.000	down left	934	X Y Z	-660 0.000 0.000
		P1	down left	14	0.000	down left	14	X Y Z	-10 0.003 0.003
		SUM	down left	465 948	0.000 0.000	down left	465 948	X Y Z	-670 -465 670
		RESP	down left	68 0	0.000 0.000	down left	68 0	X Y Z	0 68 0
		TOTAL	down left	532 948	0.000 0.000	down left	532 948	X Y Z	670 532 670
A45 A45 1 Stiff	Guide :RIGID	GR	down left	450	0.000	down left	450	X Y Z	0.000 -450 0.000
		T1	down left	807	0.000	down left	807	X Y Z	-807 0.000 0.801
		P1	down left	12	0.000	down left	12	X Y Z	-12 0.000 0.010
		SUM	down left	450 818	0.000 0.000	down left	450 818	X Y Z	-818 -450 0.811
		RESP	down	56	0.000	down	56	X	0.000

TRAN-SL PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
07/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 58

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
			Left	0.000		Y	56	0.000
		TOTAL	down left	507 818	0.000 0.000	X Y	818 507	0.151 0.000
A46 A46 1 Stiff	Guide :RIGID	GR	down left	129	0.000 0.000	X Y	-129	0.000 0.000
		T1	down right	336	0.000 0.000	X Y	336	-0.112 0.000
		P1	down right	5	0.000 0.000	X Y	5	0.000 0.395
		SUM	down right	129 341	0.000 0.000	X Y	341 -129	-0.112 0.000
		RESP	down left	31	0.000 0.000	X Y	31	0.000 0.603
		TOTAL	down left	160 341	0.000 0.000	X Y	341 160	0.112 0.603
A47 A47 1 Stiff	Guide :RIGID	GR	down left	262	0.000 0.000	X Y	-262	0.000 0.000
		T1	down left	74	0.000 0.000	X Y	-74	-0.073 0.389
		P1	down left	1	0.000 0.000	X Y	-1	0.000 0.005
		SUM	down left	262 75	0.000 0.000	X Y	-75 -262	-0.073 0.394
		RESP	down left	8	0.000 0.000	X Y	8	0.000 0.000

TRAN-SL PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
07/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 59

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
		TOTAL	down left	271 75	0.000 0.000	X Y	75 271	0.073 0.394
A48 A48 1 Stiff	Guide :RIGID	GR	down left	214	0.000 0.000	X Y	-214	0.000 0.000
		T1	down right	1	0.000 0.000	X Y	1	0.000 0.195
		P1	down right	0	0.000 0.000	X Y	0	0.000 0.003
		SUM	down right	214 2	0.000 0.000	X Y	-214	0.000 0.197
		RESP	down left	3	0.000 0.000	X Y	3	0.000 0.000
		TOTAL	down left	217 2	0.000 0.000	X Y	217	0.000 0.197
A50 A50 1 Stiff	Guide :RIGID	GR	down left	225	0.000 0.000	X Y	-225	0.000 0.000
		T1	down right	3	0.000 0.000	X Y	3	0.000 -0.196
		P1	down right	0	0.000 0.000	X Y	0	0.000 -0.003
		SUM	down right	225 4	0.000 0.000	X Y	-225	0.000 -0.198
		RESP	down left	2	0.000 0.000	X Y	2	0.000 0.000

16/749812

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
TOTAL							
A51	GR		down	225	0.000	X	5
A51	Guide		down	225	0.000	Y	225
A51	Stiff	:RIGID	left	5	0.000	Z	0.198
T1							
			down	12	0.000	X	-12
			left	0	0.000	Y	0.000
			left	0	0.000	Z	-0.392
P1							
			down	0	0.000	X	0
			left	0	0.000	Y	0.000
			left	0	0.000	Z	-0.005
SUM							
			down	225	0.000	X	-12
			left	12	0.000	Y	-225
			left	0	0.000	Z	-0.397
RESP							
			down	0	0.000	X	6
			left	6	0.000	Y	0.000
			left	0	0.000	Z	0.000
TOTAL							
			down	225	0.000	X	19
			left	19	0.000	Y	225
			left	0	0.000	Z	0.397
GR							
A52	GR		down	227	0.000	X	-227
A52	Guide		down	227	0.000	Y	0.000
A52	Stiff	:RIGID	left	0	0.000	Z	0.000
T1							
			down	46	0.000	X	46
			right	0	0.000	Y	0.000
			right	0	0.000	Z	-0.588
P1							
			down	1	0.000	X	1
			right	0	0.000	Y	0.000
			right	0	0.000	Z	-0.008
SUM							
			down	227	0.000	X	46
			right	46	0.000	Y	-227
			right	0	0.000	Z	-0.595
RESP							
			down	23	0.000	X	23
			left	0	0.000	Y	0.000
			left	0	0.000	Z	0.000
TOTAL							
			down	227	0.000	X	69
			down	0	0.000	Y	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
TOTAL							
A53	GR		down	220	0.000	X	227
A53	Guide		down	220	0.000	Y	0.000
A53	Stiff	:RIGID	left	0	0.000	Z	0.000
T1							
			down	172	0.000	X	-172
			left	0	0.000	Y	0.000
			left	0	0.000	Z	-0.784
P1							
			down	2	0.000	X	-2
			left	0	0.000	Y	0.000
			left	0	0.000	Z	-0.010
SUM							
			down	220	0.000	X	-174
			left	174	0.000	Y	-220
			left	0	0.000	Z	0.000
RESP							
			down	87	0.000	X	87
			left	0	0.000	Y	0.000
			left	0	0.000	Z	0.000
TOTAL							
			down	220	0.000	X	261
			left	261	0.000	Y	220
			left	0	0.000	Z	0.794
GR							
I53	GR		down	244	0.000	X	-244
I53	Guide		down	244	0.000	Y	0.000
I53	Stiff	:RIGID	left	0	0.000	Z	0.000
T1							
			down	465	0.000	X	465
			right	0	0.000	Y	0.000
			right	0	0.000	Z	-0.980
P1							
			down	6	0.000	X	6
			right	0	0.000	Y	0.000
			right	0	0.000	Z	-0.015
SUM							
			down	244	0.000	X	471
			right	471	0.000	Y	-244
			right	0	0.000	Z	-0.992
RESP							
			down	147	0.000	X	147
			left	0	0.000	Y	0.000
			left	0	0.000	Z	0.000
TOTAL							
			down	244	0.000	X	618
			left	618	0.000	Y	244
			left	0	0.000	Z	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
A54	GR	back	back	176	0.000	Z	0.992
A54	1 Inclined Stiff :RIGID					X	0.000
						Y	-176
						Z	0.000
T1		back	back	0.000	0.000	X	0.495
						Y	0.000
						Z	-1.183
P1		back	back	0.000	0.000	X	0.007
						Y	0.000
						Z	-0.015
SUM		back	back	176	0.000	X	0.502
						Y	0.000
						Z	-1.199
RESP		back	back	0.000	0.000	X	0.536
						Y	0.000
						Z	0.000
TOTAL		back	back	176	0.000	X	1.038
						Y	176
						Z	1.199
GR		back	back	106	0.000	X	0.000
						Y	-106
						Z	0.000
T1		back	back	0.000	0.000	X	0.024
						Y	0.000
						Z	-0.623
P1		back	back	0.000	0.000	X	0.000
						Y	0.000
						Z	-0.008
SUM		back	back	106	0.000	X	0.024
						Y	0.000
						Z	-0.631
RESP		back	back	0.000	0.000	X	0.661
						Y	0.000
						Z	0.095
TOTAL		back	back	106	0.000	X	0.685
						Y	0.000
						Z	0.726

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
156	1 Inclined Stiff :RIGID	GR	back	105	0.000	X	0.000
						Y	-105
						Z	0.000
T1		back	back	0.000	0.000	X	-0.089
						Y	0.000
						Z	1.085
P1		back	back	0.000	0.000	X	-0.001
						Y	0.000
						Z	0.014
SUM		back	back	105	0.000	X	-0.090
						Y	0.000
						Z	1.099
RESP		back	back	0.000	0.000	X	0.661
						Y	0.000
						Z	0.094
TOTAL		back	back	105	0.000	X	0.752
						Y	0.000
						Z	1.193
GR		back	back	178	0.000	X	0.000
						Y	-178
						Z	0.000
T1		back	back	0.000	0.000	X	-0.554
						Y	0.000
						Z	1.640
P1		back	back	0.000	0.000	X	-0.007
						Y	0.000
						Z	0.021
SUM		back	back	178	0.000	X	-0.561
						Y	0.000
						Z	1.662
RESP		back	back	0.000	0.000	X	0.538
						Y	0.000
						Z	0.000
TOTAL		back	back	178	0.000	X	1.089
						Y	0.000
						Z	1.662
GR		down	down	250	0.000	X	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Force	Dirn	Force
A59 1 Stiff	:RIGID		left	0.000	Y	-250 0.000
T1			down left	0.000 0.000	X Y	-463 0.000
P1			down left	0.000 0.000	X Y	-6 0.000
SUM			down left	250 0.000 469 0.000	X Y	-469 0.000 -250 1.452
RESP			down left	0.000 0.000	X Y	138 0.000 0.000
TOTAL			down left	250 0.000 607 0.000	X Y	607 0.000 250 1.453
GR			down left	231 0.000 0.000	X Y	-231 0.000 0.000
T1			down right	0.000 0.000	X Y	168 0.000 0.000
P1			down right	0.000 0.000	X Y	2 0.000 0.016
SUM			down right	231 0.000 171 0.000	X Y	171 0.000 -231 1.245
RESP			down left	0.000 0.000	X Y	80 0.000 0.000
TOTAL			down left	231 0.000 250 0.000	X Y	250 0.000 231 1.245
GR			down left	237 0.000 0.000	X Y	-237 0.000 0.000

A61
A61 1 Guide
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Force	Dirn	Force
A62 1 Stiff	:RIGID					
T1			down left	0.000 0.000	X Y	-45 0.000
P1			down left	0.000 0.000	X Y	-1 0.000
SUM			down left	237 0.000 46 0.000	X Y	-46 0.000 -237 1.037
RESP			down left	0.000 0.000	X Y	21 0.000 0.000
TOTAL			down left	237 0.000 67 0.000	X Y	67 0.000 237 1.038
GR			down left	235 0.000 0.000	X Y	-235 0.000 0.000
T1			down right	0.000 0.000	X Y	12 0.000 0.000
P1			down right	0.000 0.000	X Y	0 0.000 0.011
SUM			down right	235 0.000 12 0.000	X Y	12 0.000 -235 0.830
RESP			down left	0.000 0.000	X Y	6 0.000 0.000
TOTAL			down left	235 0.000 18 0.000	X Y	18 0.000 235 0.830
GR			down left	236 0.000 0.000	X Y	-236 0.000 0.000

A63 1
A63 1 Guide
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force
T1			down left	3	0.000 0.000	-3 0.000
P1			down left	0	0.000 0.000	0 0.000
SUM			down left	236 3	0.000 0.000	-3 -236
RESP			down left	2	0.000 0.000	2 0.000
TOTAL			down left	236 5	0.000 0.000	5 236
GR	A64 A64 1 Stiff :RIGID		down left	235	0.000 0.000	-235 0.000
T1			down right	1	0.000 0.000	1 0.000
P1			down right	0	0.000 0.000	0 0.000
SUM			down right	235 1	0.000 0.000	1 -235
RESP			down left	0	0.000 0.000	0 0.000
TOTAL			down left	235 1	0.000 0.000	1 235
GR	A65 A65 1 Stiff :RIGID		down left	235	0.000 0.000	-235 0.000
T1			down	0.000	0.000	0 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force
P1			down left	0	0.000 0.000	0 0.000
SUM			down left	235 0	0.000 0.000	0 -235
RESP			down left	0	0.000 0.000	0 0.000
TOTAL			down left	235 0	0.000 0.000	0 235
GR	A67 A67 1 Stiff :RIGID		down left	235	0.000 0.000	-235 0.000
T1			down right	0	0.000 0.000	0 0.000
P1			down right	0	0.000 0.000	0 0.000
SUM			down right	235 0	0.000 0.000	0 -235
RESP			down left	0	0.000 0.000	0 0.000
TOTAL			down left	235 0	0.000 0.000	0 235
GR	A68 A68 1 Stiff :RIGID		down left	235	0.000 0.000	0 -235
T1			up left	0 1	0.000 0.000	-1 0

SUPPORT FORCES

Point/ Supp. ID	Contact/ Type	Load Combination	Dim	Deform	GLOBAL Force	Dim	Deform
P1		up left		0 0.000 0 0.000	X Y	Z	-0.409
SUM		down left		235 0.000 1 0.000	X Y	Z	-1 0.000 -235 0.000 -0.415
RESP		down left		0 0.000 0 0.000	X Y	Z	0 0.000 0 0.000
TOTAL		down left		235 0.000 1 0.000	X Y	Z	1 0.000 235 0.000 0.415
GR		down right		236 0.000 0 0.000	X Y	Z	0 0.000 -236 0.000
T1		down right		0 0.000 4 0.000	X Y	Z	4 0.000 0 0.000 -0.614
P1		down right		0 0.000 0 0.000	X Y	Z	0 0.000 0 0.000
SUM		down right		236 0.000 4 0.000	X Y	Z	4 0.000 -236 0.000 -0.622
RESP		down left		0 0.000 2 0.000	X Y	Z	0 0.000 2 0.000
TOTAL		down left		236 0.000 5 0.000	X Y	Z	5 0.000 236 0.000 0.622
GR		down left		235 0.000 0 0.000	X Y	Z	0 0.000 -235 0.000
T1		up left		0 0.000 13 0.000	X Y	Z	-13 0.000 0 0.000 -0.819

A69 1 Guide
Stiff :RIGID

A70 1 Guide
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Contact/ Type	Load Combination	Dim	Deform	LOCAL Force	Dim	Deform	GLOBAL Force	Dim	Deform
P1		up left		0 0.000 0 0.000	up left		0 0.000 0 0.000	X Y	Z	0 0.000 0 0.000 -0.011
SUM		down left		235 0.000 13 0.000	down left		235 0.000 13 0.000	X Y	Z	-13 0.000 -235 0.000 -0.829
RESP		down left		0 0.000 6 0.000	down left		0 0.000 6 0.000	X Y	Z	0 0.000 0 0.000 0.000
TOTAL		down left		235 0.000 19 0.000	down left		235 0.000 19 0.000	X Y	Z	19 0.000 235 0.000 0.829
GR		down right		237 0.000 0 0.000	down right		237 0.000 0 0.000	X Y	Z	0 0.000 -237 0.000
T1		down right		1 0.000 50 0.000	down right		1 0.000 50 0.000	X Y	Z	50 0.000 -1 0.000 -1.025
P1		down right		0 0.000 1 0.000	down right		0 0.000 1 0.000	X Y	Z	1 0.000 0 0.000 -0.013
SUM		down right		237 0.000 50 0.000	down right		237 0.000 50 0.000	X Y	Z	50 0.000 -237 0.000 -1.037
RESP		down left		0 0.000 22 0.000	down left		0 0.000 22 0.000	X Y	Z	22 0.000 0 0.000 0.000
TOTAL		down left		237 0.000 72 0.000	down left		237 0.000 72 0.000	X Y	Z	72 0.000 237 0.000 1.037
GR		down left		231 0.000 0 0.000	down left		231 0.000 0 0.000	X Y	Z	0 0.000 -231 0.000
T1		up left		2 0.000 186 0.000	up left		2 0.000 186 0.000	X Y	Z	-186 0.000 2 0.000 -1.228
P1		up		0 0.000	up		0 0.000	X		-2 0.000

A72 1 Guide
Stiff :RIGID

TRAN-SL PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
07/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPipe4.60 RESULT PAGE 70

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
			left	2	0.000	Y	0	-0.016
	SUM		down	229	0.000	X	-189	0.000
			left	189	0.000	Y	-229	0.000
						Z		-1.244
	RESP		down	0	0.000	X	82	0.000
			left	82	0.000	Y	0	0.000
						Z		0.000
	TOTAL		down	229	0.000	X	271	0.000
			left	271	0.000	Y	229	0.000
						Z		1.244
A73 A73 1 Stiff	Guide :RIGID		down	250	0.000	X	0	0.000
			right	0	0.000	Y	-250	0.000
						Z		0.000
T1			down	9	0.000	X	517	0.000
			right	517	0.000	Y	-9	0.000
						Z		-1.433
P1			down	0	0.000	X	7	0.000
			right	7	0.000	Y	0	0.000
						Z		-0.019
SUM			down	259	0.000	X	524	0.000
			right	524	0.000	Y	-259	0.000
						Z		-1.451
RESP			down	0	0.000	X	142	0.000
			left	142	0.000	Y	0	0.000
						Z		0.000
TOTAL			down	259	0.000	X	666	0.000
			left	666	0.000	Y	259	0.000
						Z		1.452
A74 A74 1 Stiff	Inclined :RIGID		back	178	0.000	X	-178	0.000
						Y		0.000
						Z		0.000
T1			back	101	0.000	X	-101	0.591
						Y		0.000
						Z		-1.639
P1			back	1	0.000	X	-1	0.008
						Y		0.000

TRAN-SL PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
07/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPipe4.60 RESULT PAGE 71

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
		SUM	back	280	0.000	X	-280	0.599
						Y		0.000
						Z		-1.661
	RESP		back	3	0.000	X	3	0.553
						Y		0.000
						Z		0.000
	TOTAL		back	283	0.000	X	283	1.152
						Y		0.000
						Z		1.661
A76 A76 1 Stiff	Inclined :RIGID		back	106	0.000	X	-106	0.001
						Y		0.000
						Z		0.001
T1			forw	143	0.000	X	143	0.057
						Y		0.000
						Z		-0.985
P1			forw	2	0.000	X	2	0.001
						Y		0.000
						Z		-0.013
SUM			forw	39	0.000	X	39	0.057
						Y		0.000
						Z		-0.997
RESP			back	3	0.000	X	3	0.680
						Y		0.000
						Z		0.097
TOTAL			back	42	0.000	X	42	0.737
						Y		0.000
						Z		1.094
A76 A76 1 Stiff	Inclined :RIGID		back	106	0.000	X	-106	0.001
						Y		0.000
						Z		0.001
T1			back	143	0.000	X	-143	0.057
						Y		0.000
						Z		0.985
P1			back	2	0.000	X	-2	0.001
						Y		0.000
						Z		0.013

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Dim	GLOBAL Force	Deform
A78 A79 1 Stiff	Inclined :RIGID	SUM	back	250	0.000	X	back	-0.058	0.000
		RESP	back	3	0.000	X	back	0.680	0.000
		TOTAL	back	253	0.000	X	back	0.738	0.000
		GR	back	178	0.000	X	back	0.000	0.000
		T1	form	101	0.000	X	form	-0.591	0.000
		P1	form	1	0.000	X	form	1.639	0.000
		SUM	back	75	0.000	X	back	-0.598	0.000
		RESP	back	3	0.000	X	back	0.553	0.000
		TOTAL	back	78	0.000	X	back	1.152	0.000
		GR	down right	250 0	0.000 0.000	X Y	down right	0.000 0.000	0.000 0.000
		T1	up left	9 517	0.000 0.000	X Y	up left	-517 1.433	0.000 0.000
		P1	up left	0 7	0.000 0.000	X Y	up left	-7 0.019	0.000 0.000
		SUM	down	242	0.000	X	down	-524	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Dim	GLOBAL Force	Deform
A80 A81 1 Stiff	Guide :RIGID	SUM	left	524	0.000	X	left	-242	0.000
		RESP	down left	0 142	0.000 0.000	X Y	down left	142 0	0.000 0.000
		TOTAL	down left	242 666	0.000 0.000	X Y	down left	666 242	0.000 0.000
		GR	down left	231 0	0.000 0.000	X Y	down left	0 -231	0.000 0.000
		T1	down right	2 186	0.000 0.000	X Y	down right	186 -2	0.000 0.000
		P1	down right	0 2	0.000 0.000	X Y	down right	2 0	0.000 0.000
		SUM	down right	234 188	0.000 0.000	X Y	down right	188 -234	0.000 0.000
		RESP	down left	0 82	0.000 0.000	X Y	down left	82 0	0.000 0.000
		TOTAL	down left	234 271	0.000 0.000	X Y	down left	271 234	0.000 0.000
		GR	down right	237 0	0.000 0.000	X Y	down right	0 -237	0.000 0.000
		T1	up left	1 50	0.000 0.000	X Y	up left	-50 1	0.000 0.000
		P1	up left	0 1	0.000 0.000	X Y	up left	-1 0	0.000 0.000
		SUM	down left	236 50	0.000 0.000	X Y	down left	-50 -236	0.000 0.000

TRAN-SL PROJECT H-720 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SURVEY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 74

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
A82 A82.1 Guide Stiff	RESP		down left	0 22	0.000 0.000	Z	1.037
	TOTAL		down left	236 72	0.000 0.000	X Y Z	22 0 0
	GR		down left	235 0	0.000 0.000	X Y Z	72 236 0
	T1		down right	0 13	0.000 0.000	X Y Z	0 13 0
	P1		down right	0 0	0.000 0.000	X Y Z	0 0 0
SUM	SUM		down right	235 13	0.000 0.000	X Y Z	-235 0 0
	RESP		down left	0 6	0.000 0.000	X Y Z	6 0 0
	TOTAL		down left	235 19	0.000 0.000	X Y Z	19 235 0
	GR		down right	236 0	0.000 0.000	X Y Z	0 -236 0
	T1		up left	0 4	0.000 0.000	X Y Z	-4 0 0
P1	P1		up left	0 0	0.000 0.000	X Y Z	0 0 0
	SUM		down left	235 4	0.000 0.000	X Y Z	-4 -235 0

TRAN-SL PROJECT H-720 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SURVEY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 75

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
A84 A84.1 Guide Stiff	RESP		down left	0 2	0.000 0.000	X Y Z	2 0 0
	TOTAL		down left	235 5	0.000 0.000	X Y Z	5 235 0
	GR		down left	235 0	0.000 0.000	X Y Z	0 -235 0
	T1		down right	1 0	0.000 0.000	X Y Z	1 0 0
	P1		down right	0 0	0.000 0.000	X Y Z	0 0 0
SUM	SUM		down right	235 1	0.000 0.000	X Y Z	-1 -235 0
	RESP		down left	0 0	0.000 0.000	X Y Z	0 0 0
	TOTAL		down left	235 1	0.000 0.000	X Y Z	1 235 0
	GR		down left	235 0	0.000 0.000	X Y Z	0 -235 0
	T1		up left	0 0	0.000 0.000	X Y Z	0 0 0
P1	P1		down left	0 0	0.000 0.000	X Y Z	0 0 0
	SUM		down left	235 0	0.000 0.000	X Y Z	0 -235 0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 76

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
			left	0	0.000	Y	Z	0.000
		TOTAL	down left	235 0	0.000 0.000	X Y	0 235	0.000 0.207
A87 A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide Stiff :RIGID	GR	down left	235 0.000	0.000 0.000	X Y	-235 0.000	0.000 0.000
		T1	down left	11	0.000	X	-11	0.000
		P1	down right	0	0.000	X	0	0.000
		SUM	down left	235 11	0.000 0.000	X Y	-11 -235	0.000 -0.208
		RESP	down left	0	0.000	X	0	0.000
		TOTAL	down left	235 11	0.000 0.000	X Y	11 235	0.000 0.208
A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide Stiff :RIGID	GR	down left	235 0.000	0.000 0.000	X Y	-235 0.000	0.000 0.000
		T1	down right	20	0.000	X	20	0.000
		P1	down left	0	0.000	X	0	0.000
		SUM	down right	235 20	0.000 0.000	X Y	20 -235	0.000 -0.416
		RESP	down left	1	0.000	X	1	0.000

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 77

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
		TOTAL	down left	235 20	0.000 0.000	X Y	20 235	0.000 0.416
A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide Stiff :RIGID	GR	down left	236 0.000	0.000 0.000	X Y	-236 0.000	0.000 0.000
		T1	down left	17	0.000	X	-17	0.064
		P1	down right	0	0.000	X	0	0.000
		SUM	down left	236 16	0.000 0.000	X Y	-16 -236	0.064 0.000
		RESP	down left	2	0.000	X	2	0.000
		TOTAL	down left	236 19	0.000 0.000	X Y	19 236	0.064 0.624
A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide Stiff :RIGID	GR	down left	235 0.000	0.000 0.000	X Y	-235 0.000	0.000 0.000
		T1	down right	2	0.000	X	2	0.086
		P1	down left	0	0.000	X	0	0.000
		SUM	down right	235 2	0.000 0.000	X Y	2 -235	0.086 -0.832
		RESP	down left	9	0.000	X	9	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	Dim	GLOBAL Force	Deform
		TOTAL	235 down left	11 0.000 Z	X Y Z	11 0.086 235 0.833
A91 A91 Stiff	1 Guide :RIGID	GR	237 down left	0.000 0.000 Z	X Y Z	0.000 -237 0.000
		T1	19 down right	0.000 0.000 Z	X Y Z	19 0.107 -1.027
		P1	0 down right	0.000 0.000 Z	X Y Z	0 0.000 -0.013
		SUM	237 down right	0.000 0.000 Z	X Y Z	20 0.107 -1.040
		RESP	34 down left	0.000 0.000 Z	X Y Z	34 0.000 0.001
		TOTAL	237 down left	0.000 0.000 Z	X Y Z	53 0.107 1.041
A92 A92 Stiff	1 Guide :RIGID	GR	230 down left	0.000 0.000 Z	X Y Z	0.000 -230 0.000
		T1	78 down left	0.000 0.000 Z	X Y Z	-78 0.129 -1.232
		P1	1 down left	0.000 0.000 Z	X Y Z	-1 0.000 -0.016
		SUM	230 down left	0.000 0.000 Z	X Y Z	-80 0.129 -1.248
		RESP	127 down left	0.000 0.000 Z	X Y Z	127 0.000 0.001
		TOTAL	230 down	0.000	X	207 0.129

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Force	Dim	GLOBAL Force	Deform
		TOTAL	207 left	0.000	Z	230 0.000 1.249
A93 A93 Stiff	1 Guide :RIGID	GR	255 down left	0.000 0.000 Z	X Y Z	0.000 -255 0.000
		T1	225 down right	0.000 0.000 Z	X Y Z	225 0.150 -1.437
		P1	4 down right	0.000 0.000 Z	X Y Z	4 0.000 -0.019
		SUM	255 down right	0.000 0.000 Z	X Y Z	229 0.150 -1.456
		RESP	230 down left	0.000 0.000 Z	X Y Z	230 0.000 0.001
		TOTAL	255 down left	0.000 0.000 Z	X Y Z	459 0.150 1.457
A94 A94 Stiff	1 Inclined :RIGID	GR	168 back	0.000	X Y Z	-168 0.000 0.000
		T1	back	0.000	X Y Z	0.400 0.000 -1.644
		P1	back	0.000	X Y Z	0.006 0.000 -0.021
		SUM	168 back	0.000	X Y Z	0.406 0.000 -1.666
		RESP	back	0.000	X Y Z	0.818 0.000 0.001
		TOTAL	168 back	0.000	X Y	1.223 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Dim	Force	Deform
A96	GR	back		130	0.000	Z		1.667
A96, 1 Stiff	Inclined :RIGID					X		0.000
						Y	-130	0.000
						Z		0.000
T1	back				0.000	X		0.124
						Y		0.000
						Z		-1.381
P1	back				0.000	X		0.002
						Y		0.000
						Z		-0.018
SUM	back			130	0.000	X		0.126
						Y	-130	0.000
						Z		-1.399
RESP	back				0.000	X		0.970
						Y		0.000
						Z		0.097
TOTAL	back			130	0.000	X		1.096
						Y	130	0.000
						Z		1.496
GR	down left			221	0.000	X		0.000
						Y	-221	0.000
						Z		0.000
T1	down right			597	0.000	X		-0.049
						Y		0.000
						Z	-597	-0.133
P1	down right			10	0.000	X		-0.001
						Y		0.000
						Z	-10	0.000
SUM	down right			221 608	0.000 0.000	X		-0.050
						Y	-221	0.000
						Z	-608	-0.133
RESP	down left			85	0.000	X		0.971
						Y		0.000
						Z	85	0.000
TOTAL	down left			221 693	0.000 0.000	X		1.020
						Y	221	0.000
						Z	693	0.133

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Dim	Force	Deform
A98	GR		down	220	0.000	X		0.000
A98, 1 Stiff	guide :RIGID		left		0.000	Y	-220	0.000
						Z		0.000
T1	down				0.000	X		-0.232
						Y		0.000
						Z		0.116
P1	down			10	0.000	X		-0.003
						Y		0.000
						Z		0.000
SUM	down			220	0.000	X		-0.235
						Y	-220	0.000
						Z	565	0.116
RESP	down			95	0.000	X		0.971
						Y		0.000
						Z		0.000
TOTAL	down			220 660	0.000 0.000	X		1.205
						Y	220	0.000
						Z	660	0.116
GR	back			132	0.000	X		0.000
						Y	-132	0.000
						Z		0.000
T1	back				0.000	X		-0.405
						Y		0.000
						Z		1.009
P1	back				0.000	X		-0.005
						Y		0.000
						Z		0.013
SUM	back			132	0.000	X		-0.411
						Y	-132	0.000
						Z		1.022
RESP	back				0.000	X		0.970
						Y		0.000
						Z		0.102
TOTAL	back			132	0.000	X		1.381
						Y	132	0.000
						Z		1.124
GR	back			164	0.000	X		0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL Force
A101 1 Stiff	Inclined :RIGID					
T1		back		0.000		-164 0.000
P1		back		0.000		-0.565 0.000 1.144
SUM		back		0.000		-0.007 0.000 0.015
RESP		back		0.000		-0.572 0.000 1.159
TOTAL		back		0.000		0.810 0.000 0.001
GR		down left		0.000		1.382 0.000 1.160
T1		down left		0.000		-241 0.000
P1		down left		0.000		-244 0.000
SUM		down left		0.000		-4 0.000
RESP		down left		0.000		-248 0.000 0.956
TOTAL		down left		0.000		259 0.000 0.001
GR		down left		0.000		508 241 0.957
A103 A103 1	Guide :RIGID	down left		0.000		-209 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL Force
A104 1 Stiff	:RIGID					
T1		down right		0.000		93 0.000
P1		down right		0.000		2 0.000 0.010
SUM		down right		0.000		-0.112 0.000 -209
RESP		down left		0.000		149 0.000 0.001
TOTAL		down left		0.000		209 283 0.000
GR		down left		0.000		218 0.000 -218
T1		down right		0.000		3 0.000 -0.084
P1		down left		0.000		-1 0.000 0.007
SUM		down right		0.000		218 2 0.000
RESP		down left		0.000		40 0.000 0.000
TOTAL		down left		0.000		218 42 0.084
GR		down left		0.000		216 0.000 -216
A105 A105 1	Guide :RIGID	down left		0.000		0.000 0.000 0.574

TRAN-SL PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 84

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
T1			down left	27 0.000	0.000 0.378	X Y Z	-27 0.000 0.000	0.000 0.000 0.378
P1			down right	0 0.000	0.000 0.000	X Y Z	0 0.000 0.000	0.000 0.000 0.000
SUM			down left	216 26	0.000 0.000	X Y Z	-26 -216	0.000 0.000 0.382
RESP			down left	11 0.000	0.000 0.000	X Y Z	11 0.000 0.000	0.000 0.000 0.000
TOTAL			down left	216 37	0.000 0.000	X Y Z	37 216	0.000 0.000 0.383
GR	A106 A108 1 Guide :RIGID		down left	217 0.000	0.000 0.000	X Y Z	-217 0.000 0.000	0.000 0.000 0.000
T1			down right	17 0.000	0.000 0.189	X Y Z	17 0.000 0.189	0.000 0.000 0.189
P1			down left	0 0.000	0.000 0.002	X Y Z	0 0.000 0.002	0.000 0.000 0.002
SUM			down right	217 17	0.000 0.000	X Y Z	17 -217	0.000 0.000 0.191
RESP			down left	3 0.000	0.000 0.000	X Y Z	3 0.000 0.000	0.000 0.000 0.000
TOTAL			down left	217 20	0.000 0.000	X Y Z	20 217	0.000 0.000 0.191
GR	A108 A108 1 Guide :RIGID		down left	214 0	0.000 0.000	X Y Z	0 -214	0.000 0.000 0.000
T1			up	9 0.000	0.000	X	1 0.000	0.000

TRAN-SL PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 85

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
			right	1 0.000	0.000	Y	9 -0.189	0.000
P1			up	0 0.000	0.000	X	0 0.000	0.000
SUM			down right	205 1	0.000 0.000	X Y Z	-205 -0.191	0.000 0.000 0.191
RESP			down left	0 0.000	0.000	X Y Z	0 0.000 0.000	0.000 0.000 0.000
TOTAL			down left	205 2	0.000 0.000	X Y Z	2 205	0.000 0.000 0.191
GR	A109 A109 1 Guide :RIGID		down right	225 0	0.000 0.000	X Y Z	0 -225	0.000 0.000 0.000
T1			down left	32 5	0.000 0.000	X Y Z	-5 -32	0.000 0.000 0.377
P1			down left	0 0.000	0.000	X Y Z	0 0.000 0.000	0.000 0.000 0.000
SUM			down left	258 5	0.000 0.000	X Y Z	-5 -258	0.000 0.000 -0.382
RESP			down left	0 0.000	0.000	X Y Z	2 0	0.000 0.000 0.000
TOTAL			down left	258 7	0.000 0.000	X Y Z	7 258	0.000 0.000 0.382
GR	A110 A110 1 Guide :RIGID		down right	150 0	0.000 0.000	X Y Z	0 -150	0.000 0.000 0.000
T1			up	135 64	0.000 0.000	X Y	64 135	0.000 0.000

SUPPORT FORCES

Point/Supp.	Connect/Type	Load/Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
	P1	up right		2	0.000	X	0 0.000
				0	0.000	Y	2 0.000
						Z	-0.007
	SUM	down right		12	0.000	X	64 0.000
				64	0.000	Y	-12 0.000
						Z	-0.573
	RESP	down left		0	0.000	X	24 0.000
				24	0.000	Y	0 0.000
						Z	0.000
	TOTAL	down left		13	0.000	X	89 0.000
				89	0.000	Y	13 0.573
						Z	0.000
	GR	down left		124	0.000	X	0 0.000
				0	0.000	Y	-124 0.000
						Z	-8 0.000
	T1	down left		163	0.000	X	-108 0.000
				108	0.000	Y	-163 0.042
						Z	-11 -0.635
	P1	down left		2	0.000	X	-1 0.000
				1	0.000	Y	-1 0.000
						Z	-0.008
	SUM	down left		289	0.000	X	-109 0.000
				109	0.000	Y	-289 0.042
						Z	-19 -0.643
	RESP	down left		0	0.000	X	54 0.000
				54	0.000	Y	0 0.000
						Z	0.000
	TOTAL	down left		289	0.000	X	163 0.000
				163	0.000	Y	289 0.042
						Z	19 0.643
	GR	down right		198	0.000	X	0 0.000
				0	0.000	Y	-198 0.000
						Z	-13 0.000
	T1	up right		58	0.000	X	133 -0.064
				133	0.000	Y	58 0.053
						Z	4 -0.804

I112 1 Guide
Stiff :RIGID

SUPPORT FORCES

Point/Supp.	Connect/Type	Load/Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
	P1	up right		1	0.000	X	1 0.000
				1	0.000	Y	1 0.001
						Z	0 -0.010
	SUM	down right		139	0.000	X	135 -0.064
				135	0.000	Y	-139 0.053
						Z	-9 -0.814
	RESP	down left		1	0.000	X	138 0.000
				138	0.000	Y	1 0.000
						Z	0 0.000
	TOTAL	down left		140	0.000	X	273 0.064
				273	0.000	Y	140 0.053
						Z	9 0.814
	GR	down left		213	0.000	X	0 0.000
				0	0.000	Y	-213 0.000
						Z	-14 0.000
	T1	down left		42	0.000	X	-303 -0.077
				303	0.000	Y	-42 -0.643
						Z	-5 -0.975
	P1	down left		1	0.000	X	-4 0.000
				4	0.000	Y	-1 0.001
						Z	0 -0.013
	SUM	down left		255	0.000	X	-308 -0.077
				308	0.000	Y	-255 -0.643
						Z	-17 -0.986
	RESP	down left		3	0.000	X	219 0.000
				219	0.000	Y	3 0.000
						Z	0 0.000
	TOTAL	down left		258	0.000	X	527 0.077
				527	0.000	Y	258 0.042
						Z	17 0.986
	GR	back		116	0.000	X	0.001
						Y	-116 0.000
						Z	0.000
	T1	forw		27	0.000	X	-0.183
						Y	27 -0.000
						Z	-1.148
	P1	forw		0	0.000	X	-0.002

A113 1 Inclined
Stiff :RIGID

SUPPORT FORCES

Point/ Supp- ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
						Y	Z
	SUM	back		89	0.000	X	-0.184
						Y	-0.000
						Z	-1.163
	RESP	back		9	0.000	X	0.537
						Y	0.000
						Z	0.000
	TOTAL	back		99	0.000	X	0.721
						Y	0.000
						Z	1.163
A115 A115.1 Inclined Stiff	GR	back		189	0.000	X	0.001
						Y	0.000
						Z	-1.89
	T1	back		3	0.000	X	0.146
						Y	0.000
						Z	-0.806
	P1	back		0	0.000	X	0.002
						Y	0.000
						Z	-0.011
	SUM	back		192	0.000	X	0.150
						Y	0.000
						Z	-0.816
	RESP	back		6	0.000	X	0.712
						Y	0.000
						Z	0.142
	TOTAL	back		198	0.000	X	0.862
						Y	0.000
						Z	0.958
A116 A116.1 Inclined Stiff	GR	back		165	0.000	X	0.001
						Y	0.000
						Z	-1.65
	T1	forw		23	0.000	X	0.337
						Y	0.000
						Z	1.197
	P1	forw		0	0.000	X	0.005
						Y	0.000
						Z	0

SUPPORT FORCES

Point/ Supp- ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
						Z	0.016
	SUM	back		141	0.000	X	0.342
						Y	-141
						Z	1.213
	RESP	back		3	0.000	X	0.712
						Y	0.000
						Z	0.126
	TOTAL	back		144	0.000	X	1.055
						Y	0.000
						Z	1.339
A118 A118.1 Inclined Stiff	GR	back		154	0.000	X	0.001
						Y	0.000
						Z	-154
	T1	back		11	0.000	X	0.606
						Y	-11
						Z	1.490
	P1	back		0	0.000	X	0.008
						Y	0.000
						Z	0.019
	SUM	back		165	0.000	X	0.615
						Y	-165
						Z	1.509
	RESP	back		1	0.000	X	0.564
						Y	0.000
						Z	0.000
	TOTAL	back		167	0.000	X	1.179
						Y	-167
						Z	1.510
A119 A119.1 Guide Stiff	GR	down right		265	0.000	X	0.000
				0	0.000	Y	-265
						Z	0.000
	T1	up right		1 320	0.000 0.000	X	0.878
						Y	-1
						Z	1.278
	P1	up right		0 4	0.000 0.000	X	0.000
						Y	0
						Z	0.017

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 90

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Deform
		SUM	down right	264 324	0.000 0.000	X Y	0.078 -264 1.295
		RESP	down left	0 122	0.000 0.000	X Y	0.000 0.000
		TOTAL	down left	264 446	0.000 0.000	X Y	0.078 264 1.295
A120 A121 1 Stiff	Guide :RIGID	GR	down left	239 0	0.000 0.000	X Y	0.000 -239 0.000
		T1	down left	0 138	0.000 0.000	X Y	-138 0 0.000
		P1	down left	0 2	0.000 0.000	X Y	-2 0 0.014
		SUM	down left	239 140	0.000 0.000	X Y	-140 -239 1.079
		RESP	down left	0 74	0.000 0.000	X Y	74 0 0.000
		TOTAL	down left	239 214	0.000 0.000	X Y	214 239 1.079
A121 A121 1 Stiff	Guide :RIGID	GR	down right	246 0	0.000 0.000	X Y	0.000 -246 0.000
		T1	up right	0 51	0.000 0.000	X Y	51 0 0.892
		P1	up right	0 0	0.000 0.000	X Y	0.000 0.000 0.011
		SUM	down	246	0.000	X	52 0.000

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 91

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Deform
		RESP	down left	0 20	0.000 0.000	X Y	0.000 0.000
		TOTAL	down left	246 71	0.000 0.000	X Y	71 246 0.864
A122 A122 1 Stiff	Guide :RIGID	GR	down left	244 0	0.000 0.000	X Y	0.000 -244 0.000
		T1	down left	0 18	0.000 0.000	X Y	-18 0 0.639
		P1	down left	0 0	0.000 0.000	X Y	0.000 0.000
		SUM	down left	244 19	0.000 0.000	X Y	-19 -244 0.648
		RESP	down left	0 5	0.000 0.000	X Y	5 0 0.000
		TOTAL	down left	244 24	0.000 0.000	X Y	24 244 0.648
A123 A123 1 Stiff	Guide :RIGID	GR	down right	244 0	0.000 0.000	X Y	0.000 -244 0.000
		T1	up right	0 5	0.000 0.000	X Y	5 0 0.426
		P1	down right	0 0	0.000 0.000	X Y	0.000 0.000 0.006
		SUM	down right	244 5	0.000 0.000	X Y	5 -244 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL		
						Dirn	Force	Deform
	RESP		down left	0 1	0.000 0.000	Z	0.432	
	TOTAL		down left	244 6	0.000 0.000	X Y Z	1 0 0	
A124 A124.1 Stiff	Guide :RIGID		down left	244 0	0.000 0.000	X Y Z	244 -244 0	
	T1		down left	0 1	0.000 0.000	X Y Z	-1 0 0	
	P1		down left	0 0	0.000 0.000	X Y Z	0 0 0	
	SUM		down left	244 1	0.000 0.000	X Y Z	-1 -244 0	
	RESP		down left	0 0	0.000 0.000	X Y Z	0 0 0	
	TOTAL		down left	244 2	0.000 0.000	X Y Z	2 244 0	
A126 A126.1 Stiff	Guide :RIGID		down left	244 0	0.000 0.000	X Y Z	0 -244 0	
	T1		up left	0 0	0.000 0.000	X Y Z	0 0 0	
	P1		up left	0 0	0.000 0.000	X Y Z	0 0 0	
	SUM		down left	244 0	0.000 0.000	X Y Z	0 -244 0	

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL			GLOBAL		
						Dirn	Force	Deform	Dirn	Force	Deform
	RESP		down left	0 0	0.000 0.000		0	0.000	X Y Z	0 0 0	
	TOTAL		down left	244 1	0.000 0.000		244	0.000	X Y Z	1 244 0	
A127 A127.1 Stiff	Guide :RIGID		down right	244 0	0.000 0.000		244	0.000	X Y Z	0 -244 0	
	T1		down right	0 2	0.000 0.000		0	0.000	X Y Z	2 0 0	
	P1		down right	0 0	0.000 0.000		0	0.000	X Y Z	0 0 0	
	SUM		down right	244 2	0.000 0.000		244	0.000	X Y Z	2 -244 0	
	RESP		down left	0 0	0.000 0.000		0	0.000	X Y Z	0 0 0	
	TOTAL		down left	244 3	0.000 0.000		244	0.000	X Y Z	3 244 0	
A128 A128.1 Stiff	Guide :RIGID		down left	244 0	0.000 0.000		244	0.000	X Y Z	0 -244 0	
	T1		up left	0 6	0.000 0.000		0	0.000	X Y Z	-6 0 0	
	P1		up left	0 0	0.000 0.000		0	0.000	X Y Z	0 0 0	
	SUM		down left	244 7	0.000 0.000		244	0.000	X Y Z	-7 -244 0	
	RESP		down	0	0.000		0	0.000	X	6	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform.	GLOBAL		
						Dim	Force	Deform.
		left		6	0.000	Y	0	0.000
		down		244	0.000	X	13	0.000
		left		13	0.000	Y	244	0.000
						Z		0.647
A129	Guide	down		245	0.000	X	0	0.000
A129 1	Stiff	right		0	0.000	Y	-245	0.000
	:RIGID					Z	0.000	0.000
T1		down		0	0.000	X	24	0.000
		right		24	0.000	Y	0	0.000
						Z	-0.351	0.000
P1		down		0	0.000	X	0	0.000
		right		0	0.000	Y	0	0.000
						Z	-0.011	0.000
SUM		down		246	0.000	X	24	0.000
		right		24	0.000	Y	-246	0.000
						Z	-0.351	0.000
RESP		down		0	0.000	X	24	0.000
		left		24	0.000	Y	0	0.000
						Z	0.000	0.000
TOTAL		down		246	0.000	X	48	0.000
		left		48	0.000	Y	246	0.000
						Z	0.862	0.000
GR		down		240	0.000	X	0	0.000
		left		0	0.000	Y	-240	0.000
						Z	0.000	0.000
T1		up		2	0.000	X	-108	0.000
		left		108	0.000	Y	2	0.000
						Z	-1.064	0.000
P1		up		0	0.000	X	-2	0.000
		left		2	0.000	Y	0	0.000
						Z	-0.014	0.000
SUM		down		238	0.000	X	-110	0.000
		left		110	0.000	Y	-238	0.000
						Z	-1.078	0.000
RESP		down		0	0.000	X	89	0.000
		left		89	0.000	Y	0	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform.	GLOBAL		
						Dim	Force	Deform.
		TOTAL		238	0.000	X	199	0.000
				199	0.000	Y	238	0.000
						Z	1.078	0.000
GR		down		260	0.000	X	0	0.000
A131	Guide	right		0	0.000	Y	-260	0.000
A131 1	Stiff					Z	0.000	0.000
	:RIGID							
T1		down		7	0.000	X	349	0.068
		right		349	0.000	Y	-7	0.000
						Z	-1.277	0.000
P1		down		0	0.000	X	5	0.000
		right		5	0.000	Y	0	0.000
						Z	-0.017	0.000
SUM		down		267	0.000	X	354	0.068
		right		354	0.000	Y	-267	0.000
						Z	-1.293	0.000
RESP		down		0	0.000	X	153	0.000
		left		153	0.000	Y	0	0.000
						Z	0.000	0.000
TOTAL		down		267	0.000	X	508	0.068
		left		508	0.000	Y	267	0.000
						Z	1.293	0.000
GR		back		171	0.000	X	-171	0.000
A132	Inclined					Y	0.000	0.000
A132 1	Stiff	:RIGID				Z	0.000	0.000
T1		back		63	0.000	X	-63	0.502
						Y	0.000	0.000
						Z	-1.488	0.000
P1		back		1	0.000	X	-1	0.007
						Y	0.000	0.000
						Z	-0.019	0.000
SUM		back		235	0.000	X	-235	0.509
						Y	0.000	0.000
						Z	-1.508	0.000
RESP		back		3	0.000	X	3	0.661
						Y	0.000	0.000
						Z	0.000	0.000

TRAN-SL PROJECT W-320 ES-320-43, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 96

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
		TOTAL	back	238	0.000	X	1.170
						Y	238
						Z	1.508
A134 A134 1 Inclined Stiff	GR		back	130	0.000	X	-0.001
						Y	-130
						Z	0.001
	T1		forw	80	0.000	X	0.072
						Y	80
						Z	-0.998
	P1		forw	1	0.000	X	0.001
						Y	1
						Z	-0.013
	SUM		back	49	0.000	X	0.072
						Y	-49
						Z	-1.010
	RESP		back	3	0.000	X	0.816
						Y	3
						Z	0.123
	TOTAL		back	52	0.000	X	0.888
						Y	52
						Z	1.133
I134 I134 1 Inclined Stiff	GR		back	130	0.000	X	-0.001
						Y	-130
						Z	0.001
	T1		back	81	0.000	X	-0.074
						Y	-81
						Z	0.998
	P1		back	1	0.000	X	-0.001
						Y	-1
						Z	0.013
	SUM		back	212	0.000	X	-0.075
						Y	-212
						Z	1.012
	RESP		back	3	0.000	X	0.816
						Y	3
						Z	0.123
	TOTAL		back	215	0.000	X	0.892

TRAN-SL PROJECT W-320 ES-320-43, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 97

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
A136 A136 1 Inclined Stiff	GR		back	171	0.000	X	0.000
						Y	-171
						Z	0.000
	T1		forw	63	0.000	X	-0.504
						Y	63
						Z	1.488
	P1		forw	1	0.000	X	-0.007
						Y	1
						Z	0.019
	SUM		back	107	0.000	X	-0.510
						Y	-107
						Z	1.508
	RESP		back	3	0.000	X	0.661
						Y	3
						Z	0.000
	TOTAL		back	110	0.000	X	1.171
						Y	110
						Z	1.508
A137 A137 1 Guide Stiff	GR		down right	260	0.000	X	0.000
				0	0.000	Y	-260
						Z	0.000
	T1		up left	7	0.000	X	-0.068
				350	0.000	Y	-350
						Z	1.277
	P1		up left	0	0.000	X	-5
				5	0.000	Y	0
						Z	0.017
	SUM		down left	253	0.000	X	-355
				355	0.000	Y	-253
						Z	1.293
	RESP		down left	0	0.000	X	153
				153	0.000	Y	0
						Z	0.000
	TOTAL		down left	253	0.000	X	508
				508	0.000	Y	253
						Z	0.068

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL	
						Dim	Force
A138		GR	down	240	0.000	Z	1.293
A138.1	Guide		left	0	0.000	X	0
Stiff	:RIGID					Y	-240
		T1	down	2	0.000	Z	108
			right	108	0.000	X	108
						Y	-2
						Z	1.064
		P1	down	0	0.000	X	2
			right	2	0.000	Y	0
						Z	0.014
		SUM	down	242	0.000	X	110
			right	110	0.000	Y	-242
						Z	1.078
		RESP	down	0	0.000	X	89
			left	89	0.000	Y	0
						Z	0.000
		TOTAL	down	242	0.000	X	199
			left	199	0.000	Y	242
						Z	1.078
		GR	down	245	0.000	X	0
			right	0	0.000	Y	-245
						Z	0.000
		T1	up	0	0.000	X	-24
			left	24	0.000	Y	0
						Z	0.851
		P1	up	0	0.000	X	0
			left	0	0.000	Y	0
						Z	0.011
		SUM	down	245	0.000	X	-24
			left	24	0.000	Y	-245
						Z	0.862
		RESP	down	0	0.000	X	24
			left	24	0.000	Y	0
						Z	0.000
		TOTAL	down	245	0.000	X	48
			left	48	0.000	Y	245
						Z	0.862

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL	
						Dim	Force
A140		GR	down	244	0.000	X	0
A140.1	Guide		left	0	0.000	Y	-244
Stiff	:RIGID					Z	0.000
		T1	down	0	0.000	X	6
			right	6	0.000	Y	0
						Z	0.638
		P1	down	0	0.000	X	0
			right	0	0.000	Y	0
						Z	0.008
		SUM	down	244	0.000	X	7
			right	7	0.000	Y	-244
						Z	0.647
		RESP	down	0	0.000	X	6
			left	6	0.000	Y	0
						Z	0.000
		TOTAL	down	244	0.000	X	13
			left	13	0.000	Y	244
						Z	0.647
		GR	down	244	0.000	X	0
			right	0	0.000	Y	-244
						Z	0.000
		T1	up	0	0.000	X	-2
			left	2	0.000	Y	0
						Z	0.426
		P1	up	0	0.000	X	0
			left	0	0.000	Y	0
						Z	0.006
		SUM	down	244	0.000	X	-2
			left	2	0.000	Y	-244
						Z	0.431
		RESP	down	0	0.000	X	2
			left	2	0.000	Y	0
						Z	0.000
		TOTAL	down	244	0.000	X	3
			left	3	0.000	Y	244
						Z	0.431
		GR	down	244	0.000	X	0
							0.000

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 100

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Deform	Dirn	Deform
A142 1 Stiff	Guide :RIGID		left	0 0.000	Y	-244 0.000
		T1	down right	0 0.000 0 0.000	X Y	0 0.000 0 0.213
		P1	down right	0 0.000 0 0.000	X Y	0 0.000 0 0.003
		SUM	down right	244 0.000 0 0.000	X Y	0 -244 0.000 0 0.216
		RESP	down left	0 0.000 0 0.000	X Y	0 0.000 0 0.000
		TOTAL	down left	244 0.000 1 0.000	X Y	1 0.000 244 0.216
A144 A144 1 Stiff	Guide :RIGID					
		GR	down left	244 0.000 0.000	X Y	-244 0.000 0.000
		T1	down left	13 0.000	X Y	-13 0.000 -0.213
		P1	down left	0 0.000	X Y	0 0.000 -0.003
		SUM	down left	244 0.000 13 0.000	X Y	-13 0.000 -242 0.216
		RESP	down left	0 0.000	X Y	0 0.000 0.000
		TOTAL	down left	244 0.000 13 0.000	X Y	13 0.000 244 0.216
A145 A145 1	Guide					
		GR	down left	244 0.000 0.000	X Y	-244 0.000 0.000

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 101

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Deform	Dirn	Deform
	Stiff	:RIGID				
		T1	down right	0.000 0.000 25 0.000	X Y	25 0.000 -0.426
		P1	down right	0 0.000	X	0 0.000
		SUM	down right	244 0.000 25 0.000	X Y	25 0.000 -244 0.432
		RESP	down left	0.000 0.000 1 0.000	X Y	1 0.000 0.000
		TOTAL	down left	244 0.000 26 0.000	X Y	26 0.000 244 0.432
A146 A146 1 Stiff	Guide :RIGID					
		GR	down left	244 0.000 0.000	X Y	-244 0.000 0.000
		T1	down left	30 0.000	X Y	-30 0.079 0.000
		P1	down left	0 0.000	X Y	0 0.000 -0.639
		SUM	down left	244 0.000 30 0.000	X Y	-30 0.079 -244 0.648
		RESP	down left	4 0.000	X Y	4 0.000 0.000
		TOTAL	down left	244 0.000 34 0.000	X Y	34 0.079 244 0.648
A147 A147 1 Stiff	Guide :RIGID					
		GR	down left	246 0.000 0.000	X Y	-246 0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
T1			down right	46 0.000	0.000 0.000	46 0.000	0.106 -0.852
P1			down right	1 0.000	0.000 0.000	1 0.000	0.000 -0.011
SUM			down right	246 47	0.000 0.000	47 -246	0.106 -0.864
RESP			down left	14 0.000	0.000 0.000	14 0.000	0.000 0.000
TOTAL			down left	246 61	0.000 0.000	61 -246	0.106 0.864
GR	A148 1 Guide Stiff		down left	239 0.000	0.000 0.000	0.000 -239	0.000 0.000
T1			down left	142 0.000	0.000 0.000	-142 0.000	0.132 -1.066
P1			down left	2 0.000	0.000 0.000	-2 0.000	0.000 -0.014
SUM			down left	239 144	0.000 0.000	-144 -239	0.132 -1.079
RESP			down left	53 0.000	0.000 0.000	53 0.000	0.000 0.000
TOTAL			down left	239 197	0.000 0.000	197 239	0.132 1.080
GR	A149 1 Guide Stiff		down left	265 0.000	0.000 0.000	0.000 -265	0.000 0.000
T1			down	0.000	0.000	314	0.158

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
P1			down right	314 0.000	0.000 0.000	0.000 0.000	-1.279 0.000
SUM			down right	265 319	0.000 0.000	319 -265	0.158 -0.017
RESP			down left	98 0.000	0.000 0.000	98 0.000	0.000 -1.296
TOTAL			down left	265 417	0.000 0.000	417 265	0.158 0.000
GR	A150 1 Inclined Stiff		back	161 0.000	0.000 0.000	0.000 -161	0.000 0.000
T1			back	0.000	0.000	0.000	0.955
P1			back	0.000	0.000	0.000	-1.491
SUM			back	161 0.000	0.000 0.000	0.000 -161	0.012 -0.019
RESP			back	0.000	0.000	0.000	0.967
TOTAL			back	161 0.000	0.000 0.000	0.000 -161	-1.510 0.374
GR	A152 1 Inclined Stiff		back	150 0.000	0.000 0.000	0.000 -150	0.000 0.000
T1			back	0.000	0.000	0.000	0.847

TRAN-SL PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe-4.60 RESULT PAGE 104

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
P1		back	0.000		Z	-1.382
					X	0.011
					Y	0.000
					Z	-0.018
SUM		back	150	0.000	X	0.858
					Y	0.000
					Z	-1.400
RESP		back	0.000		X	0.444
					Y	0.000
					Z	0.049
TOTAL		back	150	0.000	X	1.302
					Y	0.000
					Z	1.449
GR		down left	251	0.000	X	0.000
					Y	0.000
					Z	-251
T1		down right	416	0.000	X	0.647
					Y	0.000
					Z	-0.126
P1		down right	7	0.000	X	0.008
					Y	0.000
					Z	-7
SUM		down right	251	0.000	X	0.655
					Y	-251
					Z	-423
RESP		down left	72	0.000	X	0.444
					Y	0.000
					Z	72
TOTAL		down left	251	0.000	X	1.099
					Y	251
					Z	495
GR		down left	230	0.000	X	0.000
					Y	0.000
					Z	-230
T1		down left	266	0.000	X	0.446
					Y	0.000
					Z	266

A155
A155.1
Guide
Stiff
:RIGID

TRAN-SL PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe-4.60 RESULT PAGE 105

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
P1		down left	4	0.000	X	0.006
					Y	0.000
					Z	4
SUM		down left	230	0.000	X	0.452
					Y	-230
					Z	270
RESP		down left	206	0.000	X	0.444
					Y	0.000
					Z	206
TOTAL		down left	230	0.000	X	0.896
					Y	230
					Z	476
GR		back	196	0.000	X	0.000
					Y	-196
T1		back		0.000	X	0.248
					Y	0.000
					Z	0.120
P1		back		0.000	X	0.003
					Y	0.000
					Z	0.001
SUM		back	196	0.000	X	0.251
					Y	0.000
					Z	-196
RESP		back		0.000	X	0.443
					Y	0.000
					Z	0.320
TOTAL		back	196	0.000	X	0.694
					Y	0.000
					Z	0.641
GR		back	103	0.000	X	0.000
					Y	-103
T1		back		0.000	X	0.349
					Y	0.000
					Z	-0.025
P1		back		0.000	X	0.005

A159
A158.1
Inclined
Stiff
:RIGID

SUPPORT FORCES

Point/ Supp.	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Dim	Deform
	SUM		back	103	0.000		Y	0.000
							Z	-0.001
							X	0.354
							Y	-103
							Z	-0.102
	RESP		back		0.000		X	0.193
							Y	0.000
							Z	0.553
	TOTAL		back	103	0.000		X	0.546
							Y	0.000
							Z	0.579
A161 A161.1 Stiff	GR	Inclined :RIGID	back	146	0.000		X	0.000
							Y	0.000
							Z	-146
	T1		back		0.000		X	0.384
							Y	0.000
							Z	-0.137
	P1		back		0.000		X	0.005
							Y	0.000
							Z	-0.002
	SUM		back	146	0.000		X	0.389
							Y	0.000
							Z	-146
	RESP		back		0.000		X	0.001
							Y	0.000
							Z	0.413
	TOTAL		back	146	0.000		X	0.390
							Y	0.000
							Z	146
	GR		down left	230	0.000		X	0.000
							Y	0.000
							Z	-230
A162 A162.1 Stiff	T1		down right	131	0.000		X	0.216
							Y	0.000
							Z	-131
	P1		down right	2	0.000		X	0.003
							Y	0.000

SUPPORT FORCES

Point/ Supp.	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Dim	Deform
	SUM		down right	230	0.000		X	0.219
							Y	-230
							Z	-133
	RESP		down left	205	0.000		X	0.000
							Y	0.000
							Z	205
	TOTAL		down left	230	0.000		X	0.219
							Y	230
							Z	338
A164 A164.1 Stiff	GR		down left	197	0.000		X	0.000
							Y	0.000
							Z	-197
	T1		down right	407	0.000		X	-0.215
							Y	0.000
							Z	-407
	P1		down right	6	0.000		X	-0.003
							Y	0.000
							Z	-6
	SUM		down right	197	0.000		X	-0.218
							Y	197
							Z	-412
	RESP		down left	0	0.000		X	0.000
							Y	0.000
							Z	0
	TOTAL		down left	197	0.000		X	0.218
							Y	197
							Z	412
A165 A165.1 Stiff	GR	Inclined :RIGID	back	143	0.000		X	0.000
							Y	0.000
							Z	-143
	T1		back		0.000		X	-0.325
							Y	0.000
							Z	-0.293
	P1		back		0.000		X	-0.004
							Y	0.000
							Z	-0.004

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPipe4.60 RESULT PAGE 108

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim Force	Deform.	GLOBAL Dim Force	Deform.
	SUM	back	143	0.000	X Y Z	-0.349 -143 -0.297
	RESP	back		0.000	X Y Z	0.000 0.000 0.000
	TOTAL	back	143	0.000	X Y Z	0.349 0.000 0.297
A168 A169 A170 1 Inclined Stiff	GR	back	129	0.000	X Y Z	0.000 -129 0.000
	T1	back		0.000	X Y Z	-0.046 0.000 -0.119
	P1	back		0.000	X Y Z	-0.001 0.000 -0.002
	SUM	back	129	0.000	X Y Z	-0.047 0.000 -0.120
	RESP	back		0.000	X Y Z	0.000 0.000 0.000
	TOTAL	back	129	0.000	X Y Z	0.047 0.000 0.120
A170 A170 A170 1 Inclined Stiff	GR	back	109	0.000	X Y Z	0.000 -109 0.000
	T1	back		0.000	X Y Z	0.118 0.000 0.070
	P1	back		0.000	X Y Z	0.002 0.000 0.001
	SUM	back	109	0.000	X	0.119

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPipe4.60 RESULT PAGE 109

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim Force	Deform.	LOCAL Dim Force	Deform.	GLOBAL Dim Force	Deform.
	RESP		back			0.000	X Y Z	0.000 0.000 0.000
	TOTAL		back		109	0.000	X Y Z	0.119 0.000 0.071

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 110

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result
		X	Y	Z	X	Y	Z	
A00	Anchor							
	GR	0	156	0	156	223	0	-437 490
	T1	977	0	-557	1125	0	-1299	0 1299
	P1	13	0	-7	15	0	-17	0 17
	SUM	990	156	-564	1150	223	-1317	-437 1405
	TOTAL	1047	155	-638	1236	223	-1490	437 1368
A01	Guide							
	GR	0	-514	0	514	0	0	0 0
	T1	0	0	1067	1067	0	0	0 0
	P1	0	0	14	14	0	0	0 0
	SUM	0	-514	1081	1081	0	0	0 0
	TOTAL	0	514	1218	1322	0	0	0 0
A05	Guide							
	GR	0	-399	0	399	0	0	0 0
	T1	-427	0	427	603	0	0	0 0
	P1	0	0	8	8	0	0	0 0
	SUM	-427	-399	432	730	0	0	0 0
	TOTAL	443	399	443	742	0	0	0 0
A06	Guide							
	GR	0	-167	0	167	0	0	0 0
	T1	53	0	-53	73	0	0	0 0
	P1	0	0	-27	27	0	0	0 0
	SUM	540	-167	-540	781	0	0	0 0
	TOTAL	593	167	593	855	0	0	0 0
A07	Inclined							
	GR	0	-143	0	143	0	0	0 0
	T1	0	0	0	0	0	0	0 0
	P1	0	0	0	0	0	0	0 0
	SUM	0	-143	0	143	0	0	0 0
	TOTAL	0	143	0	143	0	0	0 0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 111

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result
		X	Y	Z	X	Y	Z	
A10	Inclined							
	GR	0	-137	0	137	0	0	0 0
	T1	0	0	0	0	0	0	0 0
	P1	0	0	0	0	0	0	0 0
	SUM	0	-137	0	137	0	0	0 0
	TOTAL	0	137	0	137	0	0	0 0
A12	Inclined							
	GR	0	-112	0	112	0	0	0 0
	T1	0	0	0	0	0	0	0 0
	P1	0	0	0	0	0	0	0 0
	SUM	0	-112	0	112	0	0	0 0
	TOTAL	0	112	0	112	0	0	0 0
A13	Guide							
	GR	0	-176	0	176	0	0	0 0
	T1	-407	0	407	576	0	0	0 0
	P1	-5	0	5	8	0	0	0 0
	SUM	-413	-176	413	610	0	0	0 0
	TOTAL	472	176	472	691	0	0	0 0
A14	Guide							
	GR	0	-219	0	219	0	0	0 0
	T1	86	0	-86	121	0	0	0 0
	P1	0	0	-1	2	0	0	0 0
	SUM	87	-219	-87	251	0	0	0 0
	TOTAL	119	219	119	276	0	0	0 0
A15	Guide							
	GR	0	-210	0	210	0	0	0 0
	T1	-23	0	23	32	0	0	0 0
	P1	0	0	0	0	0	0	0 0
	SUM	-23	-210	23	212	0	0	0 0
	TOTAL	32	210	32	215	0	0	0 0

TRAN-SL PROJECT H-320 ES-320-43, Mk. M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE 2 AutoPIPE4.60 RESULT PAGE 112

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A16	Guide								
	GR	0	-213	0	213	0	0	0	0
	T1	7	0	-7	9	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-213	-7	213	0	0	0	0
	RESP	2	0	2	3	0	0	0	0
	TOTAL	9	213	9	213	0	0	0	0
A17	Anchor								
	GR	35	-212	35	217	3	0	2	4
	T1	-272	0	-267	381	0	-2	0	2
	P1	0	0	0	0	0	0	0	0
	SUM	-241	-212	-235	308	3	-2	2	4
	RESP	167	0	168	238	1	0	1	6
	TOTAL	409	212	404	612	3	8	3	9
A18	Guide								
	GR	0	-213	0	213	0	0	0	0
	T1	0	0	-0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	5	-212	-5	213	0	0	0	0
	RESP	3	0	3	4	0	0	0	0
	TOTAL	8	213	8	213	0	0	0	0
A19	Guide								
	GR	-1	-210	1	210	0	0	0	0
	T1	-18	0	18	25	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-19	-210	19	212	0	0	0	0
	RESP	11	0	11	15	0	0	0	0
	TOTAL	30	210	30	215	0	0	0	0
A20	Guide								
	GR	4	-220	-4	220	0	0	0	0
	T1	65	2	-65	93	0	0	0	0
	P1	1	0	-1	0	0	0	0	0
	SUM	70	-219	-70	240	0	0	0	0
	RESP	41	1	41	58	0	0	0	0
	TOTAL	111	220	111	270	0	0	0	0

TRAN-SL PROJECT H-320 ES-320-43, Mk. M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE 2 AutoPIPE4.60 RESULT PAGE 113

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A21	Guide								
	GR	-19	-169	19	171	0	0	0	0
	T1	-278	-11	278	393	0	0	0	0
	P1	-4	0	4	5	0	0	0	0
	SUM	-301	-179	301	461	0	0	0	0
	RESP	118	9	118	167	0	0	0	0
	TOTAL	419	188	419	621	0	0	0	0
A22	Inclined								
	GR	0	-135	0	135	0	0	0	0
	T1	0	32	0	32	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-103	0	103	0	0	0	0
	RESP	0	17	0	17	0	0	0	0
	TOTAL	0	120	0	120	0	0	0	0
A25	Inclined								
	GR	0	-122	0	122	0	0	0	0
	T1	0	-134	0	134	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-256	0	252	0	0	0	0
	RESP	0	12	0	12	0	0	0	0
	TOTAL	0	269	0	269	0	0	0	0
A27	Inclined								
	GR	0	-125	0	125	0	0	0	0
	T1	0	54	0	54	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-68	0	68	0	0	0	0
	RESP	0	12	0	12	0	0	0	0
	TOTAL	0	80	0	80	0	0	0	0
A28	Guide								
	GR	4	-201	-37	205	0	0	0	0
	T1	314	-31	-342	451	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	328	-237	-366	546	0	0	0	0
	RESP	133	18	131	187	0	0	0	0
	TOTAL	460	254	497	724	0	0	0	0

TRAN-SL PROJECT 320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe4.40 RESULT PAGE 114

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Result
		X	Y	Z	X	Y	Z		
A29	Guide								
	GR	-22	-234	-16	235	0	0	0	0
	T1	-194	39	200	282	0	0	0	0
	P1	-3	1	3	4	0	0	0	0
	SUM	-219	-194	187	348	0	0	0	0
	RESP	75	16	73	106	0	0	0	0
	TOTAL	293	210	261	445	0	0	0	0
A30	Guide								
	GR	-26	-195	-5	197	0	0	0	0
	T1	373	-61	-383	539	0	0	0	0
	P1	5	-1	-5	7	0	0	0	0
	SUM	352	-261	-394	589	0	0	0	0
	RESP	104	21	102	147	0	0	0	0
	TOTAL	456	282	496	730	0	0	0	0
A31	Inclined								
	GR	0	-139	0	139	0	0	0	0
	T1	0	61	0	61	0	0	0	0
	P1	0	1	0	1	0	0	0	0
	SUM	0	-77	0	77	0	0	0	0
	RESP	0	22	0	22	0	0	0	0
	TOTAL	0	99	0	99	0	0	0	0
A33	Inclined								
	GR	0	-86	0	86	0	0	0	0
	T1	0	-5	0	5	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-91	0	91	0	0	0	0
	RESP	0	21	0	21	0	0	0	0
	TOTAL	0	112	0	112	0	0	0	0
A34	Inclined								
	GR	0	-89	0	89	0	0	0	0
	T1	0	77	0	77	0	0	0	0
	P1	0	1	0	1	0	0	0	0
	SUM	0	-11	0	11	0	0	0	0
	RESP	0	25	0	25	0	0	0	0
	TOTAL	0	36	0	36	0	0	0	0

TRAN-SL PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe4.40 RESULT PAGE 115

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	
		X	Y	Z	Result	X	Y		Z
A36	Inclined								
	GR	0	-140	0	140	0	0	0	0
	T1	0	-18	0	18	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-158	0	158	0	0	0	0
	RESP	0	5	0	5	0	0	0	0
	TOTAL	0	164	0	164	0	0	0	0
A37	Inclined								
	GR	12	-199	-12	200	0	0	0	0
	T1	-375	1	375	537	0	0	0	0
	P1	-5	0	5	57	0	0	0	0
	SUM	-368	-199	368	557	0	0	0	0
	RESP	141	1	141	199	0	0	0	0
	TOTAL	509	199	509	747	0	0	0	0
A38	Inclined								
	GR	-4	-215	4	215	0	0	0	0
	T1	130	0	-130	184	0	0	0	0
	P1	2	0	-2	2	0	0	0	0
	SUM	128	-215	-128	282	0	0	0	0
	RESP	72	0	72	102	0	0	0	0
	TOTAL	201	215	201	356	0	0	0	0
A39	Inclined								
	GR	17	-248	15	249	63	5	278	285
	T1	403	0	591	715	-1	162	-1	162
	P1	6	0	10	11	0	5	0	5
	SUM	426	-248	612	788	52	172	277	332
	RESP	82	10	73	111	26	101	85	135
	TOTAL	508	259	688	894	88	273	362	462
A40	Inclined								
	GR	0	-62	0	62	0	0	0	0
	T1	293	0	-293	414	0	0	0	0
	P1	5	0	-5	47	0	0	0	0
	SUM	298	-62	-298	425	0	0	0	0
	RESP	0	42	0	42	0	0	0	0
	TOTAL	298	104	298	434	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe-4.60 RESULT PAGE 116

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Y	Z		X	Y	Z	
A41	Guide								
	GR	0	-445	0	465	0	0	0	0
	T1	-660	0	660	934	0	0	0	0
	P1	-10	0	10	14	0	0	0	0
	SUM	-670	-465	670	1056	0	0	0	0
	TOTAL	670	68	0	68	0	0	0	0
A45	Guide								
	GR	0	-450	0	450	0	0	0	0
	T1	-807	0	0	807	0	0	0	0
	P1	-12	0	0	0	0	0	0	0
	SUM	-818	-450	0	934	0	0	0	0
	TOTAL	818	56	0	56	0	0	0	0
A46	Guide								
	GR	0	-129	0	129	0	0	0	0
	T1	336	0	0	336	0	0	0	0
	P1	5	0	0	5	0	0	0	0
	SUM	341	-129	0	365	0	0	0	0
	TOTAL	341	31	0	31	0	0	0	0
A47	Guide								
	GR	0	-262	0	262	0	0	0	0
	T1	-74	0	0	74	0	0	0	0
	P1	-1	0	0	1	0	0	0	0
	SUM	-75	-262	0	273	0	0	0	0
	TOTAL	75	271	0	281	0	0	0	0
A48	Guide								
	GR	0	-214	0	214	0	0	0	0
	T1	1	0	0	1	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	2	-214	0	214	0	0	0	0
	TOTAL	2	217	0	217	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe-4.60 RESULT PAGE 117

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Y	Z		X	Y	Z	
A49	Anchor								
	GR	0	-228	0	228	0	0	0	0
	T1	5	0	-824	824	0	29	0	145
	P1	0	0	-13	13	0	0	0	29
	SUM	5	-228	-837	868	0	29	0	148
	TOTAL	5	229	840	871	0	30	0	150
A50	Guide								
	GR	0	-225	0	225	0	0	0	0
	T1	3	0	0	3	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	3	0	0	3	0	0	0	0
	TOTAL	3	0	0	3	0	0	0	0
A51	Guide								
	GR	0	-225	0	225	0	0	0	0
	T1	-12	0	0	12	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-12	-225	0	225	0	0	0	0
	TOTAL	12	225	0	225	0	0	0	0
A52	Guide								
	GR	0	-227	0	227	0	0	0	0
	T1	46	0	0	46	0	0	0	0
	P1	1	0	0	1	0	0	0	0
	SUM	47	-227	0	231	0	0	0	0
	TOTAL	47	227	0	231	0	0	0	0
A53	Guide								
	GR	0	-220	0	220	0	0	0	0
	T1	-172	0	0	172	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-172	-220	0	280	0	0	0	0
	TOTAL	172	220	0	280	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, H6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 118

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
153	Guide						
	GR	0	-244	0	244	0	0
	T1	465	0	0	465	0	0
	P1	6	0	0	0	0	0
	SUM	471	-244	0	531	0	0
	RESP	147	0	0	147	0	0
A54	TOTAL	618	244	0	665	0	0
	Inclined						
	GR	0	-176	0	176	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-176	0	176	0	0
A56	RESP	0	0	0	0	0	0
	TOTAL	0	176	0	176	0	0
	Inclined						
	GR	0	-106	0	106	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
156	SUM	0	-106	0	106	0	0
	RESP	0	0	0	0	0	0
	TOTAL	0	106	0	106	0	0
	Inclined						
	GR	0	-105	0	105	0	0
	T1	0	0	0	0	0	0
A58	P1	0	0	0	0	0	0
	SUM	0	-105	0	105	0	0
	RESP	0	0	0	0	0	0
	TOTAL	0	105	0	105	0	0
	Inclined						
	GR	0	-178	0	178	0	0
A58	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-178	0	178	0	0
	RESP	0	0	0	0	0	0
	TOTAL	0	178	0	178	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 119

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A59	Guide						
	GR	0	-250	0	250	0	0
	T1	-463	0	0	463	0	0
	P1	-6	0	0	6	0	0
	SUM	-469	-250	0	531	0	0
	RESP	135	0	0	135	0	0
A60	TOTAL	607	250	0	658	0	0
	Guide						
	GR	0	-231	0	231	0	0
	T1	168	0	0	168	0	0
	P1	2	0	0	2	0	0
	SUM	171	-231	0	288	0	0
A61	RESP	80	0	0	80	0	0
	TOTAL	250	231	0	341	0	0
	Guide						
	GR	0	-237	0	237	0	0
	T1	-45	0	0	45	0	0
	P1	-1	0	0	1	0	0
A62	SUM	-46	-237	0	241	0	0
	RESP	21	0	0	21	0	0
	TOTAL	67	237	0	246	0	0
	Guide						
	GR	0	-235	0	235	0	0
	T1	12	0	0	12	0	0
A63	P1	0	0	0	0	0	0
	SUM	12	-235	0	235	0	0
	RESP	6	0	0	6	0	0
	TOTAL	18	235	0	236	0	0
	Guide						
	GR	0	-236	0	236	0	0
A63	T1	-3	0	0	3	0	0
	P1	0	0	0	0	0	0
	SUM	-3	-236	0	236	0	0
	RESP	2	0	0	2	0	0
	TOTAL	5	236	0	236	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 120

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A64	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	1	0	0	1	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	1	-235	0	235	0	0	0	0	0	0
	TOTAL	1	235	0	235	0	0	0	0	0	0
A65	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0	0	0
A66	Anchor										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	0	0	76	76	0	1	8	8	8	8
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-235	76	248	0	1	8	8	8	8
	TOTAL	0	235	84	250	0	1	8	8	8	8
A67	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0	0	0
A68	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	-1	0	0	1	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-1	-235	0	235	0	0	0	0	0	0
	TOTAL	1	235	0	235	0	0	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 121

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A69	Guide										
	GR	0	-236	0	236	0	0	0	0	0	0
	T1	4	0	0	4	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	4	-236	0	236	0	0	0	0	0	0
	TOTAL	5	236	0	236	0	0	0	0	0	0
A70	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	-13	0	0	13	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-13	-235	0	235	0	0	0	0	0	0
	TOTAL	19	235	0	236	0	0	0	0	0	0
A71	Guide										
	GR	0	-237	0	237	0	0	0	0	0	0
	T1	50	-1	0	50	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	50	-237	0	242	0	0	0	0	0	0
	TOTAL	72	237	0	248	0	0	0	0	0	0
A72	Guide										
	GR	0	-231	0	231	0	0	0	0	0	0
	T1	-183	2	0	183	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-189	-229	0	297	0	0	0	0	0	0
	TOTAL	271	229	0	355	0	0	0	0	0	0
A73	Guide										
	GR	0	-250	0	250	0	0	0	0	0	0
	T1	517	-9	0	517	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	524	-259	0	585	0	0	0	0	0	0
	TOTAL	666	259	0	715	0	0	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 122

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A74	Inclined						
	GR	0	-178	0	178	0	0
	T1	0	-101	0	101	0	0
	P1	0	-1	0	0	0	0
	SUM	0	-280	0	280	0	0
	TOTAL	0	-280	0	280	0	0
A76	Inclined						
	GR	0	-106	0	106	0	0
	T1	0	143	0	143	0	0
	P1	0	2	0	2	0	0
	SUM	0	39	0	39	0	0
	TOTAL	0	42	0	42	0	0
A78	Inclined						
	GR	0	-106	0	106	0	0
	T1	0	-143	0	143	0	0
	P1	0	-2	0	2	0	0
	SUM	0	-250	0	250	0	0
	TOTAL	0	-253	0	253	0	0
A79	Inclined						
	GR	0	-178	0	178	0	0
	T1	0	101	0	101	0	0
	P1	0	1	0	0	0	0
	SUM	0	-75	0	75	0	0
	TOTAL	0	-78	0	78	0	0
A80	Guide						
	GR	0	-250	0	250	0	0
	T1	-517	9	0	517	0	0
	P1	-524	-242	0	577	0	0
	SUM	-1041	-233	0	1122	0	0
	TOTAL	-1041	-233	0	1122	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 123

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A80	Guide						
	GR	0	-231	0	231	0	0
	T1	186	2	0	186	0	0
	P1	188	-234	0	300	0	0
	SUM	374	-232	0	486	0	0
	TOTAL	374	-232	0	486	0	0
A81	Guide						
	GR	0	-237	0	237	0	0
	T1	-50	1	0	50	0	0
	P1	-50	-236	0	241	0	0
	SUM	-100	-235	0	291	0	0
	TOTAL	-100	-235	0	291	0	0
A82	Guide						
	GR	0	-235	0	235	0	0
	T1	13	0	0	13	0	0
	P1	13	-235	0	236	0	0
	SUM	26	-235	0	249	0	0
	TOTAL	26	-235	0	249	0	0
A83	Guide						
	GR	0	-236	0	236	0	0
	T1	-4	0	0	4	0	0
	P1	-4	-235	0	235	0	0
	SUM	-8	-235	0	239	0	0
	TOTAL	-8	-235	0	239	0	0
A84	Guide						
	GR	0	-235	0	235	0	0
	T1	1	0	0	1	0	0
	P1	1	-235	0	235	0	0
	SUM	2	-235	0	236	0	0
	TOTAL	2	-235	0	236	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Z	X	Z	X	Y	X	Z
A85	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A86	Anchor								
	GR	0	-235	0	235	0	0	1	1
	T1	0	0	-366	366	0	-12	8	14
	P1	0	0	0	0	0	0	0	0
	SUM	3	-235	-370	439	0	-12	9	15
	TOTAL	3	235	84	511	0	12	9	15
A87	Guide								
	GR	-11	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	-11	-235	0	236	0	0	0	0
	SUM	0	0	0	0	0	0	0	0
	TOTAL	11	235	0	236	0	0	0	0
A88	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	20	0	0	20	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	20	-235	0	236	0	0	0	0
	TOTAL	20	235	0	236	0	0	0	0
A89	Guide								
	GR	0	-236	0	236	0	0	0	0
	T1	-17	0	0	17	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-16	-236	0	236	0	0	0	0
	TOTAL	19	236	0	236	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Z	X	Z	X	Y	X	Z
A90	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	2	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	2	-235	0	235	0	0	0	0
	TOTAL	11	235	0	235	0	0	0	0
A91	Guide								
	GR	0	-237	0	237	0	0	0	0
	T1	19	0	0	19	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	20	-237	0	238	0	0	0	0
	TOTAL	53	237	0	243	0	0	0	0
A92	Guide								
	GR	0	-230	0	230	0	0	0	0
	T1	-78	0	0	78	0	0	0	0
	P1	-1	0	0	1	0	0	0	0
	SUM	-80	-230	0	244	0	0	0	0
	TOTAL	207	230	0	309	0	0	0	0
A93	Guide								
	GR	0	-255	0	255	0	0	0	0
	T1	225	0	0	225	0	0	0	0
	P1	4	0	0	4	0	0	0	0
	SUM	229	-255	0	342	0	0	0	0
	TOTAL	459	255	0	325	0	0	0	0
A94	Inclined								
	GR	0	-168	0	168	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-168	0	168	0	0	0	0
	TOTAL	0	168	0	168	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 126

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A96	Inclined							
	GR	0	-130	0	130	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-130	0	130	0	0	0
	TOTAL	0	130	0	130	0	0	0
A97	Guide							
	GR	0	-221	0	221	0	0	0
	T1	0	0	-597	597	0	0	0
	P1	0	0	-10	10	0	0	0
	SUM	0	-221	-608	647	0	0	0
	TOTAL	0	221	693	727	0	0	0
A98	Guide							
	GR	0	-220	0	220	0	0	0
	T1	0	0	556	556	0	0	0
	P1	0	0	10	10	0	0	0
	SUM	0	-220	565	607	0	0	0
	TOTAL	0	220	660	696	0	0	0
A99	Inclined							
	GR	0	-132	0	132	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-132	0	132	0	0	0
	TOTAL	0	132	0	132	0	0	0
A101	Inclined							
	GR	0	-164	0	164	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-164	0	164	0	0	0
	TOTAL	0	164	0	164	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 127

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	Result	X	Y			Z
A102	Guide								
	GR	0	-241	0	241	0	0	0	0
	T1	-244	0	0	0	0	0	0	0
	P1	-4	0	0	0	0	0	0	0
	SUM	-248	-241	0	346	0	0	0	0
	TOTAL	259	0	0	259	0	0	0	0
A103	Guide								
	GR	0	-209	0	209	0	0	0	0
	T1	93	0	0	93	0	0	0	0
	P1	2	0	0	2	0	0	0	0
	SUM	95	-209	0	230	0	0	0	0
	TOTAL	149	0	0	149	0	0	0	0
A104	Guide								
	GR	0	-218	0	218	0	0	0	0
	T1	3	0	0	3	0	0	0	0
	P1	-1	0	0	1	0	0	0	0
	SUM	2	-218	0	218	0	0	0	0
	TOTAL	42	218	0	222	0	0	0	0
A105	Guide								
	GR	0	-216	0	216	0	0	0	0
	T1	-27	0	0	27	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-24	-216	0	217	0	0	0	0
	TOTAL	37	216	0	219	0	0	0	0
A106	Guide								
	GR	0	-217	0	217	0	0	0	0
	T1	17	0	0	17	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	17	-217	0	217	0	0	0	0
	TOTAL	20	217	0	217	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A107	Anchor						
	GR	0	-217	35	220	0	-9
	T1	-5	-2	39	40	-16	19
	P1	0	0	0	0	0	0
	SUM	-5	-219	74	232	-16	11
	TOTAL	5	219	163	273	12	19
A108	Guide						
	GR	0	-214	0	214	0	0
	T1	1	9	0	9	0	0
	P1	0	0	0	0	0	0
	SUM	1	-205	0	205	0	0
	TOTAL	2	205	0	205	0	0
A109	Guide						
	GR	0	-225	0	225	0	0
	T1	-5	-32	0	33	0	0
	P1	0	0	0	0	0	0
	SUM	-5	-32	0	33	0	0
	TOTAL	7	258	0	258	0	0
A110	Guide						
	GR	0	-150	0	150	0	0
	T1	64	135	0	150	0	0
	P1	0	0	0	0	0	0
	SUM	64	135	0	150	0	0
	TOTAL	89	13	0	50	0	0
A112	Guide						
	GR	0	-124	-8	124	0	0
	T1	-108	-163	-11	196	0	0
	P1	0	0	0	0	0	0
	SUM	-108	-163	-11	196	0	0
	TOTAL	163	289	19	332	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
I112	Guide						
	GR	0	-198	-13	198	0	0
	T1	133	58	4	145	0	0
	P1	1	1	0	2	0	0
	SUM	135	-139	-9	194	0	0
	TOTAL	273	140	9	307	0	0
I113	Guide						
	GR	0	-212	-14	213	0	0
	T1	-303	-42	-3	306	0	0
	P1	-4	-1	0	4	0	0
	SUM	-308	-253	-17	400	0	0
	TOTAL	527	258	17	567	0	0
A113	Inclined						
	GR	0	-116	0	116	0	0
	T1	0	27	0	27	0	0
	P1	0	0	0	0	0	0
	SUM	0	-89	0	89	0	0
	TOTAL	0	99	0	99	0	0
A115	Inclined						
	GR	0	-189	0	189	0	0
	T1	0	-3	0	3	0	0
	P1	0	0	0	0	0	0
	SUM	0	-192	0	192	0	0
	TOTAL	0	198	0	198	0	0
A116	Inclined						
	GR	0	-165	0	165	0	0
	T1	0	23	0	23	0	0
	P1	0	0	0	0	0	0
	SUM	0	-141	0	141	0	0
	TOTAL	0	144	0	144	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 130

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		MOMENTS (ft-lb)		Result	Z	Result	Z
		X	Y	X	Y				
A118	Inclined								
	GR	0	-154	0	0	0	0	0	0
	T1	0	-11	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-165	0	0	0	0	0	0
A119	GR	0	167	0	0	0	0	0	0
	T1	0	1	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	168	0	0	0	0	0	0
	TOTAL	0	167	0	0	0	0	0	0
A120	GR	0	-265	0	0	0	0	0	0
	T1	320	1	0	0	0	0	0	0
	P1	4	0	0	0	0	0	0	0
	SUM	324	-264	0	0	0	0	0	0
	TOTAL	446	-264	0	0	0	0	0	0
A121	GR	0	-239	0	0	0	0	0	0
	T1	-138	0	0	0	0	0	0	0
	P1	-2	0	0	0	0	0	0	0
	SUM	-140	-239	0	0	0	0	0	0
	TOTAL	214	-239	0	0	0	0	0	0
A122	GR	0	-246	0	0	0	0	0	0
	T1	51	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	52	-246	0	0	0	0	0	0
	TOTAL	71	-246	0	0	0	0	0	0
A123	GR	0	-244	0	0	0	0	0	0
	T1	-18	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-18	-244	0	0	0	0	0	0
	TOTAL	24	-244	0	0	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 131

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		MOMENTS (ft-lb)		Result	Z	Result	Z
		X	Y	X	Y				
A123	Guide								
	GR	0	-244	0	0	0	0	0	0
	T1	5	0	0	0	5	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	5	-244	0	0	244	0	0	0
A124	GR	0	244	0	0	0	0	0	0
	T1	-1	0	0	0	0	0	0	0
	P1	-1	-244	0	0	244	0	0	0
	SUM	0	0	0	0	0	0	0	0
	TOTAL	2	244	0	0	244	0	0	0
A125	Anchor								
	GR	0	-244	0	0	244	0	0	0
	T1	0	0	148	148	0	1	9	7
	P1	0	0	2	2	0	0	0	0
	SUM	0	-244	150	298	0	1	10	13
A126	GR	0	-244	0	0	244	0	0	0
	T1	0	0	173	173	0	2	15	15
	P1	0	0	0	0	0	0	0	0
	SUM	0	-244	173	299	0	2	15	15
	TOTAL	1	244	173	299	0	2	15	15
A127	Guide								
	GR	0	-244	0	0	244	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-244	0	0	244	0	0	0
A128	GR	0	244	0	0	0	0	0	0
	T1	2	0	0	0	2	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	2	-244	0	0	244	0	0	0
	TOTAL	2	244	0	0	244	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 132

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A128	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	-7	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	-7	-244	0	244	0	0	0	0	0
	TOTAL	13	244	0	244	0	0	0	0	0
A129	Guide									
	GR	0	-245	0	245	0	0	0	0	0
	T1	24	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	24	-246	0	247	0	0	0	0	0
	TOTAL	48	246	0	251	0	0	0	0	0
A130	Guide									
	GR	0	-240	0	240	0	0	0	0	0
	T1	-108	2	0	108	0	0	0	0	0
	P1	-2	0	0	0	0	0	0	0	0
	SUM	-110	-238	0	262	0	0	0	0	0
	TOTAL	199	238	0	510	0	0	0	0	0
A131	Guide									
	GR	0	-260	0	260	0	0	0	0	0
	T1	349	-7	0	349	0	0	0	0	0
	P1	5	0	0	0	0	0	0	0	0
	SUM	354	-267	0	444	0	0	0	0	0
	TOTAL	508	267	0	574	0	0	0	0	0
A132	Inclined									
	GR	0	-171	0	171	0	0	0	0	0
	T1	0	-63	0	63	0	0	0	0	0
	P1	0	-1	0	1	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0	0
	TOTAL	0	238	0	238	0	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 133

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A134	Inclined									
	GR	0	-130	0	130	0	0	0	0	0
	T1	0	80	1	80	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0
	SUM	0	-49	0	49	0	0	0	0	0
	TOTAL	0	3	0	3	0	0	0	0	0
I134	Inclined									
	GR	0	-130	0	130	0	0	0	0	0
	T1	0	-81	0	81	0	0	0	0	0
	P1	0	-1	0	1	0	0	0	0	0
	SUM	0	-212	0	212	0	0	0	0	0
	TOTAL	0	215	0	215	0	0	0	0	0
A136	Inclined									
	GR	0	-171	0	171	0	0	0	0	0
	T1	0	63	0	63	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0
	SUM	0	-107	0	107	0	0	0	0	0
	TOTAL	0	110	0	110	0	0	0	0	0
A137	Guide									
	GR	0	-260	0	260	0	0	0	0	0
	T1	-350	7	0	350	0	0	0	0	0
	P1	-5	0	0	5	0	0	0	0	0
	SUM	-355	-253	0	435	0	0	0	0	0
	TOTAL	508	253	0	567	0	0	0	0	0
A138	Guide									
	GR	0	-240	0	240	0	0	0	0	0
	T1	108	-2	0	108	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	110	-242	0	242	0	0	0	0	0
	TOTAL	199	242	0	313	0	0	0	0	0

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 134

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A139	Guide							
	GR	0	-245	0	245	0	0	0
	T1	-24	0	0	24	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-24	-245	0	246	0	0	0
	TOTAL	48	245	0	250	0	0	0
A140	Guide							
	GR	0	-244	0	244	0	0	0
	T1	6	0	0	6	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	7	-244	0	244	0	0	0
	TOTAL	15	244	0	244	0	0	0
A141	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-2	0	0	2	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-2	-244	0	244	0	0	0
	TOTAL	3	244	0	244	0	0	0
A142	Guide							
	GR	0	-244	0	244	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-244	0	244	0	0	0
	TOTAL	1	244	0	244	0	0	0
A143	Anchor							
	GR	0	-244	0	244	0	0	2
	T1	3	0	-175	175	0	7	17
	P1	0	0	0	0	0	0	0
	SUM	3	-244	-175	302	0	8	18
	TOTAL	3	244	198	315	0	16	18

TRAN-SL PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 135

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A144	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-13	0	0	13	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-13	-244	0	245	0	0	0
	TOTAL	13	244	0	245	0	0	0
A145	Guide							
	GR	0	-244	0	244	0	0	0
	T1	25	0	0	25	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	25	-244	0	246	0	0	0
	TOTAL	26	244	0	246	0	0	0
A146	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-30	0	0	30	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-30	-244	0	246	0	0	0
	TOTAL	34	244	0	246	0	0	0
A147	Guide							
	GR	0	-246	0	246	0	0	0
	T1	46	0	0	46	0	0	0
	P1	1	0	0	1	0	0	0
	SUM	47	-246	0	250	0	0	0
	TOTAL	61	246	0	253	0	0	0
A148	Guide							
	GR	0	-239	0	239	0	0	0
	T1	-142	0	0	142	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-142	-239	0	273	0	0	0
	TOTAL	197	239	0	310	0	0	0

TRAN-SL PROJECT M-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/06/76 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 136

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A149	Guide									
	GR	0	-265	0	265	0	0	0	0	0
	T1	314	0	0	0	0	0	0	0	0
	P1	5	0	0	0	0	0	0	0	0
	SUM	319	-265	0	415	0	0	0	0	0
	RESP	92	0	0	96	0	0	0	0	0
A150	TOTAL	417	265	0	494	0	0	0	0	0
	Inclined									
	GR	0	-161	0	161	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-161	0	161	0	0	0	0	0
A152	RESP	0	161	0	161	0	0	0	0	0
	TOTAL	0	161	0	161	0	0	0	0	0
	Inclined									
	GR	0	-150	0	150	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
A153	SUM	0	-150	0	150	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0
	TOTAL	0	150	0	150	0	0	0	0	0
	Guide									
	GR	0	-251	0	251	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
A155	P1	0	-416	0	416	0	0	0	0	0
	SUM	0	-423	0	491	0	0	0	0	0
	RESP	0	251	0	251	0	0	0	0	0
	TOTAL	0	72	0	72	0	0	0	0	0
	Guide									
	GR	0	-230	0	230	0	0	0	0	0
A156	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	0	0	0	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0
	Anchor									
A163	GR	0	-261	0	261	0	0	0	0	0
	T1	319	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	323	-261	0	441	0	0	0	0	0
	RESP	261	0	0	261	0	0	0	0	0
	TOTAL	584	261	0	702	0	0	0	0	0

PROJECT M-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/06/76 SLURRY LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 137

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A156	Inclined									
	GR	0	-196	0	196	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-196	0	196	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0
A159	TOTAL	0	196	0	196	0	0	0	0	0
	Inclined									
	GR	0	-103	0	103	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-103	0	103	0	0	0	0	0
A161	RESP	0	103	0	103	0	0	0	0	0
	TOTAL	0	103	0	103	0	0	0	0	0
	Inclined									
	GR	0	-146	0	146	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
A162	SUM	0	-146	0	146	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0
	TOTAL	0	146	0	146	0	0	0	0	0
	Guide									
	GR	0	-230	0	230	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
A163	P1	0	-131	0	131	0	0	0	0	0
	SUM	0	-132	0	132	0	0	0	0	0
	RESP	0	230	0	230	0	0	0	0	0
	TOTAL	0	203	0	205	0	0	0	0	0
	Anchor									
	GR	0	-261	0	261	0	0	0	0	0
A165	T1	319	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	323	-261	0	441	0	0	0	0	0
	RESP	261	0	0	261	0	0	0	0	0
	TOTAL	584	261	0	702	0	0	0	0	0
	Anchor									
A167	GR	0	-261	0	261	0	0	0	0	0
	T1	319	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	323	-261	0	441	0	0	0	0	0
	RESP	261	0	0	261	0	0	0	0	0
	TOTAL	584	261	0	702	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A164	Guide							
	GR	0	-197	0	197	0	0	0
	T1	0	0	-407	407	0	0	0
	P1	0	0	-6	6	0	0	0
	SUM	0	-197	-412	457	0	0	0
	TOTAL	0	197	412	457	0	0	0
A165	Inclined							
	GR	0	-143	0	143	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-143	0	143	0	0	0
	TOTAL	0	143	0	143	0	0	0
A168	Inclined							
	GR	0	-129	0	129	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-129	0	129	0	0	0
	TOTAL	0	129	0	129	0	0	0
A170	Inclined							
	GR	0	-109	0	109	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-109	0	109	0	0	0
	TOTAL	0	109	0	109	0	0	0
A171	Anchor							
	GR	0	-78	0	78	-9	-112	112
	T1	-523	0	300	603	0	-1045	1045
	P1	-7	0	4	8	-15	0	15
	SUM	-530	-78	305	616	-9	-1060	1066
	TOTAL	530	78	305	616	9	1060	1066

ASME B31.3c (1992) CODE COMPLIANCE

Point name	Load combination	(Moments in ft-lb)			(Stress in psi)			Code
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F. In	Eq. Load no. type	Stress Allow.	
A00	Max P	437	17		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	0	1292		1.00	1.00 (17) DISP	4851	16700
	Cold to T1	0	163		1.00	1.00 (18) OCC	784	22211
	SRSS							
A01	Max P	1109	35		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	0	2638		1.00	1.00 (17) DISP	7386	16700
	Cold to T1	0	332		1.00	1.00 (18) OCC	9847	25050
	SRSS						1592	22211
A02	Max P	305	29		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	0	2202		1.00	1.00 (17) DISP	4851	16700
	Cold to T1	0	232		1.00	1.00 (18) OCC	8220	25050
	SRSS						1114	22211
A03 N	Max P	312	30		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	0	2262		1.00	1.00 (17) DISP	3567	16700
	Cold to T1	0	238		1.00	1.00 (18) OCC	8445	25050
	SRSS						1141	22211
A03 M	Max P	30	312		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	2262	0		1.00	1.00 (17) DISP	3567	16700
	Cold to T1	238	0		1.00	1.00 (18) OCC	8445	25050
	SRSS						1141	22211
A03 F	Max P	35	440		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	2665	0		1.00	1.00 (17) DISP	4177	16700
	Cold to T1	280	0		1.00	1.00 (18) OCC	9949	25050
	SRSS						1344	22211
A03 F	Max P	33	470		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	2570	0		1.00	1.00 (17) DISP	4321	16700
	Cold to T1	284	0		1.00	1.00 (18) OCC	9369	25050
	SRSS						1364	22211
A03 F	Max P	470	33		1.00	1.00 (18) SUST	4844	16700
	GR + Max P	0	2510		1.00	1.00 (17) DISP	4321	16700
	Cold to T1	0	284		1.00	1.00 (18) OCC	9369	25050
	SRSS						1364	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE						(Stress in psi)	Code
		Moments in ft-lb		S.I.F.	Eq. Load	No. type	Stress Allow.		
		In-Pl. Moment	Out-Pl. Torsion						
A04	Max P	472	33	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	2671	0	1.00	1.00 (18) SUST	4330	16700	
	Cold to T1	0	283	1.00	1.00	1.00 (17) DISP	9224	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1357	22211	
A05	Max P	877	25	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	1896	0	1.00	1.00 (18) SUST	4371	16700	
	Cold to T1	0	81	1.00	1.00	1.00 (17) DISP	7079	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	388	22211	
A06	Max P	96	27	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	1956	0	1.00	1.00 (18) SUST	2540	16700	
	Cold to T1	0	278	1.00	1.00	1.00 (17) DISP	7452	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1334	22211	
A07	Max P	73	41	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	3093	0	1.00	1.00 (18) SUST	2464	16700	
	Cold to T1	0	331	1.00	1.00	1.00 (17) DISP	11547	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1588	22211	
A08 N-	Max P	50	44	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	3333	0	1.00	1.00 (18) SUST	2380	16700	
	Cold to T1	0	347	1.00	1.00	1.00 (17) DISP	12442	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1663	22211	
A08 N+	Max P	44	50	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	3333	0	1.00	1.00 (18) SUST	2380	16700	
	Cold to T1	0	347	1.00	1.00	1.00 (17) DISP	12442	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1663	22211	
A08 M	Max P	46	86	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	3439	0	1.00	1.00 (18) SUST	2529	16700	
	Cold to T1	0	381	1.00	1.00	1.00 (17) DISP	12837	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1827	22211	
A08 F-	Max P	19	57	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	1429	0	1.00	1.00 (18) SUST	2351	16700	
	Cold to T1	0	323	1.00	1.00	1.00 (17) DISP	5335	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1549	22211	
A08 F+	Max P	57	19	1.00	1.00	(3a) HOOP	4844	16700	
	GR + Max P	0	1429	0	1.00	1.00 (18) SUST	2351	16700	
	Cold to T1	0	323	1.00	1.00	1.00 (17) DISP	5335	25050	
	SRSS	0	0	1.00	1.00	1.00 (18) OCC	1549	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE						(Stress in psi)	Code
		(Moments in ft-lb)		S.I.F.	Eq. Load		Stress Allow.		
		In-Pl. Moment	Out-Pl. Torsion		In	Out				No. type
A10	Max P	64	7						
	GR + Max P	0	509	1.00	1.00	(3a) HOOP	4844	16700	
	Cold to T1	0	261	0	1.00	1.00 (18) SUST	2372	16700	
	SRSS	0	0	1.00	1.00 (17) DISP	1899	25050		
A11 N-	Max P	39	14	1.00	1.00	(18) OCC	1252	22211	
	GR + Max P	0	1031	0	1.00	1.00 (18) OCC			
	Cold to T1	0	243	0	1.00	1.00 (17) DISP	3849	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1168	22211		
A11 N+	Max P	14	39	(3a) HOOP	4844	16700			
	GR + Max P	1031	0	1.00	1.00 (18) SUST	2262	16700		
	Cold to T1	243	0	0	1.00	1.00 (17) DISP	3849	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1168	22211		
A11 M	Max P	40	10	(3a) HOOP	4844	16700			
	GR + Max P	3041	0	1.00	1.00 (18) SUST	2260	16700		
	Cold to T1	140	0	0	1.00	1.00 (17) DISP	11352	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	672	22211		
A11 F-	Max P	39	61	(3a) HOOP	4844	16700			
	GR + Max P	2933	0	1.00	1.00 (18) SUST	2262	16700		
	Cold to T1	38	0	0	1.00	1.00 (17) DISP	1899	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	183	22211		
A11 F+	Max P	61	39	(3a) HOOP	4844	16700			
	GR + Max P	0	2933	1.00	1.00 (18) SUST	2260	16700		
	Cold to T1	0	38	0	1.00	1.00 (17) DISP	10951	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	183	22211		
A12	Max P	86	36	(3a) HOOP	4844	16700			
	GR + Max P	0	2696	1.00	1.00 (18) SUST	2262	16700		
	Cold to T1	0	22	0	1.00	1.00 (17) DISP	10064	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	106	22211		
A13	Max P	157	12	(3a) HOOP	4844	16700			
	GR + Max P	0	905	1.00	1.00 (18) SUST	2816	16700		
	Cold to T1	0	320	0	1.00	1.00 (17) DISP	3380	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1537	22211		
A14	Max P	227	3	(3a) HOOP	4844	16700			
	GR + Max P	0	241	1.00	1.00 (18) SUST	3148	16700		
	Cold to T1	0	85	0	1.00	1.00 (17) DISP	901	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	410	22211		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.

A15	Max P	208	1	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	65	0	1.00	1.00 (17)	DISP	3058	16700
	Cold to T1	0	23	0	1.00	1.00 (18)	occ	241	25050
	SRSS							16700	22211

A16	Max P	213	0	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	18	0	1.00	1.00 (17)	DISP	3058	16700
	Cold to T1	0	6	0	1.00	1.00 (18)	occ	241	25050
	SRSS							16700	22211

A17	- Max P	211	0	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	3	0	1.00	1.00 (17)	DISP	3075	16700
	Cold to T1	0	3	0	1.00	1.00 (18)	occ	34	25050
	SRSS							15	22211

A17	+ Max P	211	1	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	7	0	1.00	1.00 (17)	DISP	3076	16700
	Cold to T1	0	3	0	1.00	1.00 (18)	occ	26	25050
	SRSS							16	22211

A18	Max P	213	1	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	14	0	1.00	1.00 (17)	DISP	3085	16700
	Cold to T1	0	7	0	1.00	1.00 (18)	occ	31	22211
	SRSS							16	22211

A19	Max P	207	4	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1	49	0	1.00	1.00 (17)	DISP	3084	16700
	Cold to T1	0	23	0	1.00	1.00 (18)	occ	111	22211
	SRSS							111	22211

A20	Max P	229	14	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	3	185	0	1.00	1.00 (17)	DISP	3161	16700
	Cold to T1	2	86	0	1.00	1.00 (18)	occ	414	22211
	SRSS							414	22211

A21	Max P	149	51	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	7	324	0	1.00	1.00 (17)	DISP	2819	16700
	Cold to T1	12	693	0	1.00	1.00 (18)	occ	2587	25050
	SRSS							1555	22211

A22	Max P	124	152	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	57	1703	0	1.00	1.00 (17)	DISP	2819	16700
	Cold to T1	33	419	0	1.00	1.00 (18)	occ	2017	22211
	SRSS							2017	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.

A23	N+ Max P	90	166	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	46	1862	0	1.00	1.00 (17)	DISP	2987	16700
	Cold to T1	30	456	0	1.00	1.00 (18)	occ	2191	22211
	SRSS							2191	22211

A23	N- Max P	166	90	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1862	46	0	1.00	1.00 (17)	DISP	2987	16700
	Cold to T1	456	30	0	1.00	1.00 (18)	occ	2191	22211
	SRSS							2191	22211

A23	M Max P	172	29	11	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1961	20	6	1.00	1.00 (17)	DISP	2900	16700
	Cold to T1	483	6	0	1.00	1.00 (18)	occ	2317	22211
	SRSS							2317	22211

A23	F- Max P	61	16	28	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	693	75	21	1.00	1.00 (17)	DISP	2365	16700
	Cold to T1	279	21	0	1.00	1.00 (18)	occ	1343	22211
	SRSS							1343	22211

A23	F+ Max P	16	61	28	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	75	693	21	1.00	1.00 (17)	DISP	2365	16700
	Cold to T1	279	21	0	1.00	1.00 (18)	occ	1343	22211
	SRSS							1343	22211

A25	Max P	67	47	28	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	116	512	313	1.00	1.00 (17)	DISP	2460	16700
	Cold to T1	35	313	0	1.00	1.00 (18)	occ	1509	22211
	SRSS							1509	22211

A26	N- Max P	39	77	28	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	60	876	40	1.00	1.00 (17)	DISP	2476	16700
	Cold to T1	40	361	0	1.00	1.00 (18)	occ	1746	22211
	SRSS							1746	22211

A26	N+ Max P	72	47	28	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	864	160	40	1.00	1.00 (17)	DISP	2476	16700
	Cold to T1	363	18	0	1.00	1.00 (18)	occ	1746	22211
	SRSS							1746	22211

A26	M Max P	191	25	60	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	2151	52	9	1.00	1.00 (17)	DISP	2987	16700
	Cold to T1	599	9	0	1.00	1.00 (18)	occ	2017	22211
	SRSS							2017	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				Stress in psi	Code Allow.
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F. In/Out		
A26 F- Max P	GR + Max P	183	31		1.00 1.00 (18)	4844	16700
	Cold to T1	2060	95	47	1.00 1.00 (17) D1SP	2954	16700
	SRSS	555	21		1.00 1.00 (18) OCC	2666	16700
A26 F+ Max P	GR + Max P	31	183		1.00 1.00 (18)	4844	16700
	Cold to T1	2060	95	47	1.00 1.00 (17) D1SP	2954	16700
	SRSS	21	555		1.00 1.00 (18) OCC	2666	16700
A27 Max P	GR + Max P	57	169		1.00 1.00 (18)	4844	16700
	Cold to T1	103	1893	44	1.00 1.00 (17) D1SP	2086	16700
	SRSS	23	515		1.00 1.00 (18) OCC	2475	22211
A28 Max P	GR + Max P	190	88		1.00 1.00 (18)	4844	16700
	Cold to T1	27	1186	44	1.00 1.00 (17) D1SP	3065	16700
	SRSS	46	384		1.00 1.00 (18) OCC	4261	25050
A29 Max P	GR + Max P	261	18		1.00 1.00 (18)	4844	16700
	Cold to T1	83	589	44	1.00 1.00 (17) D1SP	3319	16700
	SRSS	24	152		1.00 1.00 (18) OCC	2227	25050
A30 Max P	GR + Max P	183	17		1.00 1.00 (18)	4844	16700
	Cold to T1	237	1231	45	1.00 1.00 (17) D1SP	2943	16700
	SRSS	51	437		1.00 1.00 (18) OCC	4682	25050
A31 Max P	GR + Max P	98	53		1.00 1.00 (18)	4844	16700
	Cold to T1	145	2481	48	1.00 1.00 (17) D1SP	2086	16700
	SRSS	44	302		1.00 1.00 (18) OCC	1469	22211
A32 N- Max P	GR + Max P	67	57		1.00 1.00 (18)	4844	16700
	Cold to T1	134	2686	48	1.00 1.00 (17) D1SP	2485	16700
	SRSS	39	328		1.00 1.00 (18) OCC	1588	22211
A32 N+ Max P	GR + Max P	57	67		1.00 1.00 (18)	4844	16700
	Cold to T1	2686	134	48	1.00 1.00 (17) D1SP	2485	16700
	SRSS	328	39		1.00 1.00 (18) OCC	1588	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				Stress in psi	Code Allow.
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F. In/Out		
A32 M Max P	GR + Max P	64	24		1.00 1.00 (18)	4844	16700
	Cold to T1	2959	78	40	1.00 1.00 (17) D1SP	2390	16700
	SRSS	408	7		1.00 1.00 (18) OCC	11053	25050
A32 F- Max P	GR + Max P	35	13		1.00 1.00 (18)	4844	16700
	Cold to T1	1774	23	63	1.00 1.00 (17) D1SP	2233	16700
	SRSS	378	37		1.00 1.00 (18) OCC	6628	25050
A32 F+ Max P	GR + Max P	9	36		1.00 1.00 (18)	4844	16700
	Cold to T1	225	1750	63	1.00 1.00 (17) D1SP	2243	16700
	SRSS	50	376		1.00 1.00 (18) OCC	1821	22211
A33 Max P	GR + Max P	31	30		1.00 1.00 (18)	4844	16700
	Cold to T1	198	1430	63	1.00 1.00 (17) D1SP	2269	16700
	SRSS	49	567		1.00 1.00 (18) OCC	5395	25050
A34 Max P	GR + Max P	37	29		1.00 1.00 (18)	4844	16700
	Cold to T1	13	65	63	1.00 1.00 (17) D1SP	2291	16700
	SRSS	13	414		1.00 1.00 (18) OCC	5615	25050
A35 N- Max P	GR + Max P	16	36		1.00 1.00 (18)	4844	16700
	Cold to T1	56	1833	63	1.00 1.00 (17) D1SP	2291	16700
	SRSS	11	433		1.00 1.00 (18) OCC	5615	25050
A35 N+ Max P	GR + Max P	36	16		1.00 1.00 (18)	4844	16700
	Cold to T1	1833	56	63	1.00 1.00 (17) D1SP	2291	16700
	SRSS	433	11		1.00 1.00 (18) OCC	5615	25050
A35 M Max P	GR + Max P	60	22		1.00 1.00 (18)	4844	16700
	Cold to T1	3014	43	22	1.00 1.00 (17) D1SP	2367	16700
	SRSS	506	7		1.00 1.00 (18) OCC	11253	25050
A35 F- Max P	GR + Max P	56	68		1.00 1.00 (18)	4844	16700
	Cold to T1	2739	5	2	1.00 1.00 (17) D1SP	2485	16700
	SRSS	428	1		1.00 1.00 (18) OCC	10233	25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	In-Pt. Torsion	In ft-lb)	S.I.F. Eq. type	In-Pt. Moment	In-Pt. Torsion	In ft-lb)	Code Stress Allow.
A35 F+	Max P	68	56	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	5	2739	2 1.00 1.00 (17) DI SP	(17) DI SP	2485	16700		
	Cold to T1	1	428	1.00 1.00 (18) OCC	(18) OCC	10223	25050		
A36	Max P	98	52	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	4	2544	2 1.00 1.00 (17) DI SP	(17) DI SP	2592	16700		
	Cold to T1	2	396	1.00 1.00 (18) OCC	(18) OCC	9498	25050		
A37	Max P	188	20	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	1	1297	2 1.00 1.00 (17) DI SP	(17) DI SP	2571	16700		
	Cold to T1	1	492	1.00 1.00 (18) OCC	(18) OCC	1615	25050		
A38	Max P	218	6	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	368	2 1.00 1.00 (17) DI SP	(17) DI SP	3111	16700		
	Cold to T1	0	140	1.00 1.00 (18) OCC	(18) OCC	1375	25050		
A39 -	Max P	208	3	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	183	2 1.00 1.00 (17) DI SP	(17) DI SP	3063	16700		
	Cold to T1	0	69	1.00 1.00 (18) OCC	(18) OCC	684	25050		
A39 +	Max P	360	7	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	345	0 1.00 1.00 (17) DI SP	(17) DI SP	2588	16700		
	Cold to T1	42	0	1.00 1.00 (18) OCC	(18) OCC	1289	25050		
A40	Max P	87	14	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	694	0 1.00 1.00 (17) DI SP	(17) DI SP	2480	16700		
	Cold to T1	84	0	1.00 1.00 (18) OCC	(18) OCC	2590	25050		
A41	Max P	1264	50	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	3226	0 1.00 1.00 (17) DI SP	(17) DI SP	8128	16700		
	Cold to T1	294	0	1.00 1.00 (18) OCC	(18) OCC	12044	25050		
A42	Max P	412	57	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	3989	0 1.00 1.00 (17) DI SP	(17) DI SP	4055	16700		
	Cold to T1	134	0	1.00 1.00 (18) OCC	(18) OCC	14891	25050		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	In-Pt. Torsion	In ft-lb)	S.I.F. Eq. type	In-Pt. Moment	In-Pt. Torsion	In ft-lb)	Code Stress Allow.
A43 N+	Max P	416	58	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4061	0 1.00 1.00 (17) DI SP	(17) DI SP	4076	16700		
	Cold to T1	135	0	1.00 1.00 (18) OCC	(18) OCC	15162	25050		
A43 M+	Max P	58	416	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4041	0 1.00 1.00 (17) DI SP	(17) DI SP	4076	16700		
	Cold to T1	0	135	1.00 1.00 (18) OCC	(18) OCC	15162	25050		
A43 M	Max P	65	506	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4489	0 1.00 1.00 (17) DI SP	(17) DI SP	4503	16700		
	Cold to T1	0	164	1.00 1.00 (18) OCC	(18) OCC	16758	25050		
A43 F+	Max P	60	488	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4159	0 1.00 1.00 (17) DI SP	(17) DI SP	4418	16700		
	Cold to T1	0	159	1.00 1.00 (18) OCC	(18) OCC	15527	25050		
A43 F+	Max P	488	60	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4159	0 1.00 1.00 (17) DI SP	(17) DI SP	4418	16700		
	Cold to T1	159	0	1.00 1.00 (18) OCC	(18) OCC	15527	25050		
A44	Max P	486	59	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	4094	0 1.00 1.00 (17) DI SP	(17) DI SP	4409	16700		
	Cold to T1	159	0	1.00 1.00 (18) OCC	(18) OCC	15284	25050		
A45	Max P	1197	42	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	2889	0 1.00 1.00 (17) DI SP	(17) DI SP	7806	16700		
	Cold to T1	258	0	1.00 1.00 (18) OCC	(18) OCC	10787	25050		
A46	Max P	23	11	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	755	0 1.00 1.00 (17) DI SP	(17) DI SP	2818	16700		
	Cold to T1	69	0	1.00 1.00 (18) OCC	(18) OCC	2818	25050		
A47	Max P	323	3	1.00 1.00 (18) HOOP	(3a) HOOP	4844	16700		
	GR + Max P	0	140	0 1.00 1.00 (17) DI SP	(17) DI SP	3606	16700		
	Cold to T1	19	0	1.00 1.00 (18) OCC	(18) OCC	532	25050		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					(Stress in psi)		
		In-Pl. Moment	Out-P. Moment	Torsion	S.F.	Eq. Load	Code Allow.	Code Allow.	Code Allow.
A48	Max P GR + Max P Cold to T1 SRSS	216 0 5	1 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3092 190	16700 16700 25050	4844 16700 25050
A49	- Max P GR + Max P Cold to T1 SRSS	251 0 3	0 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3262 94	16700 16700 25050	4844 16700 25050
A49	+ Max P GR + Max P Cold to T1 SRSS	239 0 0	0 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3211 14	16700 16700 25050	4844 16700 25050
A50	Max P GR + Max P Cold to T1 SRSS	239 0 0	0 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3212 28	16700 16700 25050	4844 16700 25050
A51	Max P GR + Max P Cold to T1 SRSS	239 0 0	0 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3207 97	16700 16700 25050	4844 16700 25050
A52	Max P GR + Max P Cold to T1 SRSS	242 0 0	1 97 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3207 362	16700 16700 25050	4844 16700 25050
A53	Max P GR + Max P Cold to T1 SRSS	228 0 0	5 362 1/4	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3160 1357	16700 16700 25050	4844 16700 25050
153	Max P GR + Max P Cold to T1 SRSS	280 0 0	18 1354 651	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 3408 5091	16700 16700 25050	4844 16700 25050
A54	Max P GR + Max P Cold to T1 SRSS	148 0 0	40 3005 334	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 2796 1120	16700 16700 25050	4844 16700 25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					(Stress in psi)		
		In-Pl. Moment	Out-P. Moment	Torsion	S.F.	Eq. Load	Code Allow.	Code Allow.	Code Allow.
A55 N+	Max P GR + Max P Cold to T1 SRSS	115 0 0	42 3169 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A55 N+	Max P GR + Max P Cold to T1 SRSS	12 3169 357	0 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A55 M	Max P GR + Max P Cold to T1 SRSS	45 3389 456	1 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A55 F+	Max P GR + Max P Cold to T1 SRSS	31 2365 489	2 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A55 F+	Max P GR + Max P Cold to T1 SRSS	2 2365 0	31 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A56	Max P GR + Max P Cold to T1 SRSS	16 0 0	27 2082 490	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
156	Max P GR + Max P Cold to T1 SRSS	13 0 0	28 2109 479	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A57 N+	Max P GR + Max P Cold to T1 SRSS	5 0 0	31 2392 477	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050
A57 N+	Max P GR + Max P Cold to T1 SRSS	31 2392 477	5 0 0	1.00 1.00 1.00	(18) (18) (18)	HOOP SUST DISP	4844 16700 25050	4844 16700 25050	4844 16700 25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		Moment	In-Pl. Out-Pl. Torsion	S.I.F. In Out	Eq. Load	Code	Stress	Allow.
A57 M	Max P	45	2	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	3416	0	0 1.00 1.00 (17) D1SP	2278	16700		
	Cold to T1	441	0	1.00 1.00 (18)	OC	2116	22211	
A57 F-	Max P	42	117	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	3196	0	0 1.00 1.00 (17) D1SP	2661	16700		
	Cold to T1	348	0	1.00 1.00 (18)	OC	1671	22211	
A57 F+	Max P	117	42	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	3196	0 1.00 1.00 (17) D1SP	2661	16700		
	Cold to T1	0	348	1.00 1.00 (18)	OC	1671	22211	
A58	Max P	150	40	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	3032	0 1.00 1.00 (17) D1SP	2807	16700		
	Cold to T1	0	327	1.00 1.00 (18)	OC	1567	22211	
A59	Max P	295	19	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	1399	0 1.00 1.00 (17) D1SP	5224	25050		
	Cold to T1	0	627	1.00 1.00 (18)	OC	3008	22211	
A60	Max P	253	5	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	373	0 1.00 1.00 (17) D1SP	3503	16700		
	Cold to T1	0	167	1.00 1.00 (18)	OC	802	22211	
A61	Max P	264	1	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	100	0 1.00 1.00 (17) D1SP	3329	16700		
	Cold to T1	0	45	1.00 1.00 (18)	OC	214	22211	
A62	Max P	261	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	27	0 1.00 1.00 (17) D1SP	3315	16700		
	Cold to T1	0	12	1.00 1.00 (18)	OC	57	22211	
A63	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	7	0 1.00 1.00 (17) D1SP	3326	16700		
	Cold to T1	0	3	1.00 1.00 (18)	OC	15	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		Moment	In-Pl. Out-Pl. Torsion	S.I.F. In Out	Eq. Load	Code	Stress	Allow.
A64	Max P	261	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	2	0 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	1	1.00 1.00 (18)	OC	4	22211	
A65	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	1	0 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	0	1.00 1.00 (18)	OC	2	25050	
A66	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	0	0 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	0	1.00 1.00 (18)	OC	1	25050	
A66	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	0	0 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	0	1.00 1.00 (18)	OC	1	22211	
A67	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	0	8 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	0	1.00 1.00 (18)	OC	30	25050	
A67	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	1	0 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	0	1.00 1.00 (18)	OC	1	22211	
A68	Max P	261	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	2	8 1.00 1.00 (17) D1SP	3317	16700		
	Cold to T1	0	1	1.00 1.00 (18)	OC	4	22211	
A69	Max P	262	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	8	8 1.00 1.00 (17) D1SP	3318	16700		
	Cold to T1	0	3	1.00 1.00 (18)	OC	16	22211	
A70	Max P	261	0	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	29	8 1.00 1.00 (17) D1SP	3317	16700		
	Cold to T1	0	12	1.00 1.00 (18)	OC	59	22211	
A71	Max P	264	1	1.00 1.00 (18)	HOOP	4844	16700	
	GR + Max P	0	110	8 1.00 1.00 (17) D1SP	3329	16700		
	Cold to T1	0	46	1.00 1.00 (18)	OC	220	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					(Stress in psi)				
		(Moments in ft-lb)									
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	In-Pl. Stress	Out-Pl. Stress	Torsion	S.I.F.	Eq. Load
A72	GR + Max P Cold to T1 SRSS	253 5 0	6 412 172	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3275 1539 25050 22211				
A73	Max P GR + Max P Cold to T1 SRSS	295 19 0	21 1546 645	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3483 5770 25050 22211				
A74	Max P GR + Max P Cold to T1 SRSS	149 72 336	45 3432 336	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2809 12615 23950 22211				
A75 N-	Max P GR + Max P Cold to T1 SRSS	116 126 1	47 3616 359	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2662 13507 25050 22211				
A75 N+	Max P GR + Max P Cold to T1 SRSS	35 3611 357	120 235 335	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2662 13507 25050 22211				
A75 W	Max P GR + Max P Cold to T1 SRSS	48 3673 454	1 6 28	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2293 14463 25050 22211				
A75 F-	Max P GR + Max P Cold to T1 SRSS	33 2719 489	8 227 1	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2226 10186 25050 22211				
A75 F+	Max P GR + Max P Cold to T1 SRSS	8 227 1	33 2719 489	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2226 10186 25050 22211				
A76	Max P GR + Max P Cold to T1 SRSS	10 263 1	29 2385 490	1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 2210 8959 25050 22211				

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE										(Stress in psi)								
		Comments in Table 1					S.I.F.					Eq. Load								
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	In	Out	In	Out	no. type	In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	no. type	Code Stress Allow.		
A76	Max P	18	34																4844	16700
	GR + Max P	263	2385																2248	16700
	Cold to T1		490																8959	25050
	SRSS	1																	2352	22211
A77 N-	Max P	1	39																4844	16700
	GR + Max P	227	2719																2249	16700
	Cold to T1		489																10186	25050
	SRSS	1																	2345	22211
A77 N+	Max P	39	1																4844	16700
	GR + Max P	2719	227																2249	16700
	Cold to T1		489																10186	25050
	SRSS	1																	2345	22211
A77 M	Max P	54	2																4844	16700
	GR + Max P	3673	2																2319	16700
	Cold to T1		454																10443	25050
	SRSS	1																	2181	22211
A77 F-	Max P	59	114																4844	16700
	GR + Max P	3611	235																2677	16700
	Cold to T1		357																13507	25050
	SRSS	1																	1722	22211
A77 F+	Max P	119	48																4844	16700
	GR + Max P	126	3616																2677	16700
	Cold to T1		359																13507	25050
	SRSS	1																	1722	22211
78	Max P	151	45																4844	16700
	GR + Max P	72	3532																2677	16700
	Cold to T1		336																13507	25050
	SRSS	1																	1614	22211
79	Max P	295	20																4844	16700
	GR + Max P	19	1546																3480	16700
	Cold to T1		0																5770	25050
	SRSS	1																	5096	22211
80	Max P	253	5																4844	16700
	GR + Max P	0	412																3275	16700
	Cold to T1		172																1539	25050
	SRSS	1																	1539	25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Code	Allow.
		In-Pt. Moment	Out-Pt. Moment	S.I.F.	Eq. Load			
A81	Max P	264	1	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3329	16700	
	Cold to T1			1.00	1.00 (17) DISP	411	25050	
	SRSS	0	46	1.00	1.00 (18) OCC	220	22211	
A82	Max P	261	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3315	16700	
	Cold to T1			1.00	1.00 (17) DISP	113	25050	
	SRSS	0	12	1.00	1.00 (18) OCC	59	22211	
A83	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3318	16700	
	Cold to T1			1.00	1.00 (17) DISP	42	25050	
	SRSS	0	3	1.00	1.00 (18) OCC	16	22211	
A84	Max P	261	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3317	16700	
	Cold to T1			1.00	1.00 (17) DISP	31	25050	
	SRSS	0	1	1.00	1.00 (18) OCC	4	22211	
A85	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3318	16700	
	Cold to T1			1.00	1.00 (17) DISP	30	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1	22211	
A86	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3318	16700	
	Cold to T1			1.00	1.00 (17) DISP	30	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1	22211	
A86	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3319	16700	
	Cold to T1			1.00	1.00 (17) DISP	46	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	1	22211	
A87	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3319	16700	
	Cold to T1			1.00	1.00 (17) DISP	92	25050	
	SRSS	0	0	1.00	1.00 (18) OCC	2	22211	
A88	Max P	261	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3319	16700	
	Cold to T1			1.00	1.00 (17) DISP	323	25050	
	SRSS	0	1	1.00	1.00 (18) OCC	7	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Code	Allow.
		In-Pt. Moment	Out-Pt. Moment	S.I.F.	Eq. Load			
A89	Max P	262	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3320	16700	
	Cold to T1			1.00	1.00 (17) DISP	242	25050	
	SRSS	0	5	1.00	1.00 (18) OCC	25	22211	
A90	Max P	261	0	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3315	16700	
	Cold to T1			1.00	1.00 (17) DISP	98	25050	
	SRSS	0	19	1.00	1.00 (18) OCC	95	22211	
A91	Max P	265	1	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3334	16700	
	Cold to T1			1.00	1.00 (17) DISP	162	25050	
	SRSS	0	73	1.00	1.00 (18) OCC	350	22211	
A92	Max P	250	3	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3265	16700	
	Cold to T1			1.00	1.00 (17) DISP	651	25050	
	SRSS	0	273	1.00	1.00 (18) OCC	1313	22211	
A93	Max P	304	12	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	3258	16700	
	Cold to T1			1.00	1.00 (17) DISP	2358	25050	
	SRSS	0	1026	1.00	1.00 (18) OCC	4923	22211	
A94	Max P	115	25	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	2628	16700	
	Cold to T1			1.00	1.00 (17) DISP	5718	25050	
	SRSS	0	679	1.00	1.00 (18) OCC	3258	22211	
A95 N-	Max P	86	26	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	2494	16700	
	Cold to T1			1.00	1.00 (17) DISP	6019	25050	
	SRSS	0	728	1.00	1.00 (18) OCC	3496	22211	
A95 N+	Max P	26	86	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	2628	16700	
	Cold to T1			1.00	1.00 (17) DISP	6019	25050	
	SRSS	0	728	1.00	1.00 (18) OCC	3496	22211	
A95 H	Max P	28	7	1.00	1.00 (18) HOOP	4844	16700	
	GR + Max P			1.00	1.00 (18) SUST	2201	16700	
	Cold to T1			1.00	1.00 (17) DISP	6472	25050	
	SRSS	0	869	1.00	1.00 (18) OCC	4175	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.
A95 F- Max P	GR + Max P	19	19		1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	1219	0		1.00	1.00	(18) SUST	2194	16700
	Cold to T1	757	0		1.00	1.00	(17) DISP	4551	25050
A95 F+ Max P	GR + Max P				1.00	1.00	(18) OCC	3635	22211
	GR + Max P	19	19		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1219		1.00	1.00	(17) DISP	2194	16700
A96 Max P	GR + Max P				1.00	1.00	(18) OCC	3635	22211
	GR + Max P	40	17		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1080		1.00	1.00	(17) DISP	2273	16700
A97 Max P	GR + Max P				1.00	1.00	(18) OCC	3440	22211
	GR + Max P	227	36		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	2076		1.00	1.00	(17) DISP	3169	16700
A98 Max P	GR + Max P				1.00	1.00	(18) OCC	1135	22211
	GR + Max P	225	31		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1675		1.00	1.00	(17) DISP	3155	16700
A99 Max P	GR + Max P				1.00	1.00	(18) OCC	1246	22211
	GR + Max P	47	16		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1012		1.00	1.00	(17) DISP	2502	16700
A100H- Max P	GR + Max P				1.00	1.00	(18) OCC	3638	22211
	GR + Max P	25	18		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1131		1.00	1.00	(17) DISP	2213	16700
A100H+ Max P	GR + Max P				1.00	1.00	(18) OCC	3847	22211
	GR + Max P	18	25		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	1131	0		1.00	1.00	(17) DISP	2213	16700
A100H Max P	GR + Max P				1.00	1.00	(18) OCC	3847	22211
	GR + Max P	25	6		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	1535	0		1.00	1.00	(17) DISP	2213	16700

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.
A100F- Max P	GR + Max P	23	81		1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	1385	0		1.00	1.00	(18) SUST	2574	16700
	Cold to T1	749	0		1.00	1.00	(17) DISP	5171	25050
A100F+ Max P	GR + Max P				1.00	1.00	(18) OCC	3595	22211
	GR + Max P	81	23		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1385		1.00	1.00	(17) DISP	5171	25050
A101 Max P	GR + Max P				1.00	1.00	(18) OCC	3595	22211
	GR + Max P	109	21		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	1304		1.00	1.00	(17) DISP	4870	25050
A102 Max P	GR + Max P				1.00	1.00	(18) OCC	3327	22211
	GR + Max P	274	14		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	809		1.00	1.00	(17) DISP	3383	25050
A103 Max P	GR + Max P				1.00	1.00	(18) OCC	5299	22211
	GR + Max P	207	6		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	189		1.00	1.00	(17) DISP	3019	25050
A104 Max P	GR + Max P				1.00	1.00	(18) OCC	1412	22211
	GR + Max P	225	1		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	49		1.00	1.00	(17) DISP	3142	16700
A105 Max P	GR + Max P				1.00	1.00	(18) OCC	376	22211
	GR + Max P	220	0		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	121		1.00	1.00	(17) DISP	3119	16700
A106 Max P	GR + Max P				1.00	1.00	(18) OCC	101	22211
	GR + Max P	221	0		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	34		1.00	1.00	(17) DISP	450	25050
A107 - Max P	GR + Max P				1.00	1.00	(18) OCC	4844	16700
	GR + Max P	221	0		1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	17		1.00	1.00	(17) DISP	3123	16700

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					Stress in psi	Code	Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F. In	Eq. Load Out			
A107	GR + Max P Cold to T1 SRSS	224 0	0	19	1.00 1.00 1.00	(18) (18) (18) D1SP	4844 3137 80	16700 16700 25050	2
A108	Max P GR + Max P Cold to T1 SRSS	215 19 0	0	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 3098 101	16700 16700 25050	4
A109	Max P GR + Max P Cold to T1 SRSS	240 66 0	0	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 3217 258	16700 16700 25050	15
A110	Max P GR + Max P Cold to T1 SRSS	148 245 0	0	12	1.00 1.00 1.00	(18) (18) (18) D1SP	4844 2777 57	16700 16700 25050	57
A111	Max P GR + Max P Cold to T1 SRSS	86 72 1	2 136 49	11	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2477 575	16700 16700 25050	235
A112	Max P GR + Max P Cold to T1 SRSS	120 280 0	2 233 83	11	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2638 1360	16700 16700 25050	400
I112	Max P GR + Max P Cold to T1 SRSS	184 107 1	3 293 231	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2449 1111	16700 16700 22211	1111
I113	Max P GR + Max P Cold to T1 SRSS	214 150 5	9 646 848	11	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 3092 2476	16700 16700 25050	4070
A113	Max P GR + Max P Cold to T1 SRSS	36 55 20	25 1760 284	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2274 4574	16700 16700 25050	1366

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					Stress in psi	Code	Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F. In	Eq. Load Out			
A114M	Max P GR + Max P Cold to T1 SRSS	20 52 17	27 1870 325	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2924 6983	16700 16700 25050	1562
A114H	Max P GR + Max P Cold to T1 SRSS	27 52 325	27 1870 325	3	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2924 6983	16700 16700 25050	1562
A114M	Max P GR + Max P Cold to T1 SRSS	31 2122 499	14 20 1	33	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2224 2793	16700 16700 25050	2354
A114F	Max P GR + Max P Cold to T1 SRSS	31 1702 547	114 23 15	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2629 6354	16700 16700 25050	2629
A114F	Max P GR + Max P Cold to T1 SRSS	115 122 16	24 1697 547	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2629 6354	16700 16700 25050	2629
A115	Max P GR + Max P Cold to T1 SRSS	150 117 13	22 1544 544	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2793 5856	16700 16700 25050	2613
A116	Max P GR + Max P Cold to T1 SRSS	93 40 5	24 1751 305	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2524 6541	16700 16700 25050	1849
A117N	Max P GR + Max P Cold to T1 SRSS	65 35 4	26 1885 376	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2400 5910	16700 16700 25050	1805
A117N	Max P GR + Max P Cold to T1 SRSS	26 1885 376	65 35 4	31	1.00 1.00 1.00	(18) (18) (17) D1SP	4844 2400 5910	16700 16700 25050	1805

Point name	Load combination	ASME B31.3c (1992)				CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F.	In	Out	no	type	Eq. Load	Stress	Code	Comment
A117M	Max P	32	14			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	2305	22			1.00	1.00	(17)	DISP	2332	16700		
	Cold to T1	317	3			1.00	1.00	(18)	OC	8605	25050		
A117F+	Max P	28	70			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	2053	4			1.00	1.00	(17)	DISP	2428	16700		
	Cold to T1	238	0			1.00	1.00	(18)	OC	7663	25050		
A117F+	Max P	70	28			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	2053	4			1.00	1.00	(17)	DISP	2428	16700		
	Cold to T1	0	238			1.00	1.00	(18)	OC	1144	22211		
A118	Max P	93	27			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	9	1944			1.00	1.00	(17)	DISP	2527	16700		
	Cold to T1	1	223			1.00	1.00	(18)	OC	7258	25050		
A119	Max P	329	16			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	2	1055			1.00	1.00	(17)	DISP	3644	16700		
	Cold to T1	0	580			1.00	1.00	(18)	OC	3937	25050		
A120	Max P	269	4			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	1	351			1.00	1.00	(17)	DISP	1305	25050		
	Cold to T1	0	155			1.00	1.00	(18)	OC	742	22211		
A121	Max P	285	1			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	19			1.00	1.00	(17)	DISP	3432	16700		
	Cold to T1	0	41			1.00	1.00	(18)	OC	591	25050		
A122	Max P	281	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	42			1.00	1.00	(17)	DISP	3411	16700		
	Cold to T1	0	11			1.00	1.00	(18)	OC	158	25050		
A123	Max P	282	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	11			1.00	1.00	(17)	DISP	3417	16700		
	Cold to T1	0	3			1.00	1.00	(18)	OC	142	25050		

Point name	Load combination	ASME B31.3c (1992)				CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	Torsion	S.I.F.	In	Out	no	type	Eq. Load	Stress	Code	Comment
A124	Max P	281	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	3			1.00	1.00	(17)	DISP	3411	16700		
	Cold to T1	0	1			1.00	1.00	(18)	OC	12	25050		
A125 -	Max P	282	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	2			1.00	1.00	(17)	DISP	3416	16700		
	Cold to T1	0	0			1.00	1.00	(18)	OC	2	22211		
A125 +	Max P	282	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	1			1.00	1.00	(17)	DISP	3415	16700		
	Cold to T1	0	1			1.00	1.00	(18)	OC	2	22211		
A126	Max P	281	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	1			1.00	1.00	(17)	DISP	3425	25050		
	Cold to T1	0	1			1.00	1.00	(18)	OC	5	22211		
A127	Max P	282	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	4			1.00	1.00	(17)	DISP	3416	16700		
	Cold to T1	0	4			1.00	1.00	(18)	OC	18	22211		
A128	Max P	281	0			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	0	15			1.00	1.00	(17)	DISP	3411	16700		
	Cold to T1	0	14			1.00	1.00	(18)	OC	66	22211		
A129	Max P	284	1			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	1	55			1.00	1.00	(17)	DISP	3427	16700		
	Cold to T1	0	51			1.00	1.00	(18)	OC	246	22211		
A130	Max P	272	4			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	4	206			1.00	1.00	(17)	DISP	3416	16700		
	Cold to T1	0	192			1.00	1.00	(18)	OC	921	22211		
A131	Max P	318	16			1.00	1.00	(18)	SUST	4844	16700		
	GR + Max P	16	1028			1.00	1.00	(17)	DISP	3592	16700		
	Cold to T1	0	720			1.00	1.00	(18)	OC	3838	25050		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F. In Out	Eq. Load no. type	Code Stress Allow.		
A132	Max P	133	34		1.00	1.00 (18)	4844	16700	
	GR + Max P	60	252		7	1.00 (17)	2722	16700	
	Cold to T1	1	352		1.00	1.00 (18)	9508	25050	
A133N-	Max P	103	36		1.00	1.00 (18)	4844	16700	
	GR + Max P	94	2675		7	1.00 (17)	2589	16700	
	Cold to T1	1	377		1.00	1.00 (18)	9993	25050	
A133N+	Max P	27	106		1.00	1.00 (18)	4844	16700	
	GR + Max P	2674	128		7	1.00 (17)	2589	16700	
	Cold to T1	376	31		1.00	1.00 (18)	9993	25050	
A133M	Max P	37	7		1.00	1.00 (18)	4844	16700	
	GR + Max P	2891	15		40	1.00 (17)	2242	16700	
	Cold to T1	484	24		1.00	1.00 (18)	9993	25050	
A133F-	Max P	26	18		1.00	1.00 (18)	4844	16700	
	GR + Max P	2168	150		28	1.00 (17)	2217	16700	
	Cold to T1	520	1		1.00	1.00 (18)	9993	25050	
A133F+	Max P	18	26		1.00	1.00 (18)	4844	16700	
	GR + Max P	150	2168		28	1.00 (17)	2217	16700	
	Cold to T1	526	1		1.00	1.00 (18)	9993	25050	
A134	Max P	40	23		1.00	1.00 (18)	4844	16700	
	GR + Max P	174	1955		0	1.00 (17)	2529	22211	
	Cold to T1	1	527		1.00	1.00 (18)	9993	25050	
I134	Max P	64	30		1.00	1.00 (18)	4844	16700	
	GR + Max P	174	1955		28	1.00 (17)	2320	16700	
	Cold to T1	527	1		1.00	1.00 (18)	9993	25050	
A135N-	Max P	22	33		1.00	1.00 (18)	4844	16700	
	GR + Max P	150	2168		28	1.00 (17)	2254	16700	
	Cold to T1	1	525		1.00	1.00 (18)	9993	25050	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F. In Out	Eq. Load no. type	Code Stress Allow.		
A135N+	Max P	33	22		1.00	1.00 (18)	4844	16700	
	GR + Max P	2168	150		28	1.00 (17)	2589	16700	
	Cold to T1	525	1		1.00	1.00 (18)	9993	25050	
A135M	Max P	42	7		1.00	1.00 (18)	4844	16700	
	GR + Max P	2892	15		40	1.00 (17)	2589	16700	
	Cold to T1	483	24		1.00	1.00 (18)	9993	25050	
A135F-	Max P	45	103		1.00	1.00 (18)	4844	16700	
	GR + Max P	2675	128		7	1.00 (17)	2602	16700	
	Cold to T1	375	31		1.00	1.00 (18)	9993	25050	
A135F+	Max P	106	36		1.00	1.00 (18)	4844	16700	
	GR + Max P	94	2676		7	1.00 (17)	2602	16700	
	Cold to T1	0	376		1.00	1.00 (18)	9993	25050	
A136	Max P	135	35		1.00	1.00 (18)	4844	16700	
	GR + Max P	60	2547		7	1.00 (17)	2571	16700	
	Cold to T1	1	352		1.00	1.00 (18)	9993	25050	
A137	Max P	318	15		1.00	1.00 (18)	4844	16700	
	GR + Max P	16	1038		7	1.00 (17)	3592	16700	
	Cold to T1	0	719		1.00	1.00 (18)	9993	25050	
A138	Max P	272	4		1.00	1.00 (18)	4844	16700	
	GR + Max P	4	207		7	1.00 (17)	3368	16700	
	Cold to T1	0	192		1.00	1.00 (18)	9993	25050	
A139	Max P	284	1		1.00	1.00 (18)	4844	16700	
	GR + Max P	1	55		7	1.00 (17)	3592	16700	
	Cold to T1	0	51		1.00	1.00 (18)	9993	25050	
A140	Max P	281	0		1.00	1.00 (18)	4844	16700	
	GR + Max P	0	15		7	1.00 (17)	3411	16700	
	Cold to T1	0	14		1.00	1.00 (18)	9993	25050	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F	Eq. Load	Code	Stress	Allow.
A141	Max P	282	0	4	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	4	7	1.00	1.00	(18) SUST	3416	16700
A142	Max P	281	0	1	1.00	1.00	(17) DI SP	3415	16700
	GR + Max P	0	1	7	1.00	1.00	(18) DI SP	3414	16700
A143	Max P	282	0	1	1.00	1.00	(18) OCC	5	22211
	GR + Max P	0	1	7	1.00	1.00	(17) DI SP	25	25050
A143 + Max P	Max P	282	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A143 + Max P	Max P	282	0	1	1.00	1.00	(17) DI SP	24	25050
	GR + Max P	0	1	7	1.00	1.00	(18) OCC	2	22211
A144	Max P	281	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A145	Max P	282	0	1	1.00	1.00	(17) DI SP	3414	16700
	GR + Max P	0	1	7	1.00	1.00	(18) OCC	2	22211
A146	Max P	281	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A147	Max P	282	0	1	1.00	1.00	(17) DI SP	397	25050
	GR + Max P	0	1	7	1.00	1.00	(18) OCC	9	22211
A148	Max P	281	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A149	Max P	282	0	1	1.00	1.00	(17) DI SP	378	25050
	GR + Max P	0	1	7	1.00	1.00	(18) OCC	32	22211
A150	Max P	281	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A151	Max P	282	0	1	1.00	1.00	(17) DI SP	397	25050
	GR + Max P	0	1	7	1.00	1.00	(18) OCC	9	22211
A152	Max P	281	0	1	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1	7	1.00	1.00	(18) SUST	3415	16700
A153	Max P	269	0	5	1.00	1.00	(17) DI SP	1216	25050
	GR + Max P	0	5	34	1.00	1.00	(18) OCC	452	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F	Eq. Load	Code	Stress	Allow.
A149	Max P	330	19	353	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1202	0	1.00	1.00	(18) SUST	3650	16700
A150	Max P	90	24	156	1.00	1.00	(17) DI SP	4468	25050
	GR + Max P	0	236	0	1.00	1.00	(18) OCC	1693	22211
A151M-	Max P	64	26	1697	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1697	0	1.00	1.00	(18) SUST	2394	16700
A151M+	Max P	26	64	245	1.00	1.00	(17) DI SP	6335	25050
	GR + Max P	0	245	0	1.00	1.00	(18) OCC	1177	22211
A151M	Max P	29	8	1941	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1941	0	1.00	1.00	(18) SUST	2209	16700
A151F-	Max P	26	40	1524	1.00	1.00	(17) DI SP	7245	25050
	GR + Max P	0	233	0	1.00	1.00	(18) OCC	1255	22211
A151F+	Max P	40	24	1569	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1569	0	1.00	1.00	(18) SUST	2289	16700
A152	Max P	64	22	1449	1.00	1.00	(17) DI SP	5859	25050
	GR + Max P	0	227	0	1.00	1.00	(18) OCC	1119	22211
A153	Max P	295	27	1624	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1624	0	1.00	1.00	(18) SUST	3484	16700
A154	Max P	295	27	1624	1.00	1.00	(17) DI SP	6324	25050
	GR + Max P	0	1624	0	1.00	1.00	(18) OCC	471	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	S.I.F. In	Eq. Load no. type	Code Stress	psi	Code Stress	psi
A154	Max P	96	10	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2527	16700		
	Cold to T1	0	670	0	1.00 1.00 (17) DISP	2501	25050		
	SRSS	0	242	1.00	1.00 (18) OCC	1163	22211		
A155	Max P	249	10	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	3260	16700		
	Cold to T1	0	570	0	1.00 1.00 (17) DISP	2127	25050		
	SRSS	0	598	1.00	1.00 (18) OCC	2872	22211		
A156	Max P	188	9	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2970	16700		
	Cold to T1	0	612	0	1.00 1.00 (17) DISP	2256	25050		
	SRSS	0	826	1.00	1.00 (18) OCC	3597	22211		
A157N-	Max P	147	10	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2774	16700		
	Cold to T1	0	658	0	1.00 1.00 (17) DISP	2457	25050		
	SRSS	0	860	1.00	1.00 (18) OCC	4130	22211		
A157N+	Max P	10	147	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2774	16700		
	Cold to T1	0	658	0	1.00 1.00 (17) DISP	2457	25050		
	SRSS	0	860	1.00	1.00 (18) OCC	4130	22211		
A157N	Max P	10	12	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2533	16700		
	Cold to T1	0	676	0	1.00 1.00 (17) DISP	2537	25050		
	SRSS	0	884	1.00	1.00 (18) OCC	4241	22211		
A157F-	Max P	4	49	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2303	16700		
	Cold to T1	0	286	0	1.00 1.00 (17) DISP	1067	25050		
	SRSS	0	587	1.00	1.00 (18) OCC	2818	22211		
A157F+	Max P	49	4	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2303	16700		
	Cold to T1	0	286	0	1.00 1.00 (17) DISP	1067	25050		
	SRSS	0	587	1.00	1.00 (18) OCC	2818	22211		
A159	Max P	37	4	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2244	16700		
	Cold to T1	0	206	0	1.00 1.00 (17) DISP	769	25050		
	SRSS	0	417	1.00	1.00 (18) OCC	2000	22211		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	S.I.F. In	Eq. Load no. type	Code Stress	psi	Code Stress	psi
A160N-	Max P	16	5	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2147	16700		
	Cold to T1	0	307	0	1.00 1.00 (17) DISP	1147	25050		
	SRSS	0	438	1.00	1.00 (18) OCC	2104	22211		
A160N+	Max P	5	16	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2147	16700		
	Cold to T1	0	307	0	1.00 1.00 (17) DISP	1147	25050		
	SRSS	0	438	1.00	1.00 (18) OCC	2104	22211		
A160M	Max P	11	20	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2174	16700		
	Cold to T1	0	697	0	1.00 1.00 (17) DISP	2603	25050		
	SRSS	0	672	1.00	1.00 (18) OCC	3224	22211		
A160F-	Max P	11	70	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2406	16700		
	Cold to T1	0	679	0	1.00 1.00 (17) DISP	2537	25050		
	SRSS	0	667	1.00	1.00 (18) OCC	3204	22211		
A160F+	Max P	70	11	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2537	16700		
	Cold to T1	0	679	0	1.00 1.00 (17) DISP	2537	25050		
	SRSS	0	667	1.00	1.00 (18) OCC	3204	22211		
A161	Max P	100	10	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	2546	16700		
	Cold to T1	0	630	0	1.00 1.00 (17) DISP	2366	25050		
	SRSS	0	630	1.00	1.00 (18) OCC	3028	22211		
A162	Max P	250	6	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	3265	16700		
	Cold to T1	0	369	0	1.00 1.00 (17) DISP	1376	25050		
	SRSS	0	522	1.00	1.00 (18) OCC	2505	22211		
A163 - Max P	Max P	308	3	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	3541	16700		
	Cold to T1	0	184	0	1.00 1.00 (17) DISP	695	25050		
	SRSS	0	260	1.00	1.00 (18) OCC	1248	22211		
A163 + Max P	Max P	332	7	1.00	(3a) HOOP	4844	16700		
	GR + Max P			1.00	1.00 (18) SUST	3658	16700		
	Cold to T1	0	495	0	1.00 1.00 (17) DISP	1847	25050		
	SRSS	0	0	1.00	1.00 (18) OCC	0	22211		

TRAN-SL PROJECT H-320 ES-320-M5, Rev. M5 M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPRINT=4.00 RESULT PAGE 168

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Eq. Load no. type	Code	Stress Allow.
		In-Pt. Moment	Out-Pt. Moment	Torsion Moment	S.I.F. In Out				
A164	Max P GR + Max P Cold to T1 SRSS	200 0 0 0	14 3027 3707	0 16700 16700	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A165	Max P GR + Max P Cold to T1 SRSS	132 0 0 0	21 1536 25050	4844 16700 25050	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A166H-	Max P GR + Max P Cold to T1 SRSS	97 0 0 0	23 1685 25050	4844 16700 2539	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A166H+	Max P GR + Max P Cold to T1 SRSS	23 0 0 0	97 1685 25050	4844 16700 2539	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A166H	Max P GR + Max P Cold to T1 SRSS	26 0 0 0	36 1883 25050	4844 16700 2271	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A166F-	Max P GR + Max P Cold to T1 SRSS	13 0 0 0	32 945 25050	4844 16700 2230	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A166F+	Max P GR + Max P Cold to T1 SRSS	32 0 0 0	13 945 25050	4844 16700 2230	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A168	Max P GR + Max P Cold to T1 SRSS	91 0 0 0	6 407 25050	4844 16700 2502	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A169H-	Max P GR + Max P Cold to T1 SRSS	64 0 0 0	9 667 25050	4844 16700 2490	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211

*** Segment A end ***

TRAN-SL PROJECT H-320 ES-320-M5, Rev. M5 M6 ICF Kaiser Hanford Company
09/06/96 SLURRY LINE PROCESS PIPE REV. 2 AUTOPRINT=4.00 RESULT PAGE 169

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Eq. Load no. type	Code	Stress Allow.
		In-Pt. Moment	Out-Pt. Moment	Torsion Moment	S.I.F. In Out				
A169H+	Max P GR + Max P Cold to T1 SRSS	9 0 0 0	64 -667 25050	4844 16700 2490	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A169H	Max P GR + Max P Cold to T1 SRSS	22 0 0 0	28 1606 25050	4844 16700 2502	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A169F-	Max P GR + Max P Cold to T1 SRSS	19 0 0 0	12 1408 25050	4844 16700 2539	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A169F+	Max P GR + Max P Cold to T1 SRSS	12 0 0 0	19 1408 25050	4844 16700 2539	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A170	Max P GR + Max P Cold to T1 SRSS	35 0 0 0	17 1259 25050	4844 16700 2269	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211
A171	Max P GR + Max P Cold to T1 SRSS	112 0 0 0	15 1045 25050	4844 16700 2502	1.00 1.00 (18) OCC 1.00 1.00 (17) DISP 1.00 1.00 (18) OCC	4844 2539 3274	(3a) HOOP (18) SUST (17) DISP	16700 16700 25050	0 22211 22211

SYSTEM SUMMARY

Maximum displacements (in)

Maximum X : -1.861
Maximum Y : 0.908
Maximum Z : 0.590
Max. total: 2.574

Point : A43 M
Point : A43 M
Point : A43 M
Point : A43 M

Maximum rotations (deg)

Maximum X : 0.268
Maximum Y : 0.246
Maximum Z : 0.246
Max. total: 1.249

Point : A44
Point : A44
Point : A42
Point : A76

Maximum restraint forces(lb)

Maximum X : 1047
Maximum Y : 532
Maximum Z : 1218
Max. total: 1322

Point : A00
Point : A41
Point : A01
Point : A01

Maximum restraint moments(ft.-lb)

Maximum X : 223
Maximum Y : 1490
Maximum Z : -437
Max. total: 1568

Point : A00
Point : A00
Point : A00
Point : A00

SYSTEM SUMMARY

Maximum sustained stress

Point : A41
Stress psi : 8128
Allowable psi : 16700
Ratio : 0.49
Load combination : GR + Max P

Maximum displacement stress

Point : A43 M
Stress psi : 16758
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

Maximum occasional stress

Point : A102
Stress psi : 22211
Allowable psi : 22211
Ratio : 0.24
Load combination : SNRS

Maximum hoop stress

Point : A00
Stress psi : 4944
Allowable psi : 16700
Ratio : 0.29
Load combination : Max P

Maximum sustained stress ratio

Point : A41
Stress psi : 8128
Allowable psi : 16700
Ratio : 0.49
Load combination : GR + Max P

Maximum displacement stress ratio

Point : A43 M
Stress psi : 16758
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

SYSTEM SUMMARY

Maximum occasional stress ratio

Point : A102
 Stress : 5299
 Allowable psi : 22211
 Ratio : 0.24
 Load combination : SRSS

Maximum hoop stress ratio

Point : A00
 Stress : 4844
 Allowable psi : 16700
 Ratio : 0.29
 Load combination : Max P

*** The system satisfies ASME B31.3 code requirements ***
 *** for the selected options ***

Max occasional stress: $S_{UST} + S_{EISMIC}$

$$8128 \text{ psi} + 5299 \text{ psi} = 13427 \text{ psi}$$

$$\text{Ratio} = 0.60$$

Rev.3

11/18/97

3.12.96

APPENDIX B

SUPERNATE LINE PROCESS PIPE

POINT DATA LISTING

POINT NAME TYPE X Y Z PIPE ID DESCRIPTION

*** SEGMENT A
A00 Run -6.62 0 0 0 PIPE-1
A01 Run -8.67 0 0 0
A02 Run -1.50 0 0 0
A03 Bend
Elbow, Radius = 40.00 inch
Bend angle change = 45.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A04 Run -1.06 0 1.06
A05 Run -7.78 0 7.78
A06 Run -7.78 0 7.78
A07 Run -7.78 0 7.78
A08 Run -7.78 0 7.78
A09 Run -3.06 0 3.06
A10 Bend -2.71 0 2.71
Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A11 Run -2.71 0 -2.71
A12 Run -6.13 0 -6.13
A13 Run -8.49 0 -8.48
A14 Run -8.48 0 -8.48
A15 Run -8.48 0 -8.48
A16 Run -8.48 0 -8.48
A17 Run -8.48 0 -8.48
A18 Run -8.48 0 -8.48
A19 Run -8.48 0 -8.48
A20 Run -8.48 0 -8.48
A21 Run -8.48 0 -8.48
A22 Run -6.13 0 -6.13
A23 Bend -2.71 0 -2.71
Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A25 Run 3.66 0 -3.66
A26 Bend 2.71 0 -2.71
Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A27 Run -2.71 0.46 -2.71

POINT DATA LISTING

POINT NAME TYPE X Y Z PIPE ID DESCRIPTION

A28 Run -5.83 0.98 -5.83
A29 Run -8.93 1.50 -8.93
A30 Run -8.93 1.50 -8.93
A31 Run -5.83 0.98 -5.83
A32 Bend -2.71 0.46 -2.71
Elbow, Radius = 40.00 inch
Bend angle change = 89.98 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A33 Run -2.71 0 2.71
A34 Run -2.30 0 2.30
A35 Bend -2.71 0 2.71
Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A36 Run -2.71 0 -2.71
A37 Run -6.94 0 -6.94
A38 Run -8.49 0 -8.48
A39 Run -8.49 0 -8.48
A40 Run -8.49 0 -8.48
A41 Run -8.49 0 -8.49
A42 Run -8.41 0 -8.41
A43 Bend -1.06 0 -1.06
Elbow, Radius = 40.00 inch
Bend angle change = 44.96 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A44 Run 0 0 -1.50
A45 Run 0 0 -13.01
A46 Run 0 0 -13.50
A47 Run 0 0 -13.50
A48 Run 0 0 -12.75
A49 Run 0 0 -12.75
A50 Run 0 0 -12.75
A51 Run 0 0 -12.75
A52 Run 0 0 -12.75
A53 Run 0 0 -12.75
A54 Run 0 0 -12.75
A55 Bend 0 0 -3.63
Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Z		
A56	Run	-3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A57	Run	-7.34	0	0	
A57	Bend	-3.83	0	0	
A58	Run	0	0	-3.83	
A59	Run	0	0	-13.44	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A60	Run	0	0	-13.33	
A61	Run	0	0	-13.33	
A62	Run	0	0	-13.33	
A63	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A64	Run	0	0	-13.33	
A65	Run	0	0	-13.33	
A66	Run	0	0	-13.33	
A67	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A68	Run	0	0	-13.33	
A69	Run	0	0	-13.33	
A70	Run	0	0	-13.33	
A71	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A72	Run	0	0	-13.33	
A73	Run	0	0	-13.33	
A74	Run	0	0	-13.44	
A75	Bend	0	0	-3.83	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A76	Run	-3.83	0.38	0	
A77	Run	-7.34	0.73	0	
A77	Bend	-3.83	0.38	0	
A78	Run	0	0	-3.83	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A79	Run	0	0	-13.44	
A80	Run	0	0	-13.33	
A81	Run	0	0	-13.33	
A82	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A83	Run	0	0	-13.33	
A84	Run	0	0	-13.33	
A85	Run	0	0	-13.33	
A86	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A87	Run	0	0	-13.33	

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Z		
A88	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A89	Run	0	0	-13.33	
A90	Run	0	0	-13.33	
A91	Run	0	0	-13.33	
A92	Run	0	0	-13.33	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A93	Run	0	0	-13.33	
A94	Run	0	0	-13.33	
A95	Bend	0	0	-3.83	
A96	Run	-3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A97	Run	-11.25	0	0	
A98	Run	-11.84	0	0	
A99	Run	-11.25	0	0	
A100	Bend	-3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A101	Run	0	0	-3.83	
A102	Run	0	0	-13.00	
A103	Run	0	0	-12.25	
A104	Run	0	0	-12.25	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A105	Run	0	0	-12.25	
A106	Run	0	0	-12.25	
A107	Run	0	0	-12.25	
A108	Run	0	0	-12.25	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A109	Run	0	0	-12.25	
A110	Run	0	0	-12.25	
A111	Run	0	0	-2.88	
A112	Run	0	0	-1.66	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A113	Run	0	0.72	-11.00	
A114	Run	0	0.72	-11.00	
A114	Bend	0	0.22	-3.83	
A115	Run	3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A116	Run	12.34	0	0	
A117	Bend	3.83	0	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A117	Bend	3.83	0	0	

POINT DATA LISTING

POINT NAME	TYPE	-----OFFSETS (ft)-----			PIPE ID	DESCRIPTION
		X	Y	Z		
SIF - In 1.00, Out = 1.00 Flex = 1.000						
A118	Run	0	0	-3.83		
A119	Run	0	0	-13.74		
A120	Run	0	0	-13.83		
A121	Run	0	0	-13.83		
A122	Run	0	0	-13.83		
A123	Run	0	0	-13.83		
A124	Run	0	0	-13.83		
A125	Run	0	0	-13.83		
A126	Run	0	0	-13.83		
A127	Run	0	0	-13.83		
A128	Run	0	0	-13.83		
A129	Run	0	0	-13.83		
A130	Run	0	0	-13.83		
A131	Run	0	0	-13.83		
A132	Run	0	0	-13.74		
A133	Bend	0	0	-3.83		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A134	Run	-3.83	0.37	0		
A134	Run	-9.34	0.91	0		
A135	Bend	-3.83	0.37	0		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A136	Run	0	0	-3.83		
A137	Run	0	0	-13.75		
A138	Run	0	0	-13.83		
A139	Run	0	0	-13.83		
A140	Run	0	0	-13.83		
A141	Run	0	0	-13.83		
A142	Run	0	0	-13.83		
A143	Run	0	0	-13.83		
A144	Run	0	0	-13.83		
A145	Run	0	0	-13.83		
A146	Run	0	0	-13.83		
A147	Run	0	0	-13.83		
A148	Run	0	0	-13.83		
A149	Run	0	0	-13.83		
A150	Run	0	0	-13.75		
A151	Bend	0	0	-3.83		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg						

POINT DATA LISTING

POINT NAME	TYPE	-----OFFSETS (ft)-----			PIPE ID	DESCRIPTION
		X	Y	Z		
Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A152	Run	-3.83	0	0		
A153	Run	-13.00	0	0		
A154	Run	-5.88	0	0		
A155	Run	-7.12	0	0		
A156	Run	-13.82	0	0		
A157	Bend	-3.83	0	0		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A159	Run	0	0	-6.75		
A160	Bend	0	0	-3.83		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A161	Run	-3.83	0	0		
A162	Run	-9.92	0	0		
A163	Run	-14.00	0	0		
A164	Run	-14.00	0	0		
A165	Bend	-4.50	0	0		
Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000						
A166	Run	0	0	3.83		
A167	Run	0	0	6.17		

Total weight of empty pipes : 19324 lb

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
*** SEGMENT A	X Y Z		
A00	0.00	0.00	0.00 ANCHOR Thermal movements : None
A01	-6.62	0.00	0.00 GUIDE ID : A01 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A02	-15.29	0.00	0.00 INCLIN ID : A02 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A03 N	-15.41	0.00	0.00 Thermal 1
A03	-16.79	0.00	0.00 T1
A03 M	-16.68	0.00	0.25
A03 F	-17.77	0.00	0.98
A04	-17.85	0.00	1.06 INCLIN ID : A04 2, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A05	-25.63	0.00	8.84 GUIDE ID : A04 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A06	-33.41	0.00	16.62 GUIDE ID : A05 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.15, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A07	-41.19	0.00	24.40 GUIDE ID : A06 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A08	-48.97	0.00	32.18 GUIDE ID : A06 2, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
*** SEGMENT B	X Y Z		
A085	-53.20	0.00	36.41 DISPL Gaps set Weightless
A09	-56.26	0.00	39.47 INCLIN ID : A09 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A10 N	-56.61	0.00	39.82 Thermal 1
A10	-58.97	0.00	42.18 T1
A10 M	-58.97	0.00	40.80
A10 F	-61.33	0.00	39.82
A11	-61.68	0.00	39.47 INCLIN ID : A11 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A12	-67.81	0.00	33.34 GUIDE ID : A12 2, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A13	-76.30	0.00	24.86 GUIDE ID : A13 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A14	-84.78	0.00	16.38 DISPL Thermal 1
			ID : A14 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A15	-93.26	0.00	7.90 GUIDE ID : A15 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A16	-101.74	0.00	-0.58 GUIDE ID : A16 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A17	-110.22	0.00	-9.06 ANCHOR
A18	-118.71	0.00	-17.54 GUIDE
A19	-127.19	0.00	-26.02 GUIDE
A20	-135.67	0.00	-34.51 GUIDE
A21	-144.16	0.00	-42.99 GUIDE
A22	-150.29	0.00	-49.13 INCLIN
A23 N	-150.64	0.00	-49.48
A23 M	-151.62	0.00	-51.84 TI
A23 F	-150.64	0.00	-54.19
A25	-149.34	0.00	-55.50 INCLIN
A26 N	-148.99	0.00	-55.85
A26 M	-146.63	0.00	-58.21 TI
A26 F	-148.01	0.12	-58.20
A26 F	-148.97	0.40	-60.55

Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

Thermal movements : None

ID : A18 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A19 1, Connected to Ground
Stiffness = RIGID, Above = 0.06 inch
Gap-Down = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A20 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A21 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A22 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

ID : A24 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A27	-149.34	0.46	-60.91 INCLIN
A28	-155.17	1.44	-66.74 GUIDE
A29	-164.10	2.94	-75.67 GUIDE
A30	-173.03	4.44	-84.60 GUIDE
A31	-178.86	5.43	-90.43 INCLIN
A32 N	-179.23	5.49	-90.80
A32 M	-181.57	5.89	-93.14 TI
A32 F	-181.57	5.77	-91.77
A33	-183.93	5.89	-90.79
A33	-184.28	5.69	-90.44 INCLIN
A34	-186.58	5.89	-88.14 INCLIN
A35 N	-186.93	5.89	-87.78
A35 M	-189.29	5.89	-85.43 TI
A35 M	-189.29	5.89	-86.81

ID : A27 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

ID : A28 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A29 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A30 1, Connected to Ground
Stiffness = RIGID
Gap-Down = 0.00, Above = 0.06 inch
Gap-Left = 0.06, Right = 0.06 inch
Friction = 0.15
Gaps set Weightless

ID : A31 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

ID : A33 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

ID : A34 1, Connected to Ground
Along global Y direction
Stiffness = RIGID
Gap-Minus = 0.00, Plus = 0.12 inch
Friction = 0.15
Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A35 F	-191.64	5.89 -87.78	ID : A36 1, Connected to Ground
A36	-191.99	5.89 -88.13 INCLIN	Along global y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
A37	-198.93	5.89 -95.07 GUIDE	Gaps set Weightless
			ID : A37 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
A38	-207.42	5.89 -103.56 GUIDE	Gaps set Weightless
			ID : A38 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
A39	-215.90	5.89 -112.04 ANCHOR	Gaps set Weightless
			Rigid
			Thermal movements : None
A40	-224.39	5.89 -120.53 GUIDE	ID : A39 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
A41	-232.87	5.89 -129.01 GUIDE	Gaps set Weightless
			ID : A41 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A42 N	-241.28	5.89 -137.42	ID : A42 1, Connected to Ground
A43	-242.34	5.89 -138.28 TI	Stiffness = RIGID
A43 M	-242.09	5.89 -138.58	Gap-down = 0.00, Above = 0.06 inch
A43 F	-242.34	5.89 -139.86	Gap-left = 0.06, Right = 0.06 inch
A44	-242.34	5.89 -139.98	Friction = 0.15
A45	-242.34	5.89 -152.99 GUIDE	Gaps set Weightless
			ID : A45 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
A46	-242.34	5.89 -166.49 GUIDE	Gaps set Weightless
			ID : A46 1, Connected to Ground
			Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
A47	-242.34	5.89 -179.99 GUIDE	ID : A47 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A48	-242.34	5.89 -192.74 GUIDE	ID : A48 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A49	-242.34	5.89 -205.49 ANCHOR	Gaps set Weightless
			Rigid
			Thermal movements : None
A50	-242.34	5.89 -218.24 GUIDE	ID : A50 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A51	-242.34	5.89 -230.99 GUIDE	ID : A51 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A52	-242.34	5.89 -243.74 GUIDE	ID : A52 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A53	-242.34	5.89 -256.49 GUIDE	ID : A53 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
153	-242.34	5.89 -269.24 GUIDE	ID : A53 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 MODEL PAGE 15

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA Z	DESCRIPTION
A54	-242.34	5.89 -282.49	INCLIN ID : A54 1, Connected to Ground Gaps set Weightless Stiffness = RIGID Along global Y direction Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A55 N	-242.34	5.89 -282.99	INCLIN ID : A56 1, Connected to Ground Stiffness = RIGID Along global Y direction Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A55 M	-242.34	5.89 -286.32	TI
A55 M	-243.32	5.89 -285.34	TI
A55 F	-245.67	5.89 -286.32	TI
A56	-246.17	5.89 -286.32	INCLIN ID : A56 1, Connected to Ground Stiffness = RIGID Along global Y direction Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
156	-253.51	5.89 -286.32	INCLIN ID : 156 1, Connected to Ground Stiffness = RIGID Along global Y direction Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A57 N	-254.01	5.89 -286.32	TI
A57 M	-257.34	5.89 -286.32	TI
A57 M	-256.36	5.89 -287.30	TI
A57 F	-257.34	5.89 -289.65	TI
A58	-257.34	5.89 -290.15	INCLIN ID : A58 1, Connected to Ground Stiffness = RIGID Along global Y direction Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A59	-257.34	5.89 -303.59	GUIDE ID : A59 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A60	-257.34	5.89 -316.92	GUIDE ID : A60 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A61	-257.34	5.89 -330.25	GUIDE ID : A61 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 MODEL PAGE 16

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA Z	DESCRIPTION
A62	-257.34	5.89 -343.58	GUIDE ID : A62 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A63	-257.34	5.89 -356.91	GUIDE ID : A63 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A64	-257.34	5.89 -370.24	GUIDE ID : A64 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A65	-257.34	5.89 -383.57	GUIDE ID : A65 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A66	-257.34	5.89 -396.90	ANCHOR ID : A66 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A67	-257.34	5.89 -410.23	GUIDE ID : A67 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A68	-257.34	5.89 -423.56	GUIDE ID : A68 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A69	-257.34	5.89 -436.89	GUIDE ID : A69 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A70	-257.34	5.89 -450.22	GUIDE ID : A70 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch

COMPONENT DATA LISTING

POINT NAME	---X---	COORDINATE(ft Y Z)	DATA TYPE	DESCRIPTION
				Stiffness = RIGID
				Gap-Minus = 0.00, Plus = 0.12 inch
				Friction = 0.15
				Gaps set Weightless
A79	-272.34	7.39 - 524.75 GUIDE		ID : A79 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A80	-272.34	7.39 - 538.08 GUIDE		ID : A80 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A81	-272.34	7.39 - 551.41 GUIDE		ID : A81 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A82	-272.34	7.39 - 564.74 GUIDE		ID : A82 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A83	-272.34	7.39 - 578.07 GUIDE		ID : A83 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A84	-272.34	7.39 - 591.40 GUIDE		ID : A84 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A85	-272.34	7.39 - 604.73 GUIDE		ID : A85 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A86	-272.34	7.39 - 618.06 ANCHOR		ID : A86 1, Connected to Ground
				Stiffness = RIGID
				Gap-Down = 0.00, Above = 0.06 inch
				Gap-Left = 0.06, Right = 0.06 inch
				Friction = 0.15
				Gaps set Weightless
A87	-272.34	7.39 - 631.39 GUIDE		ID : A87 1, Connected to Ground
				Thermal movements : None

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA	DESCRIPTION	
					Gap-left = 0.06, Right = 0.06 inch	
					Friction = 0.15	
					Gaps set Weightless	
A71	-257.34	5.89	-463.55	GUIDE	ID : A71 1, Connected to Ground	
					Stiffness = RIGID	
					Gap-down = 0.00, Above = 0.06 inch	
					Friction = 0.15	
					Gap-left = 0.06, Right = 0.06 inch	
					Friction = 0.15	
					Gaps set Weightless	
A72	-257.34	5.89	-476.88	GUIDE	ID : A72 1, Connected to Ground	
					Stiffness = RIGID	
					Gap-down = 0.00, Above = 0.06 inch	
					Friction = 0.15	
					Gap-left = 0.06, Right = 0.06 inch	
					Friction = 0.15	
					Gaps set Weightless	
A73	-257.34	5.89	-490.21	GUIDE	ID : A73 1, Connected to Ground	
					Stiffness = RIGID	
					Gap-down = 0.00, Above = 0.06 inch	
					Gap-left = 0.06, Right = 0.06 inch	
					Friction = 0.15	
					Gaps set Weightless	
A74	-257.34	5.89	-503.65	INCLIN	ID : A74 1, Connected to Ground	
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A75	-257.34	5.89	-504.15	INCLIN	ID : A75 1, Connected to Ground	
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A76	-257.34	5.89	-507.48	INCLIN	ID : A76 1, Connected to Ground	
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A77	-268.51	7.00	-507.48	INCLIN	ID : A77 1, Connected to Ground	
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A78	-268.51	7.00	-507.48	INCLIN	ID : A78 1, Connected to Ground	
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A77	N	-269.02	7.39	-507.48	INCLIN	ID : A77 1, Connected to Ground
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A77	M	-271.37	7.29	-508.46	INCLIN	ID : A77 1, Connected to Ground
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A77	F	-272.34	7.39	-510.81	INCLIN	ID : A77 1, Connected to Ground
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	
A78	N	-272.34	7.39	-511.31	INCLIN	ID : A78 1, Connected to Ground
					Along global Y direction	
					Stiffness = RIGID	
					Gap-Minus = 0.00, Plus = 0.12 inch	
					Friction = 0.15	
					Gaps set Weightless	

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
	X Y Z		
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A88	-272.34	7.39 -644.72 GUIDE	ID : A88 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A89	-272.34	7.39 -658.05 GUIDE	ID : A89 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A90	-272.34	7.39 -671.38 GUIDE	ID : A90 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A91	-272.34	7.39 -684.71 GUIDE	ID : A91 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A92	-272.34	7.39 -698.04 GUIDE	ID : A92 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A93	-272.34	7.39 -711.37 GUIDE	ID : A93 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A94	-272.34	7.39 -724.81 INCLIN	ID : A94 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
	X Y Z		
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A95 N	-272.34	7.39 -725.31	ID : A96 1, Connected to Ground
A95 M	-272.34	7.39 -728.64 TI	Along global Y direction
A95 F	-272.34	7.39 -727.66	Stiffness = RIGID
A96	-276.17	7.39 -728.64 INCLIN	ID : A96 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A97	-287.42	7.39 -728.64 GUIDE	ID : A97 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A98	-299.26	7.39 -728.64 DISPL	ID : A98 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A99	-310.51	7.39 -728.64 INCLIN	ID : A99 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A100 N	-311.01	7.39 -728.64	ID : A101 1, Connected to Ground
A100 M	-314.34	7.39 -728.64 TI	Along global Y direction
A100 F	-314.34	7.39 -727.66	Stiffness = RIGID
A101	-314.34	7.39 -732.47 INCLIN	ID : A101 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A102	-314.34	7.39 -745.47 GUIDE	ID : A102 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)	X	Y	Z	DATA TYPE	DESCRIPTION
A103	-314.34	7.39	-757.72	GUIDE	DISPL	Thermal 1 ID : A103 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A104	-314.34	7.39	-769.97	GUIDE	DISPL	ID : A104 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A105	-314.34	7.39	-782.22	GUIDE	DISPL	ID : A105 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A106	-314.34	7.39	-794.47	GUIDE	DISPL	ID : A106 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A107	-314.34	7.39	-806.72	ANCHOR	Thermal 1	Thermal movements : None
A108	-314.34	7.39	-818.97	GUIDE	DISPL	ID : A108 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A109	-314.34	7.39	-831.22	GUIDE	DISPL	ID : A109 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A110	-314.34	7.39	-843.47	GUIDE	DISPL	ID : A110 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A111	-314.34	7.39	-846.35			
A112	-314.34	7.49	-847.97	GUIDE	ID : A112 1, Connected to Ground	

COMPONENT DATA LISTING

POINT NAME	X	COORDINATE(ft)	Y	Z	DATA TYPE	DESCRIPTION
1112	-314.34	8.21	-858.97	GUIDE	DISPL	Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless ID : 1112 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : 1113 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
1113	-314.34	8.93	-869.97	GUIDE	DISPL	Thermal 1 ID : 1113 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A113	-314.34	9.66	-880.97	INCLIN	DISPL	ID : A113 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A114N	-314.34	9.68	-881.47			
A114	-314.34	9.88	-884.80	TI		
A114M	-313.36	9.82	-883.82			
A114F	-311.01	9.88	-884.80			
A115	-310.51	9.88	-884.80	INCLIN	ID : A115 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless	
A116	-298.17	9.88	-884.80	INCLIN	ID : A116 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless	
A117N	-297.67	9.88	-884.80			
A117	-294.34	9.88	-884.80	TI		
A117M	-295.32	9.88	-883.78			
A117F	-294.34	9.88	-888.13			
A118	-294.34	9.88	-888.63	INCLIN	ID : A118 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless	

TRAN-SP PROJECT M-320 ES-320-M5, M4, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 MODEL PAGE 23

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A119	-294.34	9.88	-902.37	GUIDE	Friction = 0.15 Gaps set Weightless ID : A119 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A120	-294.34	9.88	-916.20	GUIDE	DISPL ID : A120 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A121	-294.34	9.88	-930.03	GUIDE	DISPL ID : A121 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A122	-294.34	9.88	-943.86	GUIDE	Gaps set Weightless ID : A122 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A123	-294.34	9.88	-957.69	GUIDE	Gaps set Weightless ID : A123 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A124	-294.34	9.88	-971.52	GUIDE	Gaps set Weightless ID : A124 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A125	-294.34	9.88	-985.35	ANCHOR	Thermal movements : None ID : A125 1, Connected to Ground Stiffness = RIGID
A126	-294.34	9.88	-999.18	GUIDE	Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A127	-294.34	9.88	-1013.01	GUIDE	Gaps set Weightless ID : A127 1, Connected to Ground

TRAN-SP PROJECT M-320 ES-320-M5, M4, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 MODEL PAGE 24

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A128	-294.34	9.88	-1026.84	GUIDE	Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless ID : A128 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A129	-294.34	9.88	-1040.67	GUIDE	Gaps set Weightless ID : A129 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A130	-294.34	9.88	-1054.50	GUIDE	Gaps set Weightless ID : A130 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A131	-294.34	9.88	-1068.33	GUIDE	Gaps set Weightless ID : A131 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A132	-294.34	9.88	-1082.07	INCLIN	DISPL ID : A132 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A133M	-294.34	9.88	-1082.57		
A133	-294.34	9.88	-1085.90		
A133M	-295.31	9.97	-1084.92	TI	
A133F	-297.66	10.20	-1085.90		
A134	-298.17	10.25	-1085.90	INCLIN	ID : A134 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
I134	-307.51	11.16	-1085.90	INCLIN	ID : I134 1, Connected to Ground Along global Y direction Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A151N	-311.34	11.54-1287.69			Gaps set Weightless
A151	-311.34	11.54-1287.02	TI		Stiffness = RIGID
A151M	-312.32	11.54-1286.04			Gap-Left = 0.00, Above = 0.06 inch
A151F	-314.67	11.54-1287.02			Gap-Left = 0.06, Right = 0.06 inch
A152	-315.17	11.54-1287.02	INCLIN	ID : A152.1	Connected to Ground
					Along global Y direction
					Stiffness = RIGID
					Gap-Left = 0.00, Plus = 0.12 inch
					Friction = 0.15
A153	-328.17	11.54-1287.02	GUIDE	ID : A153.1	Connected to Ground
					Stiffness = RIGID
					Gap-Down = 0.00, Above = 0.06 inch
					Gap-Left = 0.06, Right = 0.06 inch
					Friction = 0.15
					Gaps set Weightless
					Thermal 1
A154	-334.05	11.54-1287.02	DISPL		
A155	-341.17	11.54-1287.02	GUIDE	ID : A155.1	Connected to Ground
					Stiffness = RIGID
					Gap-Down = 0.00, Above = 0.06 inch
					Gap-Left = 0.06, Right = 0.06 inch
					Friction = 0.15
					Gaps set Weightless
A156	-355.05	11.54-1287.02	INCLIN	ID : A156.1	Connected to Ground
					Along global Y direction
					Stiffness = RIGID
					Gap-Minus = 0.00, Plus = 0.12 inch
					Friction = 0.15
					Gaps set Weightless
A157N	-355.55	11.54-1287.02			
A157	-358.88	11.54-1287.02	TI		
A157M	-357.90	11.54-1288.00			
A157F	-358.88	11.54-1290.35			
A159	-358.88	11.54-1293.77	INCLIN	ID : A159.1	Connected to Ground
					Along global Y direction
					Stiffness = RIGID
					Gap-Minus = 0.00, Plus = 0.12 inch
					Friction = 0.15
					Gaps set Weightless
A160N	-358.88	11.54-1294.27			
A160	-358.88	11.54-1297.60	TI		
A160M	-359.86	11.54-1296.62			
A160F	-360.84	11.54-1298.11			
A161	-362.71	11.54-1297.60	INCLIN	ID : A161.1	Connected to Ground
					Along global Y direction
					Stiffness = RIGID
					Gap-Minus = 0.00, Plus = 0.12 inch
					Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A162	-372.63	11.54-1297.60	GUIDE		Gaps set Weightless
					Stiffness = RIGID
					Gap-Left = 0.00, Above = 0.06 inch
					Gap-Left = 0.06, Right = 0.06 inch
					Friction = 0.15
A163	-386.63	11.54-1297.60	ANCHOR		Gaps set Weightless
					Rigid
A164	-400.63	11.54-1297.60	GUIDE		Thermal movements : None
					ID : A164.1
					Stiffness = RIGID
					Gap-Down = 0.00, Above = 0.06 inch
					Gap-Left = 0.06, Right = 0.06 inch
					Friction = 0.15
					Gaps set Weightless
					Thermal 1
A165N	-401.80	11.54-1297.60	DISPL		
A165	-405.13	11.54-1297.60	TI		
A165M	-404.15	11.54-1296.62			
A165F	-405.13	11.54-1294.27			
A166	-405.13	11.54-1293.77	INCLIN	ID : A167.1	Connected to Ground
					Along global Y direction
					Stiffness = RIGID
					Gap-Minus = 0.00, Plus = 0.12 inch
					Friction = 0.15
					Gaps set Weightless
A167	-405.13	11.54-1287.60	ANCHOR		Rigid
					Thermal movements : None

Number of points in the system : 236

TRAN-SP PROJECT M-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
 09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 MODEL PAGE 29

PIPE DATA LISTING

Pipe ID/ Material	Nom/ Sch	O.D. Inch	Thicknss(inch)	W.Th. Inch	Corr Mill	Insu	Ling	Spec Grav	Weight(Lb/ft) Pipe	Other Total
PIPE-1	4	4.500	0.237	0.06	0.03	0	0	1.20	11.04	0 17.66
A312-TP304L	STD									

TRAN-SP PROJECT M-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
 09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 MODEL PAGE 30

MATERIAL DATA LISTING

Material Name	Pipe ID	Density lb/cu.ft	Pois. Ratio	Temper. deg F	Modulus Eg psi	Expans. in/100ft	Allow. psi
A312-TP304L	PIPE-1	501.0	0.30	40.0	28.42	1.5442	18700.0
				180.0			18700.0

TRAN-SP PROJECT W-320 ES-320-M2, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 MODEL PAGE 31

TEMPERATURE AND PRESSURE DATA

POINT NAME PRESS. TEMPER. EXPAN. PRESS. TEMPER. EXPAN.
psi deg F in/100ft psi deg F in/100ft

*** SEGMENT A
A00 180 1.544
A167 325 1.544

---C A S E 1---C A S E 2---C A S E 3---
PRESS. TEMPER. EXPAN. PRESS. TEMPER. EXPAN.
psi deg F in/100ft psi deg F in/100ft

THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (in)	DY (in)	DZ (in)	RX (deg)	RY (deg)	RZ (deg)
A01	Thermal 1	0.00	0.00	-0.06	0.000	0.000	0.000
A08	Thermal 1	0.15	0.00	0.15	0.000	0.000	0.000
A12	Thermal 1	-0.14	0.00	0.14	0.000	0.000	0.000
A13	Thermal 1	-0.11	0.00	0.11	0.000	0.000	0.000
A14	Thermal 1	-0.08	0.00	0.08	0.000	0.000	0.000
A41	Thermal 1	-0.11	0.00	0.11	0.000	0.000	0.000
A45	Thermal 1	-0.15	0.00	0.00	0.000	0.000	0.000
A46	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A47	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000
A89	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A90	Thermal 1	0.09	0.00	0.00	0.000	0.000	0.000
A91	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A92	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A93	Thermal 1	0.15	0.00	0.00	0.000	0.000	0.000
A97	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000
A98	Thermal 1	0.00	0.00	0.12	0.000	0.000	0.000
A102	Thermal 1	-0.14	0.00	0.00	0.000	0.000	0.000
A103	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A104	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
I112	Thermal 1	-0.06	0.00	0.00	0.000	0.000	0.000
I113	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
A119	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A120	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A131	Thermal 1	0.07	0.00	0.00	0.000	0.000	0.000
A137	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000

TRAN-SP PROJECT W-320 ES-320-WZ M4, N5 M6 ICF Kaiser Hanford Company
 09/05/96 SUPERNATE LINE PROCESS PIPE AUTO-PEL-4.00 MODEL PAGE 35

 THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (in)	DY (in)	DZ (in)	RX (deg)	RY (deg)	RZ (deg)
A146	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A147	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A148	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A149	Thermal 1	0.16	0.00	0.00	0.000	0.000	0.000
A153	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000
A164	Thermal 1	0.00	0.00	-0.07	0.000	0.000	0.000

IC/14PRINT

ANALYSIS SUMMARY

Current model revision number : 13

Static - Date and Time of analysis Sep 5, 1996 2:39 PM
Model Revision Number 13
Number of load cases 3
Load cases analyzed GR T1 P1
Gaps/friction/welding considered No
Hanger design run No
Cut short included No
Weight of contents included Yes
Pressure stiffening case 0
Water elevation for buoyancy loads Not considered

Modal - Date and Time of analysis Sep 5, 1996 2:39 PM
Model Revision Number 13
Number of modes 12
Cutoff frequency (Hz) 33.0
Weight of contents included Yes
Pressure stiffening case 0
Water elevation for buoyancy loads Not considered

Response - Date and Time of analysis Sep 5, 1996 2:40 PM
Model Revision Number 13
Number of load cases 3
Load cases analyzed R1 R2 R3
Date and Time of modal analysis Sep 5, 1996 2:39 PM
Cutoff frequency (Hz) 33.0
Weight of contents included Yes
Pressure stiffening case 0
Water elevation for buoyancy loads Not considered

CODE COMPLIANCE COMBINATIONS

Combination	Category	Method	Load	Factor	Allowable	Remarks
GR + Max P	Sustain	Sum	Gravity Max Long	1.00	Automatic	Default
Cold to T1	Expansion	Sum	Thermal 1	1.00	Automatic	Default
Max P	Hoop		Max Hoop	1.00	Automatic	Default
SRSS	Occasion	SRSS	Response 1 Response 2 Response 3	1.00 1.00 1.00	Automatic	User

OTHER USER COMBINATIONS

Combination	Method	Load	Factor	Remarks
GR	Sum	Gravity	1.00	Default
T1	Sum	Thermal 1	1.00	Default
P1	Sum	Press 1	1.00	Default
SUM	Sum	Gravity Thermal 1 Press 1	1.00 1.00 1.00	User
RESP	Abs sum	Response 1 Response 2 Response 3	1.00 1.00 1.00	User
TOTAL	Abs sum	SUM RESP	1.00 1.00	User

CODE COMPLIANCE

Y - Factor 0.40
Weld efficiency factor 1.00
Range reduction factor 1.00
Design Pressure factor 1.00
Minimum stress ratio used in reports 0.00
Include corrosion in stress calcs. Y
Include axial force in code stress Y
Longitudinal pressure calculation PD/At
Include rigorous pressure Y

RESPONSE SPECTRUM LOAD CASES :

Number of Load cases analysed : 3

Load case 1 - R1

Missing mass : No
ZPA : No

Combination method : SRSS

X- Spectrum : SC2&3
Multiplier : 1.00

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

Load case 2 - R2

Missing mass : No
ZPA : No

Combination method : SRSS

Y- Spectrum : SC2&3
Multiplier : 1.00

SC2&3

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

Load case 3 - R3

Missing mass : No
ZPA : No

Combination method : SRSS

Z- Spectrum : SC283

Multiplier : 1.00

SC283

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.125	0.01	0.200	0.02	1.100	0.17
0.150	0.01	0.250	0.02	12.000	0.20
0.175	0.01	0.315	0.02	100.000	0.12
0.200	0.16	33.000	0.12		

F R E Q U E N C I E S

Mode Number	Frequency (KHz/sec)	Frequency (Hertz)	Period (Sec)	Participation factors		
				X	Y	Z
1	10.3567	1.6483	0.607	-1.650	0.000	0.046
2	11.7484	1.8698	0.535	1.264	0.000	-0.085
3	12.7169	2.0240	0.494	1.283	0.000	0.125
4	12.8605	2.0468	0.489	1.223	0.000	-0.073
5	13.0497	2.0769	0.481	-1.220	0.000	0.073
6	14.0956	2.2434	0.446	-1.535	0.000	0.460
7	19.0580	3.0332	0.330	0.663	0.000	0.993
8	22.3562	3.5581	0.281	0.000	0.836	0.000
9	23.4692	3.7352	0.268	-1.345	0.094	-0.538
10	24.0311	3.8247	0.261	-0.139	0.061	-1.223
11	25.7055	4.0912	0.244	-0.944	0.000	1.410
12	27.8354	4.4301	0.226	-0.752	-0.005	0.789

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
*** Segment A begin ***							
A00	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A01	GR	0.000	0.000	0.000	0.008	0.000	0.004
	T1	-0.102	0.000	-0.065	0.000	-0.102	0.000
	P1	-0.001	0.000	0.000	0.000	-0.001	0.000
	SUM	-0.103	0.000	-0.065	0.008	-0.103	0.004
	TOTAL	-0.103	0.000	-0.065	0.008	-0.103	0.004
A02	GR	0.000	0.000	0.000	0.000	0.062	0.000
	T1	0.000	0.000	0.000	0.000	0.165	0.004
	P1	-0.235	0.000	-0.258	0.000	-0.031	0.000
	SUM	-0.235	0.000	-0.258	0.000	-0.001	0.000
	TOTAL	-0.235	0.000	-0.258	0.000	-0.001	0.000
A03 N	GR	0.000	0.000	0.000	0.019	0.000	-0.010
	T1	-0.237	0.000	-0.258	0.000	-0.027	0.000
	P1	-0.003	0.000	-0.003	0.000	-0.001	0.000
	SUM	-0.240	0.000	-0.261	0.019	-0.032	-0.010
	TOTAL	-0.240	0.000	-0.261	0.019	-0.032	-0.010
A03 M	GR	0.000	0.000	0.000	0.019	0.129	0.010
	T1	0.000	0.000	0.000	0.019	0.000	-0.010
	P1	-0.237	0.000	-0.258	0.000	-0.027	0.000
	SUM	-0.240	0.000	-0.261	0.019	-0.028	-0.010
	TOTAL	-0.241	0.000	-0.261	0.019	-0.028	-0.010
A03 F	GR	0.000	0.002	0.000	0.021	0.121	0.010
	T1	-0.256	0.000	-0.255	0.021	0.000	-0.009
	P1	-0.003	0.000	-0.003	0.000	0.024	0.000
	SUM	-0.260	0.002	-0.258	0.021	0.024	-0.009
	TOTAL	-0.263	0.002	-0.258	0.021	0.024	-0.009

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A04	GR	0.000	0.000	0.000	0.023	0.000	-0.006
	T1	-0.265	0.000	-0.230	0.000	0.000	0.000
	P1	-0.004	0.000	-0.003	0.000	0.001	0.000
	SUM	-0.269	0.000	-0.233	0.023	0.001	-0.006
	TOTAL	-0.269	0.000	-0.233	0.023	0.001	-0.006
A05	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.137	0.000	0.137	0.009	0.000	-0.013
	P1	-0.002	0.000	0.002	0.000	0.000	0.000
	SUM	-0.139	0.000	0.139	0.009	0.000	-0.013
	TOTAL	-0.139	0.000	0.139	0.009	0.000	-0.013
A06	GR	0.000	0.000	0.000	0.000	0.065	0.000
	T1	0.000	0.000	0.000	0.009	0.168	0.013
	P1	-0.257	0.000	0.257	0.008	0.000	-0.007
	SUM	-0.257	0.000	0.257	0.008	0.000	-0.007
	TOTAL	-0.257	0.000	0.257	0.008	0.000	-0.007
A07	GR	0.000	0.000	0.000	0.000	0.043	0.007
	T1	-0.377	0.000	0.377	0.004	0.000	-0.004
	P1	-0.005	0.000	0.005	0.000	0.000	0.000
	SUM	-0.382	0.000	0.382	0.004	0.000	-0.004
	TOTAL	-0.382	0.000	0.382	0.004	0.000	-0.004
A08	GR	0.000	0.000	0.000	0.000	0.011	0.004
	T1	-0.349	0.000	0.349	0.001	0.000	0.000
	P1	-0.007	0.000	0.007	0.000	0.000	0.000
	SUM	-0.356	0.000	0.356	0.001	0.000	0.000
	TOTAL	-0.356	0.000	0.356	0.001	0.000	0.000
A085	GR	0.000	-0.006	0.000	-0.002	0.000	0.000
	T1	-0.050	0.000	1.073	0.000	0.440	0.000
	P1	-0.002	0.000	0.013	0.000	0.000	0.000
	SUM	-0.052	-0.006	1.086	-0.002	0.447	0.000
	TOTAL	-0.052	-0.006	1.086	-0.002	0.447	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A09	GR	0.000	0.000	-0.007	0.000
	T1	0.139	0.000	0.000	0.253
	P1	0.002	0.000	0.000	0.004
	SUM	0.140	0.000	-0.007	0.257
	RESP	0.140	0.000	0.000	0.012
A10 N	GR	0.000	0.001	-0.006	0.000
	T1	0.151	0.000	0.000	0.216
	P1	0.002	0.000	0.000	0.004
	SUM	0.152	0.001	-0.006	0.219
	RESP	0.110	0.000	0.000	0.017
A10 M	GR	0.000	0.001	-0.004	0.000
	T1	0.143	0.000	0.000	0.216
	P1	0.002	0.000	0.000	0.004
	SUM	0.145	0.001	-0.004	0.216
	RESP	0.115	0.000	0.000	0.017
A10 F	GR	0.000	0.000	-0.004	0.000
	T1	0.141	0.000	0.000	0.237
	P1	0.002	0.000	0.000	0.004
	SUM	0.143	0.000	-0.004	0.241
	RESP	0.103	0.000	0.000	0.069
A11	GR	0.000	0.000	-0.004	0.000
	T1	0.155	0.000	0.000	0.270
	P1	0.002	0.000	0.000	0.005
	SUM	0.157	0.000	-0.004	0.275
	RESP	0.097	0.000	0.000	0.073
A12	GR	0.000	0.000	-0.005	0.000
	T1	0.517	0.000	0.000	0.789
	P1	0.008	0.000	0.000	0.004
	SUM	0.526	0.000	-0.005	0.793
	RESP	0.000	0.000	0.000	0.047

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A13	GR	0.000	0.000	-0.001	0.000
	T1	0.413	0.000	0.000	0.953
	P1	0.007	0.000	0.000	0.001
	SUM	0.420	0.000	-0.001	0.954
	RESP	0.420	0.000	0.000	0.013
A14	GR	0.000	0.000	-0.001	0.000
	T1	0.311	0.000	0.000	0.473
	P1	0.005	0.000	0.000	0.005
	SUM	0.316	0.000	-0.001	0.478
	RESP	0.000	0.000	0.000	0.003
A15	GR	0.000	0.000	-0.001	0.000
	T1	0.261	0.000	0.000	0.261
	P1	0.003	0.000	0.000	0.003
	SUM	0.265	0.000	-0.001	0.265
	RESP	0.265	0.000	0.000	0.001
A16	GR	0.000	0.000	0.000	0.000
	T1	0.131	0.000	0.000	0.131
	P1	0.002	0.000	0.000	0.002
	SUM	0.132	0.000	0.000	0.132
	RESP	0.132	0.000	0.000	0.000
A17	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A18	GR	0.000	0.000	0.000	0.000
	T1	-0.130	0.000	-0.130	0.000
	P1	-0.002	0.000	-0.002	0.000
	SUM	-0.132	0.000	-0.132	0.000
	RESP	0.132	0.000	0.000	0.001

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A19	GR	0.000	0.000	0.001	0.001
	T1	-0.260	-0.260	0.000	0.011
	P1	-0.260	-0.260	0.000	0.011
	SUM	-0.260	-0.260	0.000	0.011
	RESP	0.000	0.000	0.001	0.012
TOTAL		0.264	0.000	0.002	0.017
		0.000	0.264	0.002	0.017
		0.000	0.000	0.002	0.017
A20	GR	0.000	0.000	0.000	-0.002
	T1	-0.390	0.000	0.000	-0.042
	P1	-0.390	0.000	0.000	-0.042
	SUM	-0.390	0.000	0.000	-0.042
	RESP	0.000	0.000	0.000	-0.044
TOTAL		0.396	0.000	0.001	0.048
		0.000	0.396	0.001	0.048
		0.000	0.000	0.001	0.048
A21	GR	0.000	0.000	0.006	0.008
	T1	-0.520	0.000	-0.002	0.157
	P1	-0.520	0.000	0.000	0.002
	SUM	-0.520	0.000	0.000	0.167
	RESP	0.001	0.000	0.003	0.167
TOTAL		0.528	0.000	0.001	0.168
		0.000	0.528	0.007	0.235
		0.000	0.000	0.007	0.235
A22	GR	-0.009	0.000	-0.001	-0.004
	T1	-0.823	0.000	0.003	-0.027
	P1	-0.823	0.000	0.000	0.000
	SUM	-0.823	0.000	0.000	0.000
	RESP	0.000	0.000	0.002	-0.032
TOTAL		0.969	0.000	0.002	0.195
		0.000	0.969	0.003	0.124
		0.000	0.000	0.003	0.124
A23 N	GR	-0.009	-0.001	-0.003	-0.007
	T1	-0.823	0.000	0.004	-0.073
	P1	-0.823	0.000	0.000	-0.001
	SUM	-0.823	0.000	0.000	-0.001
	RESP	0.000	0.000	0.001	-0.080
TOTAL		0.976	0.001	0.002	0.092
		0.001	0.976	0.003	0.172
		0.001	0.001	0.003	0.172
A23 M	GR	-0.001	-0.004	-0.004	-0.022
	T1	-0.734	0.004	0.004	-0.344
	P1	-0.734	0.004	0.000	-0.005
	SUM	-0.734	0.004	0.000	-0.005
	RESP	0.000	0.000	0.001	-0.371
TOTAL		0.905	0.003	0.003	0.113
		0.003	0.905	0.004	0.484
		0.003	0.003	0.004	0.484

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A25 F	GR	0.013	-0.003	0.013	0.000
	T1	-0.496	0.004	-0.421	-0.001
	P1	-0.496	0.004	-0.421	-0.001
	SUM	-0.496	0.004	-0.421	-0.001
	RESP	-0.490	0.001	-0.413	-0.002
TOTAL		0.189	0.003	0.147	0.003
		0.678	0.004	0.560	0.003
		0.005	0.721	0.015	0.015
A25	GR	0.022	0.000	0.032	-0.001
	T1	-0.323	0.000	-0.268	-0.001
	P1	-0.323	0.000	-0.268	-0.001
	SUM	-0.323	0.000	-0.268	-0.001
	RESP	-0.305	0.000	-0.270	-0.010
TOTAL		0.206	0.000	0.165	0.144
		0.511	0.000	0.435	0.012
		0.012	0.741	0.015	0.015
A26 N	GR	0.025	0.001	0.025	-0.002
	T1	-0.277	-0.002	-0.262	-0.033
	P1	-0.277	-0.002	-0.262	-0.033
	SUM	-0.277	-0.002	-0.262	-0.033
	RESP	-0.256	-0.001	-0.231	-0.002
TOTAL		0.211	0.001	0.172	0.002
		0.467	0.002	0.404	0.014
		0.038	0.001	0.031	0.723
A26 M	GR	0.038	0.001	0.031	-0.023
	T1	-0.036	-0.006	-0.188	-0.007
	P1	-0.036	-0.006	-0.188	-0.007
	SUM	-0.036	-0.006	-0.188	-0.007
	RESP	0.003	-0.005	-0.159	-0.005
TOTAL		0.233	0.005	0.194	0.003
		0.235	0.010	0.353	0.109
		0.008	0.493	0.025	0.021
A26 F	GR	0.046	0.000	0.029	-0.002
	T1	-0.043	-0.001	-0.329	-0.007
	P1	-0.043	-0.001	-0.329	-0.007
	SUM	-0.043	-0.001	-0.329	-0.007
	RESP	0.109	0.001	0.234	-0.017
TOTAL		0.233	0.002	0.176	0.093
		0.342	0.003	0.410	0.024
		0.046	0.000	0.028	0.194
A27	GR	0.046	0.000	0.028	-0.002
	T1	-0.043	-0.001	-0.329	-0.007
	P1	-0.043	-0.001	-0.329	-0.007
	SUM	-0.043	-0.001	-0.329	-0.007
	RESP	0.109	0.001	0.234	-0.017
TOTAL		0.233	0.002	0.176	0.093
		0.342	0.003	0.410	0.024
		0.046	0.000	0.028	0.194

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A28	GR	-0.037	-0.006	0.037	-0.000	0.007	0.012
	T1	-0.192	0.032	-0.192	-0.000	0.000	0.000
	P1	-0.003	0.000	-0.003	0.000	0.000	0.000
	SUM	-0.158	0.027	-0.158	0.000	0.000	0.000
	TOTAL	0.155	0.026	0.155	0.016	0.142	0.028
A29	GR	0.313	0.053	0.313	0.034	0.212	0.049
	T1	-0.037	-0.006	0.037	-0.004	-0.004	0.004
	P1	-0.329	0.055	-0.329	0.006	0.006	0.006
	SUM	-0.004	0.001	-0.004	-0.014	0.002	-0.002
	TOTAL	0.155	0.026	0.155	0.016	0.030	0.017
A30	GR	0.452	0.076	0.452	0.031	0.031	0.041
	T1	-0.037	-0.006	0.037	-0.011	-0.005	-0.003
	P1	-0.466	0.079	-0.466	-0.005	-0.005	-0.005
	SUM	-0.006	0.001	-0.006	-0.016	-0.010	-0.010
	TOTAL	0.155	0.026	0.155	0.025	0.087	0.011
A31	GR	0.591	0.100	0.591	0.101	0.216	0.050
	T1	-0.032	0.000	0.032	-0.004	-0.005	-0.001
	P1	-0.410	0.000	-0.410	-0.002	-0.002	-0.002
	SUM	-0.005	0.000	-0.005	-0.001	-0.001	-0.001
	TOTAL	0.237	0.000	0.237	0.089	0.105	0.021
A32 N	GR	0.621	0.000	0.621	0.023	0.152	0.006
	T1	-0.033	0.000	0.033	-0.013	-0.013	-0.013
	P1	-0.426	0.000	-0.426	-0.002	-0.002	-0.002
	SUM	-0.006	0.000	-0.006	-0.001	-0.001	-0.001
	TOTAL	0.248	0.001	0.248	0.082	0.106	0.006
A32 M	GR	0.647	0.006	0.647	0.106	0.308	0.024
	T1	-0.033	0.000	0.033	-0.002	-0.007	-0.002
	P1	-0.426	0.000	-0.426	-0.001	-0.001	-0.001
	SUM	-0.006	0.000	-0.006	-0.001	-0.001	-0.001
	TOTAL	0.248	0.001	0.248	0.082	0.106	0.006
A33	GR	0.647	0.006	0.647	0.106	0.308	0.024
	T1	-0.033	0.000	0.033	-0.002	-0.007	-0.002
	P1	-0.426	0.000	-0.426	-0.001	-0.001	-0.001
	SUM	-0.006	0.000	-0.006	-0.001	-0.001	-0.001
	TOTAL	0.248	0.001	0.248	0.082	0.106	0.006
A34	GR	0.647	0.006	0.647	0.106	0.308	0.024
	T1	-0.033	0.000	0.033	-0.002	-0.007	-0.002
	P1	-0.426	0.000	-0.426	-0.001	-0.001	-0.001
	SUM	-0.006	0.000	-0.006	-0.001	-0.001	-0.001
	TOTAL	0.248	0.001	0.248	0.082	0.106	0.006
A35 F	GR	0.647	0.006	0.647	0.106	0.308	0.024
	T1	-0.033	0.000	0.033	-0.002	-0.007	-0.002
	P1	-0.426	0.000	-0.426	-0.001	-0.001	-0.001
	SUM	-0.006	0.000	-0.006	-0.001	-0.001	-0.001
	TOTAL	0.248	0.001	0.248	0.082	0.106	0.006

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A32 F	GR	0.030	0.000	0.030	-0.001	-0.027	-0.001
	T1	-0.415	0.001	-0.415	-0.021	0.762	-0.011
	P1	-0.006	0.000	-0.006	-0.008	0.746	0.009
	SUM	-0.391	0.001	-0.391	-0.027	0.739	0.000
	TOTAL	0.255	0.000	0.255	0.007	0.117	0.002
A33	GR	0.646	0.001	0.646	0.034	0.835	0.010
	T1	-0.365	0.000	-0.365	-0.021	0.762	-0.011
	P1	-0.342	0.000	-0.342	-0.021	0.710	0.000
	SUM	-0.248	0.000	-0.248	-0.021	0.119	0.002
	TOTAL	0.590	0.000	0.590	0.028	0.863	0.012
A34	GR	0.014	0.000	0.014	0.001	-0.027	0.000
	T1	-0.022	0.000	-0.022	-0.008	0.746	0.009
	P1	-0.009	0.000	-0.009	-0.007	0.739	0.000
	SUM	-0.009	0.000	-0.009	-0.007	0.739	0.000
	TOTAL	0.224	0.000	0.224	0.001	0.117	0.002
A35 N	GR	0.012	0.000	0.012	0.002	0.846	0.012
	T1	-0.026	0.000	-0.026	-0.002	-0.026	0.001
	P1	0.000	0.000	0.000	0.000	0.714	0.007
	SUM	0.000	0.000	0.000	0.000	0.697	0.000
	TOTAL	0.224	0.000	0.224	0.001	0.113	0.002
A35 M	GR	0.007	0.000	0.007	0.001	0.811	0.010
	T1	-0.120	0.000	-0.120	-0.004	-0.017	-0.001
	P1	0.001	0.000	0.001	-0.004	0.436	0.000
	SUM	-0.119	0.000	-0.119	-0.004	0.425	0.000
	TOTAL	0.228	0.000	0.228	0.001	0.086	0.001
A35 F	GR	0.357	0.001	0.357	0.004	0.511	0.001
	T1	-0.009	0.000	-0.009	-0.002	-0.005	0.000
	P1	0.042	0.000	0.042	-0.002	0.092	-0.002
	SUM	0.000	0.000	0.000	-0.002	0.001	0.000
	TOTAL	0.051	0.000	0.051	-0.004	0.146	0.003
A36	GR	0.208	0.000	0.208	0.000	0.208	0.000
	T1	-0.259	0.000	-0.259	0.004	0.204	0.003
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A36	GR	0.009	0.000	-0.009	-0.003	-0.003	0.001
	T1	0.032	0.000	0.000	-0.002	0.035	-0.002
	P1	0.000	0.000	0.009	0.000	0.000	0.000
	SUM	0.042	0.000	0.701	-0.005	0.034	-0.002
	TOTAL	0.199	0.000	0.199	0.000	0.124	0.000
A37	GR	0.241	0.000	0.901	0.005	0.156	0.002
	T1	0.000	0.000	0.000	-0.003	0.006	0.002
	P1	0.260	0.000	0.600	-0.002	-0.211	-0.002
	SUM	0.003	0.000	0.603	-0.005	-0.003	0.000
	TOTAL	0.264	0.000	0.264	0.000	0.085	0.000
A38	GR	0.000	0.000	0.000	0.000	0.085	0.000
	T1	0.264	0.000	0.000	0.005	0.292	0.000
	P1	0.000	0.000	0.000	-0.002	-0.001	-0.001
	SUM	0.132	0.000	0.132	-0.001	0.052	-0.001
	TOTAL	0.132	0.000	0.132	0.001	0.021	0.002
A39	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A40	GR	0.000	0.000	0.000	0.133	0.000	0.082
	T1	-0.129	0.000	-0.132	-0.084	0.000	0.000
	P1	-0.002	0.000	-0.002	0.133	-0.082	0.082
	SUM	-0.131	0.000	-0.131	0.000	0.000	0.000
	TOTAL	0.131	0.000	0.131	0.175	0.086	0.109
A41	GR	0.000	0.000	0.000	0.112	0.000	0.317
	T1	-0.370	0.000	-0.000	0.000	0.526	0.000
	P1	-0.003	0.000	-0.003	0.112	0.000	0.000
	SUM	-0.373	0.000	-0.151	0.112	0.526	0.000
	TOTAL	0.000	0.000	0.000	0.041	0.000	0.098

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A42	GR	0.000	-0.458	0.000	-0.144	0.000	0.497
	T1	-1.772	0.000	0.998	0.000	0.000	0.000
	P1	-0.023	0.000	0.000	0.000	0.000	0.000
	SUM	-1.795	-0.458	1.011	0.144	0.349	0.497
	TOTAL	1.795	0.850	1.011	0.192	0.349	0.656
A43 N	GR	0.000	-0.464	0.000	0.147	0.000	0.496
	T1	-1.779	0.000	1.002	0.000	0.324	0.000
	P1	-0.023	0.000	0.000	0.000	0.000	0.000
	SUM	-1.803	-0.464	1.015	0.147	0.329	0.496
	TOTAL	1.803	0.858	1.015	0.196	0.329	0.656
A43 M	GR	0.000	-0.703	0.000	0.173	0.000	0.491
	T1	-1.838	0.000	1.020	0.000	0.000	0.000
	P1	-0.024	0.000	0.000	0.000	0.000	0.000
	SUM	-1.862	-0.703	1.023	0.173	0.098	0.491
	TOTAL	1.862	1.008	1.033	0.231	0.098	0.649
A43 F	GR	0.000	-0.679	0.000	0.169	0.000	0.483
	T1	-1.835	0.000	1.001	0.000	0.000	0.000
	P1	-0.024	0.000	0.000	0.000	0.000	0.000
	SUM	-1.859	-0.679	1.014	0.169	0.136	0.483
	TOTAL	1.859	0.876	1.014	0.231	0.136	0.638
A44	GR	0.000	-0.674	0.000	0.201	0.000	0.482
	T1	-1.832	0.000	0.999	0.000	0.000	0.000
	P1	-0.024	0.000	0.000	0.000	0.000	0.000
	SUM	-1.856	-0.674	1.012	0.201	0.156	0.482
	TOTAL	1.856	0.869	1.012	0.268	0.156	0.637
A45	GR	0.000	0.000	0.000	0.146	0.000	0.386
	T1	-0.151	0.000	0.800	0.000	-0.469	0.000
	P1	0.000	0.000	0.010	0.000	0.000	0.000
	SUM	-0.151	0.000	0.811	0.146	-0.475	0.000
	TOTAL	0.151	0.000	0.811	0.186	0.475	0.511

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Z
A46	GR	0.000	0.000	-0.039	0.000
	T1	-0.112	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	-0.112	0.000	0.000	0.287
	RESP	-0.112	0.000	0.000	0.287
A47	GR	0.000	0.000	-0.039	0.000
	T1	0.000	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.287
	RESP	0.000	0.000	0.000	0.287
A48	GR	0.000	0.000	-0.039	0.000
	T1	0.000	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.287
	RESP	0.000	0.000	0.000	0.287
A49	GR	0.000	0.000	-0.039	0.000
	T1	0.000	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.287
	RESP	0.000	0.000	0.000	0.287
A50	GR	0.000	0.000	-0.039	0.000
	T1	0.000	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.287
	RESP	0.000	0.000	0.000	0.287
A51	GR	0.000	0.000	-0.039	0.000
	T1	0.000	0.000	0.000	0.287
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.287
	RESP	0.000	0.000	0.000	0.287

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Z
A52	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A53	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A54	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A55 M	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
A55 M	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A55 F	GR	0.000	0.001	0.000	0.005	0.000	0.009
	T1	0.000	0.000	-0.726	0.000	0.964	0.000
	P1	0.000	0.000	0.000	0.000	0.964	0.000
	SUM	0.032	0.001	-0.710	0.000	0.013	0.000
	TOTAL	0.661	0.000	-0.087	0.005	0.976	0.009
A56	GR	0.693	0.001	0.822	0.005	0.086	0.000
	T1	0.000	0.000	0.000	0.005	1.062	0.009
	P1	0.024	0.000	-0.623	0.000	1.008	0.000
	SUM	0.024	0.000	-0.008	0.000	0.013	0.000
	TOTAL	0.661	0.000	0.691	0.005	1.021	0.009
156	GR	0.685	0.000	0.728	0.000	0.075	0.000
	T1	0.000	0.000	0.000	0.005	1.097	0.009
	P1	0.089	0.000	0.000	-0.005	0.000	0.000
	SUM	-0.090	0.000	0.014	0.000	0.013	0.000
	TOTAL	0.661	0.000	0.094	-0.005	0.017	0.000
A57 M	GR	0.752	0.000	1.193	0.000	0.076	0.000
	T1	0.000	0.001	0.000	0.005	1.093	0.010
	P1	0.000	0.000	0.000	-0.006	0.000	-0.010
	SUM	0.000	0.000	0.000	0.000	0.013	0.000
	TOTAL	0.661	0.000	0.000	-0.006	0.972	-0.010
A57 M	GR	0.759	0.001	1.289	0.000	0.086	0.000
	T1	0.000	0.001	0.000	-0.006	1.058	0.010
	P1	0.000	0.000	0.000	0.000	0.959	0.000
	SUM	0.000	0.000	0.000	0.000	0.013	0.000
	TOTAL	0.661	0.000	0.000	-0.006	0.972	-0.010
A57 M	GR	0.759	0.001	1.289	0.000	0.086	0.000
	T1	0.000	0.001	0.000	-0.006	1.058	0.010
	P1	0.000	0.000	0.000	0.000	0.959	0.000
	SUM	0.000	0.000	0.000	0.000	0.013	0.000
	TOTAL	0.661	0.000	0.000	-0.006	0.972	-0.010
A57 F	GR	0.000	0.005	0.000	-0.009	0.000	-0.013
	T1	0.000	0.000	1.578	0.000	0.645	0.000
	P1	0.000	0.000	0.000	0.000	0.008	0.000
	SUM	-0.293	0.000	0.021	-0.009	0.653	-0.013
	TOTAL	0.929	0.005	1.630	0.009	0.137	0.000
A57 F	GR	0.000	0.002	0.000	-0.016	0.000	-0.014
	T1	0.000	0.000	1.648	0.000	0.286	0.000
	P1	0.000	0.000	0.000	0.000	0.004	0.000
	SUM	-0.557	0.000	0.000	-0.016	0.290	-0.014
	TOTAL	1.092	0.002	1.669	0.016	0.181	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A58	GR	0.000	0.000	0.000	-0.018	0.000	-0.014
	T1	0.000	0.000	1.640	0.000	0.000	0.000
	P1	-0.554	0.000	0.021	0.000	0.000	0.000
	SUM	-0.007	0.000	0.000	-0.018	0.000	-0.014
	TOTAL	0.351	0.000	1.662	0.018	0.188	0.000
A59	GR	0.000	0.000	0.000	0.018	0.415	0.014
	T1	0.000	0.000	0.000	0.005	0.000	0.000
	P1	0.000	0.000	1.434	0.000	0.000	0.000
	SUM	0.000	0.000	0.019	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.452	0.005	-0.220	0.013
A60	GR	0.000	0.000	0.000	0.000	0.103	0.000
	T1	0.000	0.000	1.453	0.005	0.322	0.013
	P1	0.000	0.000	0.000	-0.001	0.000	-0.011
	SUM	0.000	0.000	0.016	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.245	-0.001	0.059	-0.011
A61	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	1.024	0.000	0.015	0.000
	P1	0.000	0.000	0.013	0.000	0.000	0.000
	SUM	0.000	0.000	1.037	0.000	-0.016	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.007	0.000
A62	GR	0.000	0.000	0.000	0.000	0.023	0.009
	T1	0.000	0.000	0.819	0.000	0.000	-0.007
	P1	0.000	0.000	0.011	0.000	0.000	0.000
	SUM	0.000	0.000	0.830	0.000	0.004	-0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A63	GR	0.000	0.000	0.830	0.000	0.006	0.007
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.614	0.000	0.000	-0.005
	SUM	0.000	0.000	0.008	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.622	0.000	-0.001	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A64	GR	0.000	0.000	0.000	0.000	0.000	-0.004
	T1	0.000	0.000	0.410	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.410	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	-0.004
A65	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	-0.002
	P1	0.000	0.000	0.205	0.000	0.000	0.000
	SUM	0.000	0.000	0.005	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.007	0.000	0.000	-0.002
A66	GR	0.000	0.000	0.208	0.000	0.000	0.002
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A67	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A68	GR	0.000	0.000	0.000	0.000	0.000	0.002
	T1	0.000	0.000	-0.205	0.000	0.000	0.006
	P1	0.000	0.000	-0.003	0.000	0.000	0.000
	SUM	0.000	0.000	-0.208	0.000	0.000	0.007
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.007
A69	GR	0.000	0.000	0.000	0.000	0.000	0.004
	T1	0.000	0.000	-0.409	0.000	0.000	0.011
	P1	0.000	0.000	-0.005	0.000	0.000	0.000
	SUM	0.000	0.000	-0.414	0.000	0.000	0.015
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.015

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A70	GR	0.000	0.000	0.000	0.000	0.000	0.007
	T1	0.000	0.000	0.819	0.000	0.005	0.002
	P1	0.000	0.000	-0.011	0.000	0.000	0.000
	SUM	0.000	0.000	0.829	0.000	0.005	0.002
	TOTAL	0.000	0.000	0.000	0.000	0.002	0.000
A71	GR	0.000	0.000	0.829	0.000	0.007	0.030
	T1	0.000	0.000	0.000	0.000	0.000	0.009
	P1	0.000	0.000	-1.023	0.000	-0.017	0.000
	SUM	0.000	0.000	-0.013	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	-0.001	-0.017	0.037
A72	GR	0.000	0.000	1.037	0.001	0.008	0.000
	T1	0.000	0.000	0.000	0.001	0.025	0.037
	P1	0.000	0.000	-1.228	0.001	0.000	0.011
	SUM	0.000	0.000	-0.016	0.000	0.001	0.053
	TOTAL	0.000	0.000	0.000	0.002	0.065	0.044
A73	GR	0.000	0.000	1.244	0.000	0.028	0.000
	T1	0.000	0.000	0.000	0.000	0.002	0.045
	P1	0.000	0.000	-1.433	0.000	-0.005	0.000
	SUM	0.000	0.000	-0.019	0.000	-0.003	0.000
	TOTAL	0.000	0.000	0.000	-0.003	-0.243	0.052
A74	GR	0.000	0.000	1.451	0.000	0.106	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.052
	P1	0.000	0.000	-1.452	0.000	0.348	0.052
	SUM	0.000	0.000	0.000	0.000	0.000	0.014
	TOTAL	0.000	0.000	0.000	0.000	0.003	0.004
A75 N	GR	0.000	0.000	1.661	0.000	0.273	0.059
	T1	0.000	0.000	0.000	0.000	0.194	0.000
	P1	0.000	0.000	-1.661	0.000	0.466	0.059
	SUM	0.000	0.000	0.000	0.000	0.000	0.014
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.004

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A75 M	GR	0.000	0.005	0.000	0.009	0.000	0.013
	T1	0.282	0.005	-0.000	0.037	0.746	0.041
	P1	0.004	0.000	-0.020	0.009	0.010	0.001
	SUM	0.286	0.010	-1.579	0.049	0.755	0.054
	RESP	0.655	0.000	0.032	0.000	0.175	0.000
A75 F	GR	0.941	0.010	1.612	0.047	0.896	0.034
	T1	0.000	0.001	0.000	0.006	0.000	0.010
	P1	0.065	0.000	-0.107	0.069	1.101	0.026
	SUM	0.001	0.005	-0.107	0.001	0.014	0.000
	RESP	0.066	0.003	-1.121	0.001	0.016	0.036
A76	GR	0.580	0.000	0.088	0.000	0.083	0.000
	T1	0.746	0.003	1.209	0.075	1.203	0.036
	P1	-0.001	0.000	0.001	0.005	0.000	0.010
	SUM	0.057	0.000	-0.935	0.074	1.154	0.021
	RESP	0.001	0.000	-0.935	0.001	0.015	0.000
176	GR	0.057	0.000	-0.927	0.001	0.015	0.000
	T1	0.680	0.000	0.097	0.001	1.079	0.031
	P1	0.737	0.000	1.094	0.080	1.246	0.031
	SUM	-0.001	0.001	0.001	-0.005	0.000	-0.010
	RESP	-0.057	0.000	0.003	0.074	1.154	0.021
A77 N	GR	-0.001	0.000	0.000	0.001	0.015	0.000
	T1	-0.001	0.000	0.000	0.001	0.015	0.000
	P1	-0.058	0.000	0.999	0.001	0.015	0.000
	SUM	0.680	0.000	0.097	0.001	0.015	0.000
	RESP	0.738	0.000	1.095	0.070	1.246	0.011
A77 M	GR	0.000	0.001	0.000	-0.000	0.000	-0.010
	T1	-0.065	0.002	0.107	0.069	1.101	0.026
	P1	-0.001	0.000	0.000	0.001	0.014	0.000
	SUM	-0.066	-0.001	1.122	0.000	0.016	0.016
	RESP	0.680	0.000	0.088	0.000	0.116	0.000
A82	GR	0.747	0.001	1.210	0.064	1.204	0.017
	T1	0.000	0.005	0.000	-0.009	0.000	-0.013
	P1	-0.202	0.005	1.559	0.037	0.746	0.041
	SUM	-0.004	0.005	1.580	0.000	0.010	0.001
	RESP	-0.286	-0.001	1.580	0.000	0.010	0.001
TOTAL	GR	0.655	0.000	0.032	0.000	0.016	0.029
	T1	0.941	0.001	1.612	0.029	0.896	0.039
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A77 F	GR	0.000	0.002	0.000	-0.016	0.000	-0.014
	T1	-0.559	-0.001	1.647	0.013	0.340	0.004
	P1	-0.507	0.000	0.021	0.000	0.004	0.000
	SUM	-0.507	0.000	1.668	-0.002	0.344	0.031
	RESP	0.573	0.000	0.000	0.000	0.186	0.000
A78	GR	1.140	0.001	1.688	0.002	0.531	0.031
	T1	0.000	0.000	0.000	-0.018	0.000	-0.014
	P1	-0.591	0.000	1.639	0.011	0.269	0.004
	SUM	-0.591	0.000	1.639	0.003	0.003	0.001
	RESP	0.553	0.000	1.661	-0.007	0.273	0.030
A79	GR	1.152	0.000	1.661	0.000	0.194	0.000
	T1	0.000	0.000	0.000	0.007	0.467	0.031
	P1	0.000	0.000	1.433	-0.003	0.000	-0.013
	SUM	0.000	0.000	0.019	0.000	-0.003	0.001
	RESP	0.000	0.000	1.451	0.002	-0.242	0.027
A80	GR	0.000	0.000	0.000	0.000	0.106	0.000
	T1	0.000	0.000	1.432	0.002	0.348	0.027
	P1	0.000	0.000	1.228	-0.001	0.000	-0.011
	SUM	0.000	0.000	0.016	0.000	0.001	0.000
	RESP	0.000	0.000	1.244	-0.001	0.065	0.023
A81	GR	0.000	0.000	0.000	0.000	0.028	0.000
	T1	0.000	0.000	1.244	0.001	0.093	0.023
	P1	0.000	0.000	1.023	0.000	0.000	-0.009
	SUM	0.000	0.000	0.013	0.000	-0.017	0.000
	RESP	0.000	0.000	1.037	0.000	-0.017	0.019
A82	GR	0.000	0.000	0.000	0.000	0.008	0.000
	T1	0.000	0.000	1.037	0.000	0.025	0.019
	P1	0.000	0.000	0.819	0.000	0.000	-0.007
	SUM	0.000	0.000	0.011	0.000	0.005	0.000
	RESP	0.000	0.000	0.829	0.000	0.005	0.015
TOTAL	GR	0.000	0.000	0.829	0.000	0.002	0.000
	T1	0.000	0.000	0.829	0.000	0.007	0.015
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A83	GR	0.000	0.000	0.000	0.000	0.000	-0.005
	T1	0.000	0.000	0.614	0.000	-0.001	0.017
	P1	0.000	0.000	0.008	0.000	0.000	0.000
	SUM	0.000	0.000	0.622	0.000	-0.001	0.011
	TOTAL	0.000	0.000	0.622	0.000	0.001	0.000
A84	GR	0.000	0.000	0.000	0.000	0.000	-0.004
	T1	0.000	0.000	0.409	0.000	0.000	0.011
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.415	0.000	0.000	0.008
	TOTAL	0.000	0.000	0.415	0.000	0.000	0.008
A85	GR	0.000	0.000	0.000	0.000	0.000	-0.002
	T1	0.000	0.000	0.205	0.000	0.000	0.004
	P1	0.000	0.000	0.003	0.000	0.000	0.000
	SUM	0.000	0.000	0.207	0.000	0.000	0.004
	TOTAL	0.000	0.000	0.207	0.000	0.000	0.004
A86	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A87	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A88	GR	0.000	0.000	0.000	0.000	0.000	0.003
	T1	0.000	0.000	-0.205	0.000	0.003	0.000
	P1	0.000	0.000	-0.003	0.000	0.000	0.000
	SUM	0.000	0.000	-0.208	0.000	0.003	0.003
	TOTAL	0.000	0.000	0.208	0.000	0.000	0.003

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A89	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.064	0.000	-0.616	0.000	-0.019	0.008
	P1	0.000	0.000	-0.008	0.000	0.000	0.000
	SUM	0.064	0.000	-0.624	0.000	-0.019	0.008
	TOTAL	0.064	0.000	0.000	0.000	0.001	0.000
A90	GR	0.000	0.000	0.000	0.000	0.000	0.010
	T1	0.086	0.000	-0.821	0.000	-0.003	0.000
	P1	0.000	0.000	-0.011	0.000	0.000	0.010
	SUM	0.086	0.000	-0.832	0.000	-0.003	0.010
	TOTAL	0.086	0.000	0.001	0.000	0.000	0.010
A91	GR	0.000	0.000	0.000	0.000	0.000	0.013
	T1	0.107	0.000	-1.027	0.000	-0.016	0.000
	P1	0.000	0.000	-0.013	0.000	0.000	0.013
	SUM	0.107	0.000	-1.040	0.000	-0.016	0.013
	TOTAL	0.107	0.000	0.001	0.000	0.012	0.013
A92	GR	0.000	0.000	0.000	0.002	0.000	0.016
	T1	0.129	0.000	-1.232	0.000	-0.109	0.000
	P1	0.000	0.000	-0.016	0.000	0.001	0.000
	SUM	0.129	0.000	-1.248	0.002	-0.108	0.016
	TOTAL	0.129	0.000	0.001	0.000	0.044	0.016
A93	GR	0.000	0.000	0.000	-0.007	0.000	0.018
	T1	0.150	0.000	-1.437	0.000	-0.109	0.000
	P1	0.000	0.000	-0.019	0.000	-0.002	0.000
	SUM	0.150	0.000	-1.456	-0.007	-0.111	0.018
	TOTAL	0.150	0.000	0.001	0.000	0.163	0.018
A94	GR	0.000	0.000	0.000	0.007	0.274	0.018
	T1	0.400	0.000	0.000	0.000	0.000	0.021
	P1	0.006	0.000	-0.021	0.000	0.001	0.000
	SUM	0.406	0.000	-1.566	0.024	0.130	0.021
	TOTAL	1.223	0.000	1.667	0.000	0.259	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A95 M	GR	0.000	0.000	0.000	0.022	0.000	0.021
	P1	0.365	0.000	-1.652	0.000	0.160	0.000
	SUM	0.365	0.000	-0.021	0.000	0.002	0.000
	RESP	0.391	0.000	-0.674	0.022	0.162	0.021
	TOTAL	0.844	0.000	-1.111	0.000	0.245	0.000
A95 M	GR	1.234	0.002	1.675	0.022	0.406	0.021
	P1	0.000	0.008	0.000	0.018	0.000	0.020
	P1	0.250	0.000	-1.632	0.000	0.341	0.000
	SUM	0.250	0.000	-0.021	0.000	0.005	0.000
	RESP	0.945	0.008	0.653	0.018	0.345	0.020
A95 F	GR	1.198	0.008	1.690	0.000	0.157	0.000
	P1	0.000	0.002	0.000	0.018	0.502	0.020
	P1	0.132	0.000	-1.434	0.016	0.000	0.018
	SUM	0.132	0.000	-0.018	0.000	0.500	0.000
	RESP	0.970	0.000	-1.453	0.016	0.507	0.018
A96	GR	1.104	0.002	1.544	0.000	0.067	0.000
	P1	0.000	0.000	0.000	0.016	0.574	0.018
	P1	0.124	0.000	-1.381	0.016	0.000	0.019
	SUM	0.124	0.000	-0.018	0.000	0.523	0.000
	RESP	0.970	0.000	-1.397	0.016	0.530	0.019
A97	GR	1.096	0.000	1.496	0.000	0.052	0.000
	P1	0.000	0.000	0.000	0.016	0.582	0.019
	P1	0.000	0.000	-1.331	0.000	0.298	0.005
	SUM	0.000	0.000	0.000	0.000	0.003	0.000
	RESP	0.971	0.000	-0.133	0.006	0.301	-0.005
A98	GR	1.020	0.000	0.133	0.000	0.060	0.000
	P1	0.000	0.000	0.000	0.006	0.361	0.005
	P1	0.000	0.000	0.000	-0.005	0.000	0.005
	SUM	-0.232	0.000	0.116	0.000	0.202	0.000
	RESP	-0.203	0.000	0.000	0.000	0.002	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A99	GR	0.000	0.000	0.000	-0.014	0.000	-0.018
	P1	-0.405	0.000	1.009	0.000	0.000	0.000
	SUM	-0.405	0.000	0.013	0.000	0.000	0.000
	RESP	-0.411	0.000	1.022	-0.014	0.357	-0.010
	TOTAL	0.70	0.000	1.002	0.000	0.054	0.000
A100N	GR	1.361	0.000	1.124	0.014	0.412	0.018
	P1	0.000	0.002	0.000	-0.015	0.000	-0.017
	P1	-0.413	0.000	1.045	0.000	0.331	0.000
	SUM	-0.005	0.000	0.013	0.000	0.331	0.000
	RESP	-0.418	0.002	1.058	-0.015	0.330	-0.017
A100M	GR	0.970	0.000	0.096	0.000	0.070	0.000
	P1	1.369	0.002	1.154	0.015	0.406	0.017
	P1	0.000	0.007	0.000	-0.016	0.000	-0.018
	SUM	-0.498	0.000	1.161	0.000	0.185	0.000
	RESP	-0.505	0.007	1.177	-0.016	0.189	-0.018
A100F	GR	0.944	0.000	0.040	0.000	0.165	0.000
	P1	1.448	0.007	1.216	0.016	0.354	0.018
	P1	0.000	0.002	0.000	-0.020	0.000	-0.019
	SUM	-0.563	0.000	1.152	0.000	0.028	0.000
	RESP	-0.571	0.002	1.167	-0.020	0.028	-0.019
A101	GR	1.837	0.000	0.001	0.000	0.257	0.000
	P1	1.468	0.002	1.168	0.020	0.285	0.019
	P1	0.000	0.000	0.000	-0.022	0.000	-0.019
	SUM	-0.565	0.000	1.144	0.000	0.001	0.000
	RESP	-0.572	0.000	1.159	-0.022	0.001	-0.019
A102	GR	0.910	0.000	0.001	0.000	0.272	0.000
	P1	1.362	0.000	1.160	0.022	0.272	0.019
	P1	0.000	0.000	0.000	0.008	0.000	-0.016
	SUM	-0.140	0.000	0.944	0.000	0.128	0.000
	RESP	-0.140	0.000	0.956	-0.008	0.132	-0.016

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A103	GR	-0.000	0.000	0.000	-0.002	0.000	-0.012
	T1	-0.002	0.000	0.000	0.000	0.024	0.000
	P1	0.000	0.755	0.000	0.000	0.001	0.000
	SUM	-0.112	0.000	0.000	-0.002	0.025	-0.012
	TOTAL	0.000	0.000	0.000	0.000	0.043	0.000
A104	GR	0.000	0.000	0.000	0.000	0.068	0.012
	T1	-0.084	0.000	0.000	0.001	0.000	-0.009
	P1	-0.000	0.000	0.566	0.000	-0.034	0.000
	SUM	-0.084	0.000	0.007	0.001	0.000	0.000
	TOTAL	0.000	0.000	0.574	0.001	-0.035	-0.009
A105	GR	0.000	0.000	0.000	0.000	0.011	0.000
	T1	0.000	0.000	0.000	0.001	0.046	0.009
	P1	0.000	0.000	0.000	0.000	-0.004	0.000
	SUM	0.000	0.000	0.000	0.001	0.017	-0.006
	TOTAL	0.000	0.000	0.000	0.000	-0.017	-0.006
A106	GR	0.000	0.000	0.000	0.000	0.003	0.000
	T1	0.000	0.000	0.000	0.000	0.020	0.006
	P1	0.000	0.000	0.378	0.000	-0.000	-0.006
	SUM	0.000	0.000	0.005	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	-0.017	-0.006
A107	GR	0.000	0.000	0.000	0.000	0.003	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.189	0.000	0.004	0.000
	SUM	0.000	0.000	0.002	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	-0.004	-0.003
A108	GR	0.000	0.000	0.000	0.000	0.001	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A109	GR	0.000	0.000	0.000	-0.003	0.000	-0.005
	T1	0.000	0.000	-0.377	-0.009	0.000	0.000
	P1	0.000	0.000	-0.005	0.000	0.000	0.000
	SUM	0.000	0.000	-0.382	-0.012	0.001	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A110	GR	0.000	0.000	0.382	0.012	0.002	0.021
	T1	0.000	0.000	0.000	0.010	0.000	-0.007
	P1	0.000	0.000	-0.566	0.030	-0.005	0.037
	SUM	0.000	0.000	-0.007	0.040	0.000	0.000
	TOTAL	0.000	0.000	-0.573	0.045	-0.005	0.039
A111	GR	0.000	0.000	0.000	0.000	0.002	0.001
	T1	0.000	0.000	0.573	0.045	0.007	0.031
	P1	0.000	0.000	-0.611	-0.002	0.000	-0.008
	SUM	0.000	0.000	-0.008	0.001	0.000	0.000
	TOTAL	0.000	0.000	-0.618	0.043	0.000	0.032
A112	GR	0.000	0.000	0.000	0.000	0.000	0.001
	T1	0.000	0.000	0.618	0.043	0.001	0.033
	P1	0.000	0.000	-0.611	-0.002	0.000	-0.008
	SUM	0.000	0.000	-0.008	0.001	0.000	0.000
	TOTAL	0.000	0.000	-0.618	0.043	0.000	0.032
I112	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
I113	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A113	GR	0.001	0.000	0.000	-0.019	0.001	-0.015
	T1	-0.133	0.000	-1.148	-0.035	-0.170	0.048
	P1	-0.002	0.000	-0.002	-0.002	0.001	0.001
	SUM	-0.134	0.000	-1.153	-0.037	-0.172	0.054
	TOTAL	0.537	0.000	0.000	0.003	0.003	0.009
A114N	GR	0.721	0.000	1.163	0.020	0.426	0.042
	T1	0.001	0.002	0.156	0.018	0.001	-0.015
	P1	-0.002	0.000	-0.002	-0.034	-0.207	0.046
	SUM	-0.164	0.001	-0.155	-0.009	-0.202	0.001
	TOTAL	0.563	0.000	0.000	0.017	-0.209	0.031
A114M	GR	0.728	0.002	1.171	0.020	0.457	0.039
	T1	0.001	0.007	0.001	0.017	0.000	-0.016
	P1	0.002	0.000	-0.002	-0.029	-0.422	0.032
	SUM	0.003	0.000	-0.001	0.000	-0.005	0.000
	TOTAL	0.675	0.001	0.005	0.013	-0.427	0.017
A114F	GR	0.678	0.003	1.181	0.017	0.427	0.005
	T1	0.001	0.002	0.001	0.013	0.000	-0.021
	P1	0.002	0.000	-0.002	-0.025	-0.628	0.018
	SUM	0.142	0.000	-0.002	0.000	-0.008	0.000
	TOTAL	0.854	0.001	1.012	0.012	-0.636	-0.002
A115	GR	0.001	0.000	0.001	0.016	0.775	0.004
	T1	0.001	0.000	0.001	0.012	0.000	-0.023
	P1	0.002	0.000	-0.002	-0.024	-0.660	0.016
	SUM	0.150	0.000	-0.001	0.000	-0.009	0.000
	TOTAL	0.712	0.000	0.142	-0.012	-0.669	-0.007
A116	GR	0.862	0.000	0.958	0.016	0.127	0.002
	T1	0.001	0.000	0.001	0.016	0.196	0.009
	P1	0.002	0.000	-0.002	-0.018	0.000	0.028
	SUM	0.865	0.000	0.956	-0.004	-0.614	-0.003
	TOTAL	0.712	0.000	0.124	-0.022	-0.622	0.025
A117F	GR	1.055	0.000	1.339	0.022	0.746	0.025
	T1	0.001	0.000	0.001	0.018	0.000	0.000
	P1	0.002	0.000	-0.002	-0.018	0.000	0.000
	SUM	0.342	0.000	0.163	0.000	-0.008	0.000
	TOTAL	0.712	0.000	0.124	-0.022	-0.622	0.025

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A117N	GR	0.001	0.003	0.000	-0.019	0.000	0.026
	T1	0.344	0.000	1.259	-0.003	-0.578	-0.002
	P1	0.005	0.000	0.017	0.000	-0.008	0.000
	SUM	0.349	0.003	1.276	-0.022	-0.585	0.024
	TOTAL	0.712	0.003	1.113	0.001	0.133	0.000
A117M	GR	1.062	0.003	1.389	0.022	0.718	0.024
	T1	0.001	0.010	0.000	-0.024	0.000	0.025
	P1	0.469	-0.001	1.479	0.000	-0.352	0.000
	SUM	0.007	0.000	0.019	0.000	-0.004	0.000
	TOTAL	0.477	0.010	1.498	-0.023	-0.357	0.024
A117F	GR	1.156	0.010	1.536	0.023	0.173	0.000
	T1	0.001	0.003	0.000	-0.028	0.000	0.025
	P1	0.596	0.000	1.498	0.002	-0.118	0.000
	SUM	0.008	0.000	0.019	0.000	-0.001	0.000
	TOTAL	0.585	0.003	1.517	-0.026	-0.119	0.025
A118	GR	1.190	0.003	1.518	0.026	0.204	0.000
	T1	0.001	0.000	0.000	-0.029	0.000	0.025
	P1	0.606	0.000	1.490	0.001	-0.078	0.000
	SUM	0.008	0.000	0.019	0.000	-0.001	0.000
	TOTAL	0.512	0.000	1.509	-0.028	-0.078	0.025
A119	GR	1.179	0.000	1.510	0.028	0.209	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.025
	P1	0.078	0.000	1.278	0.000	0.000	0.021
	SUM	0.000	0.000	0.017	0.000	0.002	0.000
	TOTAL	0.078	0.000	1.295	0.007	0.170	0.022
A120	GR	0.078	0.000	1.295	0.000	0.102	0.000
	T1	0.000	0.000	0.000	0.007	0.272	0.022
	P1	0.065	0.000	1.065	-0.002	0.000	0.018
	SUM	0.000	0.000	0.014	0.000	-0.001	0.000
	TOTAL	0.065	0.000	1.079	-0.002	-0.029	0.018
A121	GR	0.065	0.000	1.079	0.000	0.027	0.000
	T1	0.000	0.000	0.000	0.002	0.056	0.018
	P1	0.065	0.000	1.079	0.000	0.000	0.018
	SUM	0.000	0.000	0.000	0.000	0.000	0.018
	TOTAL	0.065	0.000	1.079	0.000	0.000	0.018

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A121	GR	0.000	0.000	0.000	0.001	0.000	0.014
	T1	0.000	0.000	0.852	0.000	0.025	0.000
	P1	0.000	0.000	0.011	0.000	0.000	0.000
	SUM	0.000	0.000	0.863	0.001	0.026	0.014
	RESP	0.000	0.000	0.000	0.000	0.007	0.000
A122	GR	0.000	0.000	0.864	0.001	0.033	0.014
	T1	0.000	0.000	0.000	0.000	0.000	0.011
	P1	0.000	0.000	0.439	0.000	-0.007	0.000
	SUM	0.000	0.000	0.008	0.000	0.000	0.000
	RESP	0.000	0.000	0.648	0.000	-0.007	0.011
A123	GR	0.000	0.000	0.000	0.000	0.002	0.000
	T1	0.000	0.000	0.648	0.000	0.009	0.011
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.002	0.000
	RESP	0.000	0.000	0.432	0.000	0.002	0.007
A124	GR	0.000	0.000	0.432	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.426	0.000	0.002	0.000
	SUM	0.000	0.000	0.006	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.002	0.007
A125	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.213	0.000	0.000	0.000
	SUM	0.000	0.000	0.003	0.000	0.000	0.000
	RESP	0.000	0.000	0.216	0.000	0.000	0.000
A126	GR	0.000	0.000	0.216	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A127	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A128	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A129	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A130	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A131	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A132	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A133	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A127	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	-0.426	0.000	-0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	-0.006	0.000	0.000	0.000
	RESP	0.000	0.000	-0.431	0.000	-0.001	0.015
A128	GR	0.000	0.000	0.431	0.000	0.001	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.001
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	-0.638	0.000	0.000	0.008
	RESP	0.000	0.000	-0.647	0.000	0.002	0.023
A129	GR	0.000	0.000	0.647	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	-0.851	0.000	0.000	0.010
	SUM	0.000	0.000	-0.011	0.000	0.000	0.000
	RESP	0.000	0.000	-0.862	-0.001	-0.009	0.031
A130	GR	0.000	0.000	0.862	0.001	0.018	0.031
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	-1.064	0.001	0.033	0.013
	SUM	0.000	0.000	-0.014	0.000	0.001	0.000
	RESP	0.000	0.000	-1.078	0.002	0.034	0.038
A131	GR	0.000	0.000	1.078	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	-1.277	0.000	-0.002	0.016
	SUM	0.000	0.000	-0.017	0.000	-0.003	0.000
	RESP	0.000	0.000	-1.293	-0.008	-0.197	0.046
A132	GR	0.000	0.000	1.293	0.000	0.123	0.000
	T1	0.000	0.000	0.000	0.000	0.321	0.046
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	-1.488	0.000	0.000	0.018
	RESP	0.000	0.000	-1.508	0.032	0.226	0.054
A133	GR	0.000	0.000	1.508	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A133M	GR	0.000	0.002	0.000	0.020	0.000	0.018
	T1	0.000	0.006	-1.496	0.011	0.275	0.035
	SUM	0.000	0.006	-1.496	0.000	0.003	0.000
	RESP	0.482	0.003	-0.019	-0.032	0.278	0.054
	TOTAL	0.482	0.003	-0.019	-0.032	0.278	0.054
A133M	GR	0.000	0.007	0.000	0.014	0.000	0.017
	T1	0.000	0.004	-1.436	0.029	0.576	0.033
	SUM	0.000	0.004	-1.436	0.000	0.007	0.000
	RESP	0.259	0.010	-0.019	0.043	0.583	0.051
	TOTAL	0.259	0.010	-0.019	0.043	0.583	0.051
A133F	GR	0.000	0.011	1.493	0.043	0.175	0.000
	T1	0.000	0.007	0.000	0.010	0.000	0.016
	SUM	0.000	0.007	0.000	0.000	0.000	0.000
	RESP	0.817	0.003	1.216	0.063	0.978	0.039
	TOTAL	0.817	0.003	1.216	0.063	0.978	0.039
A134	GR	0.000	0.000	0.000	0.009	0.000	0.016
	T1	0.000	0.000	-0.998	0.057	0.890	0.019
	SUM	0.000	0.000	-0.998	0.001	0.012	0.000
	RESP	0.072	0.000	1.013	0.066	0.902	0.035
	TOTAL	0.072	0.000	1.013	0.066	0.902	0.035
I134	GR	0.000	0.000	0.000	0.009	0.000	0.016
	T1	0.000	0.000	-0.998	0.057	0.890	0.019
	SUM	0.000	0.000	-0.998	0.001	0.012	0.000
	RESP	0.072	0.000	1.013	0.066	0.902	0.035
	TOTAL	0.072	0.000	1.013	0.066	0.902	0.035
A135N	GR	0.000	0.000	0.000	0.009	0.000	0.016
	T1	0.000	0.000	-0.998	0.057	0.890	0.019
	SUM	0.000	0.000	-0.998	0.001	0.012	0.000
	RESP	0.072	0.000	1.013	0.066	0.902	0.035
	TOTAL	0.072	0.000	1.013	0.066	0.902	0.035

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A133M	GR	0.000	0.007	0.000	-0.014	0.000	-0.017
	T1	-0.257	-0.004	1.436	0.029	0.576	0.033
	SUM	-0.257	-0.004	1.436	0.000	0.003	0.000
	RESP	-0.261	0.002	-1.455	0.015	0.583	0.051
	TOTAL	-0.261	0.002	-1.455	0.015	0.583	0.051
A133F	GR	0.000	0.002	0.000	-0.021	0.000	-0.018
	T1	-0.478	-0.001	1.499	0.043	0.175	0.000
	SUM	-0.478	-0.001	1.499	0.000	0.000	0.000
	RESP	0.685	0.000	0.000	-0.010	0.275	0.033
	TOTAL	0.685	0.000	0.000	-0.010	0.275	0.033
A136	GR	0.000	0.000	0.000	0.010	0.502	0.017
	T1	-0.504	0.000	1.488	-0.023	0.000	-0.018
	SUM	-0.504	0.000	1.488	0.000	0.223	0.035
	RESP	-0.510	0.000	1.508	-0.013	0.223	0.035
	TOTAL	-0.510	0.000	1.508	-0.013	0.223	0.035
A137	GR	0.000	0.000	0.000	0.014	0.457	0.017
	T1	-0.068	0.000	1.277	0.006	0.000	-0.016
	SUM	-0.068	0.000	1.277	0.000	0.195	0.030
	RESP	-0.068	0.000	1.293	0.003	-0.198	0.000
	TOTAL	-0.068	0.000	1.293	0.003	-0.198	0.000
A138	GR	0.000	0.000	0.000	-0.002	0.000	-0.013
	T1	0.000	0.000	1.064	0.000	0.033	0.025
	SUM	0.000	0.000	1.064	0.000	0.033	0.025
	RESP	0.000	0.000	1.078	-0.001	0.031	0.000
	TOTAL	0.000	0.000	1.078	-0.001	0.031	0.000
A139	GR	0.000	0.000	0.000	0.001	0.067	0.012
	T1	0.000	0.000	0.000	0.000	0.000	-0.011
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A140	GR	0.000	0.000	0.000	-0.008
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A141	GR	0.000	0.000	0.000	-0.005
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A142	GR	0.000	0.000	0.000	-0.003
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A143	GR	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A144	GR	0.000	0.000	0.000	0.004
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000
A145	GR	0.000	0.000	0.000	0.008
	T1	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)		ROTATIONS (deg)	
		X	Y	X	Y
A146	GR	0.000	0.000	0.000	0.012
	T1	0.080	0.000	0.000	-0.019
	P1	0.000	0.000	0.000	0.000
	SUM	0.080	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.080	0.000	0.000	0.000
A147	GR	0.000	0.000	-0.001	0.000
	T1	0.107	0.000	0.000	-0.019
	P1	0.000	0.000	0.000	0.000
	SUM	0.107	0.000	-0.001	-0.019
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.107	0.000	0.000	0.000
A148	GR	0.000	0.000	0.000	0.016
	T1	0.134	0.000	0.000	-0.038
	P1	0.000	0.000	0.000	0.000
	SUM	0.134	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.134	0.000	0.000	0.000
A149	GR	0.000	0.000	-0.008	0.000
	T1	0.161	0.000	0.000	-0.190
	P1	0.000	0.000	0.000	-0.003
	SUM	0.161	0.000	-0.008	-0.193
	RESP	0.000	0.000	0.000	0.000
	TOTAL	0.161	0.000	0.000	0.000
A150	GR	0.000	0.000	0.030	0.000
	T1	0.899	0.000	0.000	-0.075
	P1	0.012	0.000	0.000	-0.001
	SUM	0.911	0.000	0.030	-0.076
	RESP	0.478	0.000	0.000	0.149
	TOTAL	1.369	0.000	0.030	0.225
A151N	GR	0.000	0.003	0.029	0.000
	T1	0.905	0.000	0.000	-0.000
	P1	0.012	0.000	0.000	-0.001
	SUM	0.917	0.003	0.029	-0.001
	RESP	0.493	0.000	0.000	0.141
	TOTAL	1.410	0.003	0.029	0.185

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A151M	GR	0.000	0.011	0.000	0.026	0.000	0.027
	T1	0.868	0.000	-1.518	0.000	0.147	0.000
	P1	0.011	0.000	-0.020	0.000	0.002	0.000
	SUM	0.880	0.011	-1.538	0.026	0.149	0.027
	RESP	0.553	0.000	-0.023	0.000	0.097	0.000
	TOTAL	1.432	0.011	1.561	0.026	0.246	0.027
A151F	GR	0.000	0.003	0.000	0.025	0.000	0.027
	T1	0.788	0.000	-1.411	0.000	0.330	0.000
	P1	0.010	0.000	-0.018	0.000	0.005	0.000
	SUM	0.799	0.003	-1.429	0.025	0.335	0.027
	RESP	0.569	0.000	0.058	0.000	0.052	0.000
	TOTAL	1.368	0.003	1.488	0.025	0.387	0.027
A152	GR	0.000	0.000	0.000	0.024	0.000	0.028
	T1	0.781	0.000	-1.375	0.000	0.359	0.000
	P1	0.010	0.000	-0.018	0.000	0.005	0.000
	SUM	0.791	0.000	-1.393	0.024	0.364	0.028
	RESP	0.569	0.000	0.063	0.000	0.045	0.000
	TOTAL	1.360	0.000	1.456	0.024	0.409	0.028
A153	GR	0.000	0.000	0.000	0.014	0.000	-0.009
	T1	0.580	0.000	-0.133	0.000	0.286	0.000
	P1	0.007	0.000	0.000	0.000	0.004	0.000
	SUM	0.588	0.000	-0.133	0.014	0.289	-0.009
	RESP	0.569	0.000	0.000	0.000	0.062	0.000
	TOTAL	1.157	0.000	0.133	0.014	0.351	0.009
A154	GR	0.000	-0.005	0.000	0.009	0.000	0.003
	T1	0.490	0.000	0.025	0.000	0.014	0.000
	P1	0.006	0.000	0.001	0.000	-0.001	0.000
	SUM	0.496	-0.005	0.027	0.009	0.013	0.003
	RESP	0.569	0.000	0.066	0.000	0.029	0.000
	TOTAL	1.065	0.005	0.092	0.009	0.042	0.003
A155	GR	0.000	0.000	0.000	0.003	0.000	0.008
	T1	0.380	0.000	0.000	0.000	0.014	0.000
	P1	0.005	0.000	0.000	0.000	0.000	0.000
	SUM	0.385	0.000	0.000	0.003	0.013	0.008
	RESP	0.569	0.000	0.140	0.000	0.140	0.000
	TOTAL	0.954	0.000	0.140	0.003	0.153	0.008

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A156	GR	0.000	0.000	0.000	-0.009	0.000	-0.013
	T1	0.166	0.000	0.194	0.000	-0.004	0.000
	P1	0.002	0.000	0.002	0.000	0.000	0.000
	SUM	0.168	0.000	0.197	-0.009	-0.004	-0.013
	RESP	0.569	0.000	0.583	0.000	0.128	0.000
	TOTAL	0.737	0.000	0.780	0.009	0.131	0.013
A157N	GR	0.000	0.001	0.000	-0.009	0.000	-0.010
	T1	0.158	0.000	0.193	0.000	-0.008	0.000
	P1	0.002	0.000	0.002	0.000	0.000	0.000
	SUM	0.160	0.001	0.196	-0.009	-0.018	-0.010
	RESP	0.569	0.000	0.592	0.000	0.126	0.000
	TOTAL	0.729	0.001	0.788	0.009	0.144	0.010
A157M	GR	0.000	0.001	0.000	-0.008	0.000	0.000
	T1	0.137	0.000	0.155	0.000	-0.001	0.000
	P1	0.002	0.000	0.002	0.000	-0.001	0.000
	SUM	0.138	0.001	0.157	-0.008	-0.003	0.000
	RESP	0.542	0.000	0.606	0.000	0.194	0.000
	TOTAL	0.681	0.000	0.758	0.008	0.297	0.000
A157F	GR	0.000	-0.001	0.000	-0.001	0.000	0.001
	T1	0.191	0.000	0.088	0.000	-0.007	0.000
	P1	0.002	0.000	0.001	0.000	-0.002	0.000
	SUM	0.193	-0.001	0.089	-0.001	-0.169	0.001
	RESP	0.433	0.000	0.595	0.000	0.276	0.000
	TOTAL	0.626	0.001	0.684	0.001	0.445	0.001
A159	GR	0.000	0.000	0.000	0.002	0.000	0.001
	T1	0.320	0.000	0.035	0.000	-0.007	0.000
	P1	0.004	0.000	0.000	0.000	-0.003	0.000
	SUM	0.324	0.000	0.035	0.002	-0.180	0.001
	RESP	0.227	0.000	0.595	0.000	0.308	0.000
	TOTAL	0.551	0.000	0.630	0.002	0.488	0.001
A160N	GR	0.000	0.000	0.000	0.001	0.000	0.001
	T1	0.338	0.000	0.027	0.000	-0.002	0.000
	P1	0.004	0.000	0.000	0.000	-0.002	0.000
	SUM	0.342	0.000	0.027	0.001	-0.174	0.001
	RESP	0.196	0.000	0.595	0.000	0.305	0.000
	TOTAL	0.539	0.000	0.623	0.001	0.479	0.001

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Deform	LOCAL Force	GLOBAL Dirn Force	Deform
A01 A01 A01 Stiff	1 Guide :RIGID	GR	down left	160 0.000 0.000	X Y Z	-160 0.000 0.000	0.000 0.000 0.000
		T1	down right	0.000 0.000	X Y Z	-0.102 0.000 -0.065	0.000 0.000 0.000
		P1	down right	0.000 0.000	X Y Z	-0.001 0.000 0.000	0.000 0.000 0.000
		SUM	down right	160 189 0.000	X Y Z	-160 -189 -0.065	-0.103 0.000 0.000
		RESP	down left	0.000 0.000	X Y Z	0.000 0.000 0.000	0.000 0.000 0.000
		TOTAL	down left	160 585 0.000	X Y Z	160 585 0.000	0.103 0.000 0.065
A02 A02 A02 Stiff	1 Inclined :RIGID	GR	back	69 0.000	X Y Z	-69 0.000 0.000	0.000 0.000 0.000
		T1	back	0.000	X Y Z	-0.235 0.000 -0.258	0.000 0.000 0.000
		P1	back	0.000	X Y Z	-0.003 0.000 -0.003	0.000 0.000 0.000
		SUM	back	69 0.000	X Y Z	-69 0.000 0.000	-0.238 0.000 -0.261
		RESP	back	0.000	X Y Z	0.000 0.000 0.000	0.000 0.000 0.000
		TOTAL	back	69 0.000	X Y Z	69 0.000 0.000	0.239 0.000 0.493

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Deform	LOCAL Force	GLOBAL Dirn Force	Deform
A04 A04 A04 Stiff	2 Inclined :RIGID	GR	back	132 0.000	X Y Z	-132 0.000 0.000	0.000 0.000 0.000
		T1	back	0.000	X Y Z	-0.245 0.000 -0.230	0.000 0.000 0.000
		P1	back	0.000	X Y Z	-0.004 0.000 -0.003	0.000 0.000 0.000
		SUM	back	132 0.000	X Y Z	-132 0.000 0.000	-0.249 0.000 -0.233
		RESP	back	0.000	X Y Z	0.007 0.000 0.260	0.000 0.000 0.000
		TOTAL	back	132 0.000	X Y Z	132 0.000 0.493	0.275 0.000 0.493
A05 A04 A04 Stiff	1 Guide :RIGID	GR	down left	208 0.000 0.000	X Y Z	0 -208 0	0.000 0.000 0.000
		T1	down right	0.000 0.000	X Y Z	-173 0.000 0.137	-0.137 0.000 0.000
		P1	down right	0.000 0.000	X Y Z	-3 -0.003 -3	-0.002 -0.003 -0.002
		SUM	down right	208 249 0.000	X Y Z	-176 -208 -176	-0.139 -0.000 -0.139
		RESP	down left	0.000 0.000	X Y Z	127 0.000 0.127	0.127 0.000 0.127
		TOTAL	down left	208 429 0.000	X Y Z	303 208 303	0.266 0.000 0.266
A06		GR	down	191 0.000	X	0	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	L O C A L			G L O B A L		
			Dim	Force	Deform	Dim	Force	Deform
A05 1 Stiff	Guide	T1	left	0	0.000	Y	-191	0.000
			down left	125	0.000	X	89	-0.257
		P1	left		0.000	X	2	-0.004
			down left	3	0.000	Y	2	0.004
		SUM	down left	191	0.000	X	91	-0.260
			down left	128	0.000	Y	-191	0.000
		RESP	down left	71	0.000	X	50	0.127
			down left	191	0.000	Y	50	0.127
		TOTAL	down left	191	0.000	X	141	0.388
			down left	199	0.000	Y	141	0.388
A07 A06 1 Stiff	Guide	GR	down right	195	0.000	X	0	0.000
			down right	0	0.000	Y	-195	0.000
		T1	down right	182	0.000	X	-129	-0.377
			down right		0.000	Y	-129	0.377
		P1	down right	5	0.000	X	-4	-0.005
			down right		0.000	Y	-4	0.005
		SUM	down right	195	0.000	X	-132	-0.382
			down right	187	0.000	Y	-132	0.382
		RESP	down left	5	0.000	X	3	0.127
			down left		0.000	Y	3	0.127
A08 A08 2 Guide	Guide	TOTAL	down left	195	0.000	X	136	0.509
			down left	192	0.000	Y	195	0.000
		GR	down left	196	0.000	X	0	0.000
			down left	0	0.000	Y	-196	0.000

A08 2 Guide

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL Dim	Force	Deform
Stiff	:RIGID					Z	0	0.000
T1			down	0.000	0.000	X	331	-0.349
			left	469	0.000	Y	331	0.643
P1			down	0.000	0.000	Z	7	-0.007
			left	10	0.000	X	7	0.007
SUM			down	196	0.000	X	338	-0.356
			left	478	0.000	Y	-338	0.650
RESP			down	40	0.000	Z	28	0.128
			left	196	0.000	X	366	0.484
TOTAL			down	518	0.000	Y	-366	0.778
			left	146	0.000	Z	-146	0.000
GR			back	0.000	0.000	X	0.000	0.000
A09 1	Inclined					Y	0.139	0.000
Stiff	:RIGID					Z	0.000	1.356
T1			back	0.000	0.000	X	0.002	0.000
			back	0.000	0.000	Y	0.000	0.018
P1			back	0.000	0.000	Z	0.140	0.000
			back	146	0.000	X	-146	1.374
SUM			back	0.000	0.000	Y	0.109	0.000
RESP			back	0.000	0.000	Z	0.146	0.269
TOTAL			back	146	0.000	X	146	1.520
			back	108	0.000	Y	-108	0.000
GR			back	0.000	0.000	Z	0.000	0.000
A11 1	Inclined					X	0.000	0.000
Stiff	:RIGID					Y	0.000	0.000

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2. AUTOPIPE+4.60 RESULT PAGE 47

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn Force Deform
T1			back	0.000		X 0.155 Y 0.000 Z 1.360
P1			back	0.000		X 0.002 Y 0.000 Z 0.017
SUM			back	108 0.000		X 0.157 Y 0.000 Z 1.358
RESP			back	0.000		X 0.097 Y 0.000 Z 0.097
TOTAL			back	108 0.000		X 0.254 Y 0.000 Z 1.455
GR	A12 2 Guide Stiff :RIGID		down left	195 0.000 0 0.000		X 0 Y -195 Z 0
T1			down left	547 0.000		X -387 Y 0.000 Z 387
P1			down left	10 0.000		X -7 Y 0.000 Z 7
SUM			down left	195 0.000 556 0.000		X -393 Y -195 Z 393
RESP			down left	97 0.000		X 68 Y 0.000 Z 68
TOTAL			down left	195 0.000 653 0.000		X 462 Y 195 Z 462
GR	A13 1 Guide Stiff :RIGID		down left	216 0.000 0 0.000		X 0 Y -216 Z 0
T1			down	0.000		X 145 0.413

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2. AUTOPIPE+4.60 RESULT PAGE 48

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL Dirn Force Deform	GLOBAL Dirn Force Deform
			right	205 0.000		Y -145 0.631	
P1			down right	0.000 4 0.000		X 3 0.007 Y -3 0.007	
SUM			down right	216 0.000 209 0.000		X 148 0.420 Y -216 0.638 Z -148 0.638	
RESP			down left	0.000 45 0.000		X 32 0.000 Y 32 0.000	
TOTAL			down left	216 0.000 254 0.000		X 180 0.420 Y 216 0.000 Z 180 0.638	
GR	A14 1 Guide Stiff :RIGID		down left	211 0.000 0 0.000		X 0 0.000 Y -211 0.000	
T1			down left	16 0.000		X -11 0.311 Y 11 0.473	
P1			down left	1 0.000		X -1 0.005	
SUM			down left	211 0.000 17 0.000		X -12 0.316 Y -211 0.000 Z 12 0.478	
RESP			down left	12 0.000		X 9 0.000 Y 9 0.000	
TOTAL			down left	211 0.000 29 0.000		X 20 0.316 Y 211 0.000 Z 20 0.478	
GR	A15 1 Guide Stiff :RIGID		down left	212 0.000 0 0.000		X 0 0.000 Y -212 0.000 Z 0 0.000	
T1			down left	33 0.000		X -23 0.261	

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 49

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
P1		down right	0	0.000	Z	23 0.261
					X	0 0.003
					Y	0 0.003
					Z	0 0.003
SUM		down left	212 33	0.000 0.000	X	-23 0.265
					Y	-212 0.000
					Z	-23 0.265
RESP		down left	3	0.000	X	2 0.000
					Y	0 0.000
					Z	2 0.000
TOTAL		down left	212 36	0.000 0.000	X	26 0.265
					Y	212 0.000
					Z	26 0.265
GR		down left	212 0	0.000 0.000	X	0 0.000
					Y	-212 0.000
					Z	0 0.000
T1		down right	23	0.000	X	16 0.131
					Y	0 0.000
					Z	-16 0.131
P1		down left	0	0.000	X	0 0.002
					Y	0 0.000
					Z	0 0.002
SUM		down right	212 23	0.000 0.000	X	16 0.132
					Y	-212 0.000
					Z	-16 0.132
RESP		down left	1	0.000	X	1 0.000
					Y	0 0.000
					Z	1 0.000
TOTAL		down left	212 24	0.000 0.000	X	17 0.132
					Y	212 0.000
					Z	17 0.132
GR		down right	212 1	0.000 0.000	X	0 0.000
					Y	-212 0.000
					Z	0 0.000
T1		up right	0 11	0.000 0.000	X	8 -0.130
					Y	0 0.000
					Z	-8 -0.130

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 50

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
P1		up right	0	0.000	X	0 -0.002
					Y	0 0.000
					Z	0 -0.002
SUM		down right	212 12	0.000 0.000	X	9 -0.132
					Y	-212 0.000
					Z	-9 -0.132
RESP		down left	0	0.000	X	3 0.000
					Y	-3 0.000
					Z	3 0.000
TOTAL		down left	212 17	0.000 0.000	X	12 0.132
					Y	212 0.000
					Z	12 0.132
GR		down left	210 2	0.000 0.000	X	-1 0.000
					Y	-210 0.000
					Z	1 0.000
T1		down left	0 41	0.000 0.000	X	-29 -0.260
					Y	0 0.000
					Z	29 -0.260
P1		down left	0	0.000	X	0 -0.003
					Y	0 0.000
					Z	0 -0.003
SUM		down left	211 43	0.000 0.000	X	-31 -0.263
					Y	-211 0.000
					Z	-31 -0.263
RESP		down left	0	0.000	X	12 0.000
					Y	0 0.000
					Z	12 0.000
TOTAL		down left	211 61	0.000 0.000	X	43 0.264
					Y	211 0.000
					Z	43 0.264
GR		down right	218 8	0.000 0.000	X	5 0.000
					Y	-218 0.000
					Z	-5 0.000
T1		up right	2 151	0.000 0.000	X	106 -0.390
					Y	-106 -0.390
					Z	-106 -0.390
P1		up	0	0.000	X	1 -0.005

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL		Dirn	GLOBAL	
				Force	Deform		Force	Deform
	SUM		right	2	0.000	Y	0	0.000
			down	217	0.000	X	113	-0.395
			right	160	0.000	Y	-217	0.000
			left	65	0.000	Z	-113	-0.395
	RESP		down	1	0.000	X	46	0.001
			left	65	0.000	Y	1	0.000
			down	218	0.000	X	159	0.396
			left	225	0.000	Z	159	0.396
A21 A21 1 Stiff	Guide :RIGID		down	182	0.000	X	-19	0.000
			left	27	0.000	Y	-182	0.000
			down	8	0.000	X	-354	-0.520
			left	501	0.000	Z	354	-0.520
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A22 A22 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A23 A23 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A24 A24 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A25 A25 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A26 A26 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A27 A27 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A28 A28 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A29 A29 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A30 A30 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A31 A31 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A32 A32 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528
A33 A33 1 Stiff	Inclined :RIGID		back	143	0.000	X	-0.009	0.010
			down	198	0.000	Y	-143	0.000
			left	701	0.000	Z	198	0.000
			down	143	0.000	X	-0.009	0.010
	T1		down	29	0.000	X	-0.010	-0.406
			left	701	0.000	Z	29	-0.406
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	P1		down	0	0.000	X	-5	-0.007
			left	7	0.000	Y	0	0.000
			down	191	0.000	X	-378	-0.527
			left	534	0.000	Z	378	-0.527
	RESP		down	7	0.000	X	118	0.001
			left	167	0.000	Y	7	0.000
			down	198	0.000	X	496	0.528
			left	701	0.000	Z	496	0.528</

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL	
						Dim	Force
SUM		back	61	0.000		X	-61
						Y	-0.000
						Z	-0.266
RESP		back	20	0.000		X	0.231
						Y	0.000
						Z	0.169
TOTAL		back	81	0.000		X	0.340
						Y	0.000
						Z	0.415
GR		down	190	0.000		X	0.037
		right	26	0.000		Y	-0.006
						Z	-0.037
T1		down	31	0.000		X	0.356
		right	507	0.000		Y	-0.192
						Z	-0.361
P1		down	0	0.000		X	5
		right	7	0.000		Y	0
						Z	-5
SUM		down	222	0.000		X	363
		right	539	0.000		Y	-221
						Z	-400
RESP		down	21	0.000		X	118
		left	166	0.000		Y	17
						Z	117
TOTAL		down	244	0.000		X	481
		left	705	0.000		Y	242
						Z	516
GR		down	240	0.000		X	-22
		left	2	0.000		Y	-238
						Z	-18
T1		up	38	0.000		X	-176
		left	254	0.000		Y	38
						Z	183
P1		up	1	0.000		X	-2
		left	3	0.000		Y	1
						Z	2
SUM		down	201	0.000		X	-200
							-0.297

A28
A28 1
Stiff

A29
A29 1
Stiff

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	LOCAL		GLOBAL	
						Dim	Force	Dim	Force
RESP			left	260	0.000	Y	-199	Y	-199
						Z	-0.297		-0.297
TOTAL			down	218	0.000	X	268	X	268
			left	355	0.000	Y	217	Y	217
						Z	234	Z	234
GR			down	185	0.000	X	-27	X	-27
			left	16	0.000	Y	-184	Y	-184
						Z	-4	Z	-4
T1			down	76	0.000	X	394	X	394
			right	567	0.000	Y	-76	Y	-76
						Z	-407	Z	-407
P1			down	1	0.000	X	5	X	5
			right	8	0.000	Y	-1	Y	-1
						Z	-5	Z	-5
SUM			down	262	0.000	X	373	X	373
			right	558	0.000	Y	-260	Y	-260
						Z	-416	Z	-416
RESP			down	26	0.000	X	112	X	112
			left	157	0.000	Y	40	Y	40
						Z	110	Z	110
TOTAL			down	288	0.000	X	484	X	484
			left	714	0.000	Y	286	Y	286
						Z	526	Z	526
GR			back	125	0.000	X	-125	X	-125
						Y	0.000	Y	0.000
						Z	0.042	Z	0.042
T1			forw	76	0.000	X	-0.410	X	-0.410
						Y	0.000	Y	0.000
						Z	-0.716	Z	-0.716
P1			forw	1	0.000	X	-0.005	X	-0.005
						Y	0.000	Y	0.000
						Z	-0.009	Z	-0.009
SUM			back	48	0.000	X	-0.383	X	-0.383
						Y	0.000	Y	0.000
						Z	-0.000	Z	-0.000

A30
A30 1
Stiff

A31
A31 1
Stiff

TRAN-SP PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 55

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		RESP	back	28 0.000	X	-0.684
		TOTAL	back	76 0.000	X	0.237
					Y	0.000
					Z	0.198
		GR	back	83 0.000	X	0.621
					Y	0.000
					Z	0.882
A33 A33 A33	1 Inclined Stiff		back	83 0.000	X	0.028
					Y	0.000
					Z	0.023
		T1	back	7 0.000	X	-0.365
					Y	0.000
					Z	-0.192
		P1	back	0 0.000	X	-0.005
					Y	0.000
					Z	-0.003
		SUM	back	90 0.000	X	-0.342
					Y	0.000
					Z	-0.172
		RESP	back	29 0.000	X	0.248
					Y	0.000
					Z	0.257
		TOTAL	back	119 0.000	X	0.590
					Y	0.000
					Z	0.429
		GR	back	72 0.000	X	0.014
					Y	0.000
					Z	0.009
		T1	forw	93 0.000	X	-0.022
					Y	0.000
					Z	0.222
		P1	forw	1 0.000	X	0.000
					Y	0.000
					Z	0.003
		SUM	forw	21 0.000	X	-0.009
					Y	0.000
					Z	0.234

TRAN-SP PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 56

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		RESP	back	32 0.000	X	0.224
		TOTAL	back	54 0.000	X	0.233
					Y	0.000
					Z	0.504
		GR	back	142 0.000	X	0.009
					Y	0.000
					Z	-0.009
A36 A36 A36	1 Inclined Stiff		back	17 0.000	X	0.032
					Y	0.000
					Z	0.701
		P1	back	0 0.000	X	0.000
					Y	0.000
					Z	0.009
		SUM	back	159 0.000	X	0.042
					Y	0.000
					Z	0.701
		RESP	back	5 0.000	X	0.199
					Y	0.000
					Z	0.199
		TOTAL	back	164 0.000	X	0.241
					Y	0.000
					Z	0.901
		GR	down right	199 0.000	X	14 0.000
					Y	-199 0.000
					Z	-14 0.000
		T1	up left	0 0.000	X	-425 0.000
					Y	0 0.000
					Z	425 0.260
		P1	down left	8 0.000	X	-6 0.003
					Y	0 0.000
					Z	6 0.003
		SUM	down left	199 0.000	X	-417 0.264
					Y	-199 0.000
					Z	417 0.264
		RESP	down	0 0.000	X	123 0.000

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 57

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
			left	173	0.000	Y 0 0.000
		TOTAL	down left	199 763	0.000 0.000	X 540 0.264 Y 199 0.000 Z 540 0.264
A38 A39 1 Stiff :RIGID	Guide :RIGID	GR	down left	215 7	0.000 0.000	X -5 0.000 Y -215 0.000 Z 5 0.000
		T1	down right	0 217	0.000 0.000	X 154 0.130 Y 0 0.000 Z -154 0.130
		P1	up right	0 3	0.000 0.000	X 2 0.002 Y 0 0.000 Z -2 0.002
		SUM	down right	215 214	0.000 0.000	X 151 0.132 Y -215 0.000 Z -151 0.132
		RESP	down left	0 87	0.000 0.000	X 62 0.000 Y 0 0.000 Z 62 0.000
		TOTAL	down left	216 301	0.000 0.000	X 213 0.132 Y 216 0.000 Z 215 0.132
A40 A40 1 Stiff :RIGID	Guide :RIGID	GR	down left	62 0	0.000 0.000	X 0 0.000 Y -62 0.000 Z 0 0.000
		T1	down right	413	0.000	X 292 -0.129 Y 0.000 Z -292 -0.129
		P1	down right	7	0.000	X 5 -0.002 Y 0.000 Z -5 -0.002
		SUM	down right	62 420	0.000 0.000	X 297 -0.131 Y -62 0.000 Z -297 -0.131
		RESP	down left	42 0	0.000 0.000	X 0 0.000 Y 42 0.000

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 58

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		TOTAL	down left	104 420	0.000 0.000	X 297 0.131 Y 104 0.000 Z 297 0.131
A41 A41 1 Stiff :RIGID	Guide :RIGID	GR	down right	464 0	0.000 0.000	X 0 0.000 Y -464 0.000 Z 0 0.000
		T1	down left	934	0.000	X -660 -0.370 Y 0.000 Z 660 -0.148
		P1	down left	14	0.000	X -10 -0.003 Y 0.000 Z 10 -0.003
		SUM	down left	464 948	0.000 0.000	X -670 -0.373 Y -464 0.000 Z 670 -0.151
		RESP	down left	68 0	0.000 0.000	X 0 0.000 Y 68 0.000 Z 0 0.000
		TOTAL	down left	532 948	0.000 0.000	X 670 0.373 Y 532 0.000 Z 670 0.151
A45 A45 1 Stiff :RIGID	Guide :RIGID	GR	down left	450 0.000	0.000 0.000	X -450 0.000 Y 0.000 Z 0.000
		T1	down left	807	0.000	X -807 -0.151 Y 0.000 Z 0.801
		P1	down left	12	0.000	X -12 0.000 Y 0.000 Z 0.010
		SUM	down left	450 819	0.000 0.000	X -819 -0.151 Y -450 0.000 Z 0.811
		RESP	down left	56	0.000	X 56 0.000 Y 0.000 Z 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm	Deform	GLOBAL Dirm	Deform
		TOTAL	down left	507 819	X Z	0.000 0.151 0.891
A66 A46 Stiff	1 Guide :RIGID	GR	down left	129 0.000	X Y	0.000 0.000 -129 0.000
		T1	down right	336 0.000	X Z	0.000 -0.112 0.000 0.595
		P1	down right	5 0.000	X Z	0.000 0.000 0.008
		SUM	down right	129 341	X Y	0.000 -0.112 -129 0.603
		RESP	down left	31 0.000	X Z	0.000 0.000 0.000
		TOTAL	down left	160 341	X Y	0.112 0.000 160 0.603
A47 A47 Stiff	1 Guide :RIGID	GR	down left	262 0.000	X Y	0.000 0.000 -262 0.000
		T1	down left	74 0.000	X Y	-0.073 0.000 0.389
		P1	down left	1 0.000	X Z	0.000 0.000 0.005
		SUM	down left	262 75	X Y	-0.073 0.000 -262 0.394
		RESP	down left	8 0.000	X Z	0.000 0.000 8 0.000
		TOTAL	down	271 0.000	X	75 0.073

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm	Deform	GLOBAL Dirm	Deform
		TOTAL	left	75	0.000	Z 271 0.394
A48 A48 Stiff	1 Guide :RIGID	GR	down left	214 0.000	X Y	0.000 0.000 -214 0.000
		T1	down right	1 0.000	X Z	0.000 0.000 1 0.195
		P1	down right	0 0.000	X Y	0.000 0.000 0.000
		SUM	down right	214 2	X Y	0.000 0.000 -214 0.197
		RESP	down left	3 0.000	X Z	0.000 0.000 3 0.000
		TOTAL	down left	217 2	X Y	0.000 0.000 217 0.197
A50 A50 Stiff	1 Guide :RIGID	GR	down left	225 0.000	X Y	0.000 0.000 -225 0.000
		T1	down right	3 0.000	X Z	0.000 0.000 3 -0.196
		P1	down right	0 0.000	X Y	0.000 0.000 0 -0.003
		SUM	down right	225 4	X Y	0.000 0.000 -225 -0.198
		RESP	down left	2 0.000	X Z	0.000 0.000 2 0.000
		TOTAL	down left	225 5	X Y	0.000 0.000 225 0.000

PROJECT 720 ES-220-43 M4, NS ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOTYPE4.60 RESULT PAGE 61

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
A51	GR	down	225	0.000	0.198	Z		
A51	1 Guide	left		0.000	0.000	X	-225	0.000
A51	Stiff	left		0.000	0.000	Y		
T1		down	12	0.000	-0.392	X	-12	0.000
		left		0.000	0.000	Y		
P1		down		0.000	0.000	Z	0	0.000
		left	0	0.000	0.000	X		
SUM		down	225	0.000	-0.005	Z		
		left	12	0.000	0.000	Y	-12	0.000
RESP		down		0.000	0.000	Z	-225	0.000
		left	6	0.000	0.000	X	6	0.000
TOTAL		down	225	0.000	0.000	Z	19	0.000
		left	19	0.000	0.000	Y	225	0.000
GR		down	227	0.000	0.397	Z		
	1 Guide	left		0.000	0.000	X	-227	0.000
	Stiff	left		0.000	0.000	Y		
T1		down		0.000	0.000	Z	46	0.000
		right	46	0.000	0.000	X		
P1		down	1	0.000	-0.588	Z	1	0.000
		right		0.000	0.000	Y		
SUM		down	227	0.000	-0.008	Z	46	0.000
		right	46	0.000	0.000	X	-227	0.000
RESP		down	23	0.000	-0.595	Z	23	0.000
		left		0.000	0.000	X		
TOTAL		down	227	0.000	0.000	Z	69	0.000
		left	69	0.000	0.000	X	227	0.000
						Y		
						Z		

PROJECT 720 ES-220-43 M4, NS ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOTYPE4.60 RESULT PAGE 62

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
A53	GR	down	220	0.000	0.000	X		0.000
A53	1 Guide	left		0.000	0.000	Y	-220	0.000
A53	Stiff	left		0.000	0.000	Z		0.000
T1		down		0.000	0.000	X	-172	0.000
		left	172	0.000	0.000	Y		0.000
P1		down		0.000	-0.784	Z		0.000
		left	2	0.000	0.000	X	-2	0.000
SUM		down	220	0.000	0.000	Z		-0.010
		left	174	0.000	0.000	X	-174	0.000
RESP		down		0.000	0.000	Y	-220	0.000
		left	87	0.000	0.000	Z		-0.794
TOTAL		down	220	0.000	0.000	X	87	0.000
		left	261	0.000	0.000	Y		0.000
GR		down	244	0.000	0.000	Z	261	0.000
	1 Guide	left		0.000	0.000	X	-244	0.000
	Stiff	left		0.000	0.000	Y		0.000
T1		down		0.000	0.000	Z	465	0.000
		right	465	0.000	0.000	X		0.000
P1		down		0.000	-0.980	Z		0.000
		right	6	0.000	0.000	X	6	0.000
SUM		down	244	0.000	0.000	Y		-0.013
		right	471	0.000	0.000	Z	471	0.000
RESP		down		0.000	0.000	X	-244	0.000
		left	147	0.000	0.000	Y		-0.992
TOTAL		down		0.000	0.000	Z	147	0.000
		left	147	0.000	0.000	X		0.000
GR		down		0.000	0.000	Y		0.000
		back	176	0.000	0.000	Z	618	0.000
						X	244	0.000
						Y		0.000
						Z		0.992
A54						X		0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Force
AS56 Stiff	Inclined :RIGID					
T1	back	0.000	X	0.495	0.000	-176
			Y	0.000	0.000	
			Z	-1.183		
P1	back	0.000	X	0.007		
			Y	0.000		
			Z	-0.015		
SUM	back	176	X	0.502		
			Y	0.000		
			Z	-1.199		
RESP	back	0.000	X	0.536		
			Y	0.000		
			Z	0.000		
TOTAL	back	176	X	1.038		
			Y	0.000		
			Z	1.199		
GR	back	106	X	0.000		
			Y	0.000		
			Z	-106		
T1	back	0.000	X	0.024		
			Y	0.000		
			Z	-0.625		
P1	back	0.000	X	0.000		
			Y	0.000		
			Z	-0.008		
SUM	back	106	X	0.024		
			Y	0.000		
			Z	-0.631		
RESP	back	0.000	X	0.661		
			Y	0.000		
			Z	0.095		
TOTAL	back	106	X	0.685		
			Y	0.000		
			Z	0.726		
GR	back	105	X	0.000		
			Y	0.000		
			Z	-105		

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Force
AS58 Stiff	Inclined :RIGID					
T1	back	0.000	X	-0.089		
			Y	0.000		
			Z	1.085		
P1	back	0.000	X	-0.001		
			Y	0.000		
			Z	0.014		
SUM	back	105	X	-0.090		
			Y	0.000		
			Z	1.099		
RESP	back	0.000	X	0.661		
			Y	0.000		
			Z	0.094		
TOTAL	back	105	X	0.752		
			Y	0.000		
			Z	1.193		
GR	back	178	X	0.000		
			Y	0.000		
			Z	-178		
T1	back	0.000	X	-0.554		
			Y	0.000		
			Z	1.640		
P1	back	0.000	X	-0.007		
			Y	0.000		
			Z	0.021		
SUM	back	178	X	-0.561		
			Y	0.000		
			Z	1.662		
RESP	back	0.000	X	0.538		
			Y	0.000		
			Z	0.000		
TOTAL	back	178	X	1.099		
			Y	0.000		
			Z	1.662		
GR	down -left	250	X	0.000		
			Y	0.000		
			Z	-250		

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
T1			down left	463 0.000 Z	-463 0.000 Z	1.434
P1			down left	6 0.000 Z	-6 0.000 Z	0.019
SUM			down left	250 469 0.000 Z	-469 -250 0.000 Z	1.452
RESP			down left	138 0.000 Z	138 0.000 Z	0.000
TOTAL			down left	250 607 0.000 Z	467 250 0.000 Z	1.453
GR	A60 1 A60 1 A61 Stiff	Guide :RIGID	down left	231 0.000 Z	-231 0.000 Z	0.000
T1			down right	168 0.000 Z	168 0.000 Z	1.229
P1			down right	2 0.000 Z	2 0.000 Z	0.016
SUM			down right	231 171 0.000 Z	171 -231 0.000 Z	1.245
RESP			down left	80 0.000 Z	80 0.000 Z	0.000
TOTAL			down left	231 250 0.000 Z	250 231 0.000 Z	1.245
GR	A61 1 A61 1 A63 Stiff	Guide :RIGID	down left	237 0.000 Z	-237 0.000 Z	0.000
T1			down	0.000 X	-45 0.000 X	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Lead Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
P1			down left	45 0.000 Z	0.000 X -1	1.024
SUM			down left	237 46 0.000 Z	0.000 X -46 -237	1.037
RESP			down left	21 0.000 Z	0.000 X 21	0.000
TOTAL			down left	237 67 0.000 Z	0.000 X 67 237	1.038
GR	A62 1 A62 1 A63 Stiff	Guide :RIGID	down left	235 0.000 Z	0.000 X -235	0.000
T1			down right	12 0.000 Z	0.000 X 12	0.000
P1			down right	0 0.000 Z	0.000 X 0	0.000
SUM			down right	235 12 0.000 Z	0.000 X -235 0.830	0.000
RESP			down left	6 0.000 Z	0.000 X 6	0.000
TOTAL			down left	235 18 0.000 Z	0.000 X 235	0.830
GR	A63 1 A63 1 A65 Stiff	Guide :RIGID	down left	236 0.000 Z	0.000 X -236	0.000
T1			down left	3 0.000 X	0.000 X -3	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
P1		down left		0	0.000	X	0	0.614
SUM		down left		235 3	0.000 0.000	X Y	-3 -236	0.008 0.622
RESP		down left		2	0.000	X	2	0.000
TOTAL		down left		235 5	0.000 0.000	X Y	5 236	0.000 0.623
GR		down left		235	0.000	X	-235	0.000
T1		down right		1	0.000	X	1	0.000
P1		down right		0	0.000	X	0	0.410
SUM		down right		235 1	0.000 0.000	X Y	1 -235	0.000 0.415
RESP		down left		0	0.000	X	0	0.000
TOTAL		down left		235 1	0.000 0.000	X Y	1 235	0.000 0.415
GR		down left		235	0.000	X	-235	0.000
T1		down left		0	0.000	X	0	0.000

A64
A65 1
Stiff :RIGID

A65
A65 1
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
P1		down left		0	0.000	X	0	0.003
SUM		down left		235 0	0.000 0.000	X Y	0 -235	0.000 0.207
RESP		down left		0	0.000	X	0	0.000
TOTAL		down left		235 0	0.000 0.000	X Y	0 235	0.000 0.208
GR		down left		235	0.000	X	-235	0.000
T1		down right		0	0.000	X	0	0.000
P1		down right		0	0.000	X	0	-0.205
SUM		down right		235 0	0.000 0.000	X Y	0 -235	0.000 0.207
RESP		down left		0	0.000	X	0	0.000
TOTAL		down left		235 0	0.000 0.000	X Y	0 235	0.000 0.207
GR		down left		235	0.000	X	-235	0.000
T1		up left		1	0.000	X	-1	0.000
P1		up		0	0.000	X	0	0.000

A67
A67 1
Stiff :RIGID

A68
A68 1
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Y	Z	
A69 A69 1 Stiff	SUM	down	left	0	0.000	0	0	-0.005
		down	left	235	0.000	X	-1	0.000
		down	left	1	0.000	Y	-235	0.000
	RESP	down	left	0	0.000	X	0	-0.415
		down	left	0	0.000	Y	0	0.000
		down	left	0	0.000	Z	0	0.000
	TOTAL	down	left	235	0.000	X	1	0.000
		down	left	1	0.000	Y	235	0.000
		down	left	0	0.000	Z	0	0.415
	GR	down	right	236	0.000	X	0	0.000
A70 A70 1 Stiff	SUM	down	right	0	0.000	Y	-236	0.000
		down	right	0	0.000	Z	0	0.000
		down	right	0	0.000	X	4	0.000
	RESP	down	left	0	0.000	Y	0	-0.614
		down	left	0	0.000	Z	0	0.000
		down	left	0	0.000	X	0	0.000
	TOTAL	down	left	236	0.000	X	4	0.000
		down	left	0	0.000	Y	0	0.000
		down	left	0	0.000	Z	0	-0.622
	P1	down	right	0	0.000	X	0	0.000
A71 A71 1 Stiff	SUM	down	right	0	0.000	Y	0	0.000
		down	right	0	0.000	Z	0	0.000
		down	right	0	0.000	X	0	0.000
	RESP	down	left	0	0.000	Y	0	0.000
		down	left	0	0.000	Z	0	0.000
		down	left	0	0.000	X	0	0.000
	TOTAL	down	left	236	0.000	X	5	0.000
		down	left	0	0.000	Y	236	0.000
		down	left	0	0.000	Z	0	0.622
	GR	down	left	235	0.000	X	0	0.000
A72 A72 1 Stiff	SUM	down	left	0	0.000	Y	-235	0.000
		down	left	0	0.000	Z	0	0.000
		down	left	0	0.000	X	0	0.000
	RESP	up	left	0	0.000	X	-13	0.000
		up	left	13	0.000	Y	0	0.000
		up	left	0	0.000	Z	0	-0.819
	TOTAL	up	left	0	0.000	X	0	0.000
		up	left	0	0.000	Y	0	0.000
		up	left	0	0.000	Z	0	0.000
	P1	up	left	0	0.000	X	0	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	LOCAL			GLOBAL		
						Y	Z		Dim	Force	Deform
A71 A71 1 Stiff	SUM	down	left	235	0.000	X	-13	0.000	Z	-0.011	
		down	left	13	0.000	Y	-235	0.000			
		down	left	0	0.000	Z	0	-0.829			
	RESP	down	left	0	0.000	X	6	0.000			
		down	left	0	0.000	Y	0	0.000			
		down	left	0	0.000	Z	0	0.000			
	TOTAL	down	left	235	0.000	X	19	0.000			
		down	left	19	0.000	Y	235	0.000			
		down	left	0	0.000	Z	0	0.829			
	GR	down	right	237	0.000	X	0	0.000			
A72 A72 1 Stiff	SUM	down	right	0	0.000	Y	-237	0.000			
		down	right	0	0.000	Z	0	0.000			
		down	right	0	0.000	X	0	0.000			
	RESP	down	right	1	0.000	X	50	0.000			
		down	right	50	0.000	Y	-1	0.000			
		down	right	0	0.000	Z	-1.023	0.000			
	TOTAL	down	right	1	0.000	X	1	0.000			
		down	right	0	0.000	Y	0	0.000			
		down	right	0	0.000	Z	0	0.013			
	P1	down	right	0	0.000	X	0	0.000			
A73 A73 1 Stiff	SUM	down	right	237	0.000	X	50	0.000			
		down	right	50	0.000	Y	-237	0.000			
		down	right	0	0.000	Z	0	-1.037			
	RESP	down	left	0	0.000	X	22	0.000			
		down	left	22	0.000	Y	0	0.000			
		down	left	0	0.000	Z	0	0.000			
	TOTAL	down	left	237	0.000	X	72	0.000			
		down	left	72	0.000	Y	237	0.000			
		down	left	0	0.000	Z	0	1.037			
	GR	down	left	231	0.000	X	0	0.000			
A74 A74 1 Stiff	SUM	down	left	0	0.000	Y	-231	0.000			
		down	left	0	0.000	Z	0	0.000			
		down	left	0	0.000	X	0	0.000			
	RESP	up	left	2	0.000	X	-186	0.000			
		up	left	186	0.000	Y	0	0.000			
		up	left	0	0.000	Z	0	-1.228			
	TOTAL	up	left	2	0.000	X	-2	0.000			
		up	left	0	0.000	Y	0	0.000			
		up	left	0	0.000	Z	0	-0.016			
	P1	up	left	0	0.000	X	-2	0.000			

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Dim	Force	Deform
		SUM	down left	229 189	0.000 0.000	X Y Z	-189 -229	0.000 0.000 -1.244
		RESP	down left	0 82	0.000 0.000	X Y Z	82 0	0.000 0.000 0.000
		TOTAL	down left	229 271	0.000 0.000	X Y Z	271 229	0.000 0.000 1.244
A73 A73 1 Stiff	Inclined :RIGID	GR	down right	250 0	0.000 0.000	X Y Z	0 -250	0.000 0.000 0.000
		T1	down right	517 9	0.000 0.000	X Y Z	517 -9	0.000 0.000 -1.433
		P1	down right	0 7	0.000 0.000	X Y Z	7 0	0.000 0.000 -0.019
		SUM	down right	259 524	0.000 0.000	X Y Z	524 -259	0.000 0.000 -1.451
		RESP	down left	0 142	0.000 0.000	X Y Z	142 0	0.000 0.000 0.000
		TOTAL	down left	259 666	0.000 0.000	X Y Z	666 259	0.000 0.000 1.452
A74 A74 1 Stiff	Inclined :RIGID	GR	back	178	0.000	X Y Z	-178	0.000 0.000 0.000
		T1	back	101	0.000	X Y Z	-101	0.591 0.000 -1.639
		P1	back	1	0.000	X Y Z	-1	0.008 0.000 -0.021
		SUM	back	280	0.000	X		0.599

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL		
						Dim	Force	Deform
		RESP	back	3	0.000	X Y Z	-280 -1.861	0.000 0.000 0.000
		TOTAL	back	283	0.000	X Y Z	283 1.861	0.000 0.000 0.000
A76 A76 1 Stiff	Inclined :RIGID	GR	back	106	0.000	X Y Z	-106 0.000	-0.001 0.000 0.001
		T1	forw	143	0.000	X Y Z	143 0.000	0.057 0.000 -0.985
		P1	forw	2	0.000	X Y Z	2 -0.013	0.001 0.000 0.001
		SUM	forw	39	0.000	X Y Z	39 0.000	0.057 0.000 -0.997
		RESP	back	3	0.000	X Y Z	3 0.000	0.680 0.000 0.097
		TOTAL	back	42	0.000	X Y Z	42 0.000	0.737 0.000 1.094
A76 A76 1 Stiff	Inclined :RIGID	GR	back	106	0.000	X Y Z	-106 0.000	-0.001 0.000 0.001
		T1	back	143	0.000	X Y Z	-143 0.000	-0.057 0.000 0.985
		P1	back	2	0.000	X Y Z	-2 0.000	-0.001 0.000 0.013
		SUM	back	250	0.000	X Y	-250 0.000	-0.058 0.000

TRAN-SP PROJECT H-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 73

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
A78 A78 1 Stiff	Inclined :RIGID					
RESP		back	3	0.000	Z	-0.999
					X	0.480
					Y	0.000
					Z	0.097
TOTAL		back	253	0.000	X	0.738
					Y	0.000
					Z	1.095
GR		back	178	0.000	X	0.000
					Y	0.000
					Z	-178
T1		forw	101	0.000	X	-0.591
					Y	0.000
					Z	1.839
P1		forw	1	0.000	X	-0.008
					Y	0.000
					Z	0.021
SUM		back	75	0.000	X	-0.598
					Y	0.000
					Z	1.861
RESP		back	3	0.000	X	0.553
					Y	0.000
					Z	0.000
TOTAL		back	78	0.000	X	1.152
					Y	0.000
					Z	1.661
GR		down right	250 0	0.000 0.000	X Y	0 -250
					Z	0.000
T1		up left	9 517	0.000 0.000	X Y	-517 9
					Z	1.433
P1		up left	0 7	0.000 0.000	X Y	-7 0
					Z	0.019
SUM		down left	242 524	0.000 0.000	X Y	-524 -242
					Z	1.451

A79
A79 1
Stiff

Guide
:RIGID

GR

T1

P1

SUM

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

P1

T1

GR

TOTAL

RESP

SUM

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 75

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
			left	22	0.000	Y	0	0.000
		TOTAL	down left	236 72	0.000 0.000	X Y Z	72 236	0.000 1.037
A82 A82 Stiff	1 Guide :RIGID	GR	down left	235 0	0.000 0.000	X Y Z	0 -235	0.000 0.000
		T1	down right	0 13	0.000 0.000	X Y Z	13 0	0.000 0.819
		P1	down right	0 0	0.000 0.000	X Y Z	0 0	0.000 0.011
		SUM	down right	235 13	0.000 0.000	X Y Z	13 -235	0.000 0.829
		RESP	down left	0 6	0.000 0.000	X Y Z	6 0	0.000 0.000
		TOTAL	down left	235 19	0.000 0.000	X Y Z	19 235	0.000 0.829
A83 A83 Stiff	1 Guide :RIGID	GR	down right	236 0	0.000 0.000	X Y Z	0 -236	0.000 0.000
		T1	up left	0 4	0.000 0.000	X Y Z	-4 0	0.000 0.614
		P1	up left	0 0	0.000 0.000	X Y Z	0 0	0.000 0.008
		SUM	down left	235 4	0.000 0.000	X Y Z	-4 -235	0.000 0.622
		RESP	down left	0 2	0.000 0.000	X Y Z	2 0	0.000 0.000

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4.60 RESULT PAGE 76

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
		TOTAL	down left	235 5	0.000 0.000	X Y Z	5 235	0.000 0.622
A84 A84 Stiff	1 Guide :RIGID	GR	down left	235 0	0.000 0.000	X Y Z	0 -235	0.000 0.000
		T1	down right	0 1	0.000 0.000	X Y Z	1 0	0.000 0.409
		P1	down right	0 0	0.000 0.000	X Y Z	0 0	0.000 0.005
		SUM	down right	235 1	0.000 0.000	X Y Z	1 -235	0.000 0.415
		RESP	down left	0 0	0.000 0.000	X Y Z	0 0	0.000 0.000
		TOTAL	down left	235 1	0.000 0.000	X Y Z	1 235	0.000 0.415
A85 A85 Stiff	1 Guide :RIGID	GR	down left	235 0	0.000 0.000	X Y Z	-235 0	0.000 0.000
		T1	up left	0 0	0.000 0.000	X Y Z	0 0	0.000 0.205
		P1	down left	0 0	0.000 0.000	X Y Z	0 0	0.000 0.003
		SUM	down left	235 0	0.000 0.000	X Y Z	0 -235	0.000 0.207
		RESP	down left	0 0	0.000 0.000	X Y Z	0 0	0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn Force	Deform
A87	1 Guide Stiff :RIGID	TOTAL	down left	235 0	0.000 0.000	X Y Z	0 235 0.207
	GR		down left	235	0.000 0.000	X Y Z	0 -235 0.000
	T1		down left	11	0.000 0.000	X Y Z	-11 0.000 -0.205
	P1		down right	0	0.000 0.000	X Y Z	0 0.000 -0.003
	SUM		down left	235 11	0.000 0.000	X Y Z	-11 -235 -0.208
	RESP		down left	0	0.000 0.000	X Y Z	0 0.000 0.000
	TOTAL		down left	235 11	0.000 0.000	X Y Z	11 235 0.208
A88	1 Guide Stiff :RIGID	TOTAL	down left	235	0.000 0.000	X Y Z	-235 0.000 0.000
	GR		down left	20	0.000 0.000	X Y Z	20 0.000 -0.411
	T1		down right	0	0.000 0.000	X Y Z	0 0.000 -0.005
	P1		down left	0	0.000 0.000	X Y Z	0 0.000 0.000
	SUM		down right	235 20	0.000 0.000	X Y Z	-20 -235 -0.416
	RESP		down left	1	0.000 0.000	X Y Z	1 0.000 0.000
	TOTAL		down	235	0.000	X	20 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn Force	Deform
A89	1 Guide Stiff :RIGID	GR	down left	236	0.000 0.000	X Y Z	0 -236 0.000
	T1		down left	17	0.000 0.000	X Y Z	-17 0.064 -0.616
	P1		down right	0	0.000 0.000	X Y Z	0 0.000 -0.008
	SUM		down left	236 16	0.000 0.000	X Y Z	-16 -236 -0.624
	RESP		down left	2	0.000 0.000	X Y Z	2 0.000 0.000
	TOTAL		down left	236 19	0.000 0.000	X Y Z	19 236 0.624
A90	1 Guide Stiff :RIGID	GR	down left	235	0.000 0.000	X Y Z	0 -235 0.000
	T1		down right	2	0.000 0.000	X Y Z	2 0.086 -0.821
	P1		down left	0	0.000 0.000	X Y Z	0 0.000 -0.011
	SUM		down right	235 2	0.000 0.000	X Y Z	2 -235 -0.832
	RESP		down left	9	0.000 0.000	X Y Z	9 0.000 0.001
	TOTAL		down left	235 11	0.000 0.000	X Y	11 235 0.086

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL Dim	Force	Deform
A91 A91 1 A91 1 Stiff	Guide :RIGID	GR	down Left	237 0.000	0.000 0.000	Z	0.833	
		T1	down right	19 0.000	0.107 0.000	X Y	19 -1.027	
		P1	down right	0 0.000	0.000 0.000	X Y	0 -0.013	
		SUM	down right	237 20	0.000 0.000	X Z	20 -237	
		RESP	down Left	34 0.000	0.000 0.000	X Y	34 0.001	
		TOTAL	down Left	237 53	0.000 0.000	X Y	53 237	
A92 A92 1 A92 1 Stiff	Guide :RIGID	GR	down Left	230 0.000	0.000 0.000	X Y	-230 0.000	
		T1	down Left	78 0.000	0.000 0.000	X Y	-78 0.129	
		P1	down Left	1 0.000	0.000 0.000	X Y	-1 -1.232	
		SUM	down Left	230 80	0.000 0.000	X Y	-80 -230	
		RESP	down Left	127 0.000	0.000 0.000	X Y	127 0.000	
		TOTAL	down Left	230 207	0.000 0.000	X Y	207 230	

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	LOCAL Dim	Force	Deform	GLOBAL Dim	Force	Deform
A93 A93 1 A93 1 Stiff	Guide :RIGID	GR	down left	255 0.000	0.000 0.000	down left	255 0.000	0.000 0.000	X Y	-255 0.000	
		T1	down right	225 0.000	0.000 0.000	down right	225 0.000	0.000 0.000	X Y	225 0.150	
		P1	down right	4 0.000	0.000 0.000	down right	4 0.000	0.000 0.000	X Y	4 -1.437	
		SUM	down right	255 229	0.000 0.000	down right	255 229	0.000 0.000	X Y	229 -255	
		RESP	down left	230 0.000	0.000 0.000	down left	230 0.000	0.000 0.000	X Y	230 0.000	
		TOTAL	down left	255 459	0.000 0.000	down left	255 459	0.000 0.000	X Y	459 255	
A94 A94 1 A94 1 Stiff	Inclined :RIGID	GR	back	168 0.000	0.000 0.000	back	168 0.000	0.000 0.000	X Y	-168 0.000	
		T1	back	0.000	0.000	back	0.000	0.000	X Y	0.400 0.000	
		P1	back	0.000	0.000	back	0.000	0.000	X Y	-1.644 0.006	
		SUM	back	168 0.000	0.000 0.000	back	168 0.000	0.000 0.000	X Y	-168 0.406	
		RESP	back	0.000	0.000	back	0.000	0.000	X Y	-1.666 0.818	
		TOTAL	back	168 0.000	0.000 0.000	back	168 0.000	0.000 0.000	X Y	168 0.000	
A96		GR	back	130 0.000	0.000 0.000	back	130 0.000	0.000 0.000	X	0.000	

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 83

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
T1			back	0.000		X Y Z	-0.965 0.000 1.144
P1			back	0.000		X Y Z	-0.007 0.000 0.015
SUM			back	164	0.000	X Y Z	-0.572 -0.006 1.159
RESP			back	0.000		X Y Z	0.810 0.000 0.001
TOTAL			back	164	0.000	X Y Z	1.382 0.000 1.160
GR	A102 A102.1 Guide Stiff		down left	241	0.000	X Y Z	0.000 -241 0.000
T1			down left	244	0.000	X Y Z	-0.140 0.000 0.944
P1			down left	4	0.000	X Y Z	0.000 0.000 0.012
SUM			down left	241 248	0.000	X Y Z	-0.140 0.000 0.956
RESP			down left	259	0.000	X Y Z	0.000 0.000 0.001
TOTAL			down left	241 508	0.000	X Y Z	0.140 0.000 0.957
GR	A103 A103.1 Guide Stiff		down left	209	0.000	X Y Z	0.000 0.000 0.000
T1			down	0.000		X	93 -0.112

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 84

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
P1			down right	2	0.000	X Y Z	0.000 0.000 0.755
SUM			down right	209 95	0.000 0.000	X Y Z	0.112 -209 0.765
RESP			down left	149	0.000	X Y Z	0.000 0.000 0.001
TOTAL			down left	209 243	0.000 0.000	X Y Z	0.112 243 0.765
GR	A104 A104.1 Guide Stiff		down left	218	0.000	X Y Z	0.000 -218 0.000
T1			down right	3	0.000	X Y Z	0.000 0.000 0.566
P1			down left	1	0.000	X Y Z	-1 0.000 0.007
SUM			down right	218 2	0.000 0.000	X Y Z	-0.084 -218 0.574
RESP			down left	40	0.000	X Y Z	0.000 0.000 0.000
TOTAL			down left	218 42	0.000 0.000	X Y Z	0.084 218 0.574
GR	A105 A105.1 Guide Stiff		down left	216	0.000	X Y Z	0.000 0.000 0.000
T1			down left	27	0.000	X Y	-27 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform.	GLOBAL Dim	Force	Deform.
P1		down right		0 0.000 0 0.000		Z	0 0.000 0 0.000	0.378
SUM		down left		216 0.000 26 0.000		X Y Z	-26 0.000 -216 0.000	0.005
RESP		down left		11 0.000 11 0.000		X Y Z	11 0.000 11 0.000	0.382
TOTAL		down left		216 0.000 37 0.000		X Y Z	37 0.000 216 0.000	0.383
GR		down left		217 0.000 0 0.000		X Y Z	-217 0.000 0 0.000	0.000
T1		down right		17 0.000 17 0.000		X Y Z	17 0.000 17 0.000	0.189
P1		down left		0 0.000 0 0.000		X Y Z	0 0.000 0 0.000	0.002
SUM		down right		217 0.000 17 0.000		X Y Z	17 0.000 -217 0.000	0.191
RESP		down left		3 0.000 3 0.000		X Y Z	3 0.000 3 0.000	0.000
TOTAL		down left		217 0.000 20 0.000		X Y Z	20 0.000 217 0.000	0.191
GR		down left		216 0.000 0 0.000		X Y Z	0 0.000 -216 0.000	0.000
T1		up right		9 0.000 1 0.000		X Y Z	1 0.000 9 0.000	-0.189

A106
A106.1
Stiff :RIGID

A108
A108.1
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform.	GLOBAL Dim	Force	Deform.
P1		up right		0 0.000 0 0.000		X Y Z	0 0.000 0 0.000	-0.002
SUM		down right		205 0.000 1 0.000		X Y Z	-205 0.000 -205 0.000	0.000
RESP		down left		0 0.000 0 0.000		X Y Z	0 0.000 0 0.000	-0.191
TOTAL		down left		205 0.000 2 0.000		X Y Z	2 0.000 205 0.000	0.191
GR		down right		225 0.000 0 0.000		X Y Z	-225 0.000 0 0.000	0.000
T1		down left		32 0.000 5 0.000		X Y Z	-32 0.000 -32 0.000	-0.377
P1		down left		0 0.000 0 0.000		X Y Z	0 0.000 0 0.000	-0.005
SUM		down left		258 0.000 5 0.000		X Y Z	-5 0.000 -258 0.000	0.000
RESP		down left		0 0.000 2 0.000		X Y Z	2 0.000 0 0.000	-0.382
TOTAL		down left		258 0.000 7 0.000		X Y Z	7 0.000 258 0.000	0.382
GR		down right		150 0.000 0 0.000		X Y Z	-150 0.000 0 0.000	0.000
T1		up right		135 0.000 64 0.000		X Y Z	64 0.000 135 0.000	-0.586
P1		up		2 0.000		X	0 0.000	0.000

A109
A109.1
Stiff :RIGID

A110
A110.1
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
		right		0	0.000	Z	-0.007
	SUM	down right		12 64	0.000 0.000	X Y	64 -12
	RESP	down left		0 24	0.000 0.000	X Y	-0.573 0
	TOTAL	down left		13 89	0.000 0.000	X Y	89 13
	GR	down left		124 0	0.000 0.000	X Y	0 -124
	T1	down left		163 108	0.000 0.000	X Y	-108 -163
	P1	down left		2 1	0.000 0.000	X Y	-1 -11
	SUM	down left		289 109	0.000 0.000	X Y	-109 -289
	RESP	down left		0 54	0.000 0.000	X Y	54 0
	TOTAL	down left		289 163	0.000 0.000	X Y	163 289
	GR	down right		198 0	0.000 0.000	X Y	0 -198
	T1	up right		58 133	0.000 0.000	X Y	133 58
	P1	up right		1 1	0.000 0.000	X Y	1 1

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL		GLOBAL	
						Dirn	Force	Dirn	Force
		SUM	down right					Z	-0.010
								X	135
								Y	-139
								Z	-9
		RESP	down left					X	138
								Y	1
								Z	0
		TOTAL	down left					X	273
								Y	140
								Z	9
		GR	down left					X	0
								Y	-212
								Z	-14
		T1	down left					X	-303
								Y	-42
								Z	-3
		P1	down left					X	-4
								Y	-1
								Z	0
		SUM	down left					X	-308
								Y	-212
								Z	-17
		RESP	down left					X	219
								Y	3
								Z	0
		TOTAL	down left					X	527
								Y	258
								Z	17
		GR	back					X	0.001
								Y	-116
								Z	0.000
		T1	forw					X	-0.183
								Y	27
								Z	-1.148
		P1	forw					X	-0.002
								Y	0
								Z	-0.015

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
A115 A115.1 Inclined Stiff	SUM		back	89 0.000	X Y Z	-89 -0.184 -1.163
	RESP		back	9 0.000	X Y Z	0.537 0.000 0.000
	TOTAL		back	99 0.000	X Y Z	0.721 0.000 1.163
	GR		back	189 0.000	X Y Z	0.001 0.000 -0.001
A116 A116.1 Inclined Stiff	T1		back	3 0.000	X Y Z	0.146 0.000 -0.806
	P1		back	0 0.000	X Y Z	0.082 0.000 -0.011
	SUM		back	192 0.000	X Y Z	0.150 0.000 -0.816
	RESP		back	6 0.000	X Y Z	0.712 0.000 0.142
A116 A116.1 Inclined Stiff	TOTAL		back	198 0.000	X Y Z	0.862 0.000 0.958
	GR		back	165 0.000	X Y Z	0.001 0.000 -0.000
	T1		form	23 0.000	X Y Z	0.337 0.000 1.197
	P1		form	0 0.000	X Y Z	0.005 0.000 0.016
SUM			back	141 0.000	X	0.342

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
A118 A118.1 Inclined Stiff	RESP		back	3 0.000	X Y Z	0.712 0.000 0.126
	TOTAL		back	144 0.000	X Y Z	1.055 0.000 1.339
	GR		back	154 0.000	X Y Z	0.001 0.000 0.000
	T1		back	11 0.000	X Y Z	0.606 0.000 1.490
A119 A119.1 Guide Stiff	P1		back	0 0.000	X Y Z	0.008 0.000 0.019
	SUM		back	165 0.000	X Y Z	0.615 0.000 1.509
	RESP		back	1 0.000	X Y Z	0.564 0.000 0.000
	TOTAL		back	167 0.000	X Y Z	1.179 0.000 1.510
A119 A119.1 Guide Stiff	GR		down right	265 0.000 0 0.000	X Y Z	0 0.000 -265 0.000 0.000
	T1		up right	1 0.000 320 0.000	X Y Z	0.078 0.000 1.278
	P1		up right	0 0.000 4 0.000	X Y Z	0 0.000 0 0.000 0.017
	SUM		down right	264 0.000 324 0.000	X Y	0.078 -264 0.000

TRAN-SP PROJECT W-320 ES-320-M5 TCF Kaiser International Company
09/05/96 SUPERNATE LINE PROCESS PIPE W4, REV. 2 ADAPTION-60 RESULT PAGE 91

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
						Z		1.295
	RESP		down left	0 122	0.000 0.000	X Y	122 0	0.000 0.000
	TOTAL		down left	264 446	0.000 0.000	X Y	446 264	0.078 0.000
	GR		down left	239 0	0.000 0.000	X Y	0 -239	0.000 0.000
A120 A120 1 Stiff	Guide :RIGID		down left	0 138	0.000 0.000	X Y	-138 0	0.065 0.000
	T1		down left	0 138	0.000 0.000	X Y	-138 0	0.065 0.000
	P1		down left	0 2	0.000 0.000	X Y	-2 0	0.000 0.000
	SUM		down left	239 140	0.000 0.000	X Y	-140 -239	0.065 0.000
	RESP		down left	0 74	0.000 0.000	X Y	74 0	0.000 0.000
	TOTAL		down left	239 214	0.000 0.000	X Y	214 239	0.065 0.000
	GR		down right	246 0	0.000 0.000	X Y	0 -246	0.000 0.000
A121 A121 1 Stiff	Guide :RIGID		up right	0 51	0.000 0.000	X Y	51 0	0.000 0.000
	T1		up right	0 51	0.000 0.000	X Y	51 0	0.000 0.000
	P1		up right	0 0	0.000 0.000	X Y	0 0	0.000 0.000
	SUM		down right	246 52	0.000 0.000	X Y	52 -246	0.000 0.000

TRAN-SP PROJECT W-320 ES-320-M5 TCF Kaiser International Company
09/05/96 SUPERNATE LINE PROCESS PIPE W4, REV. 2 ADAPTION-60 RESULT PAGE 92

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
	RESP		down left	0 20	0.000 0.000	X Y	20 0	0.000 0.000
	TOTAL		down left	246 71	0.000 0.000	X Y	71 246	0.000 0.000
	GR		down left	244 0	0.000 0.000	X Y	0 -244	0.000 0.000
A122 A122 1 Stiff	Guide :RIGID		down left	0 18	0.000 0.000	X Y	0 18	0.000 0.000
	T1		down left	0 18	0.000 0.000	X Y	0 18	0.000 0.000
	P1		down left	0 0	0.000 0.000	X Y	0 0	0.000 0.000
	SUM		down left	244 19	0.000 0.000	X Y	-19 -244	0.000 0.000
	RESP		down left	0 5	0.000 0.000	X Y	5 0	0.000 0.000
	TOTAL		down left	244 24	0.000 0.000	X Y	24 244	0.000 0.000
	GR		down right	244 0	0.000 0.000	X Y	0 -244	0.000 0.000
A123 A123 1 Stiff	Guide :RIGID		up right	0 5	0.000 0.000	X Y	5 0	0.000 0.000
	T1		up right	0 5	0.000 0.000	X Y	5 0	0.000 0.000
	P1		down right	0 0	0.000 0.000	X Y	0 0	0.000 0.000
	SUM		down right	244 5	0.000 0.000	X Y	5 -244	0.000 0.000
	RESP		down	0	0.000	X	1	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		left	1	0.000	Y	0
		down left	244	0.000	X	6
			6	0.000	Y	244
				0.432	Z	
A124 A124.1 Stiff	Guide :RIGID	GR	244	0.000	X	0
			0	0.000	Y	-244
				0.000	Z	
T1		down left	0	0.000	X	-1
			1	0.000	Y	0
				0.213	Z	
P1		down left	0	0.000	X	0
			0	0.000	Y	0
				0.003	Z	
SUM		down left	244	0.000	X	-1
			1	0.000	Y	-244
				0.000	Z	0.216
RESP		down left	0	0.000	X	0
			0	0.000	Y	0
				0.000	Z	
TOTAL		down left	244	0.000	X	2
			2	0.000	Y	244
				0.216	Z	
GR	Guide :RIGID	down left	244	0.000	X	0
			0	0.000	Y	-244
				0.000	Z	
T1		up left	0	0.000	X	0
			0	0.000	Y	0
				-0.213	Z	
P1		up left	0	0.000	X	0
			0	0.000	Y	0
				-0.003	Z	
SUM		down left	244	0.000	X	0
			0	0.000	Y	-244
				0.000	Z	-0.216
RESP		down left	0	0.000	X	0
			0	0.000	Y	0

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		TOTAL	244	0.000	X	1
			1	0.000	Y	244
				0.216	Z	
A127 A127.1 Stiff	Guide :RIGID	GR	244	0.000	X	0
			0	0.000	Y	-244
				0.000	Z	
T1		down right	0	0.000	X	2
			2	0.000	Y	0
				-0.426	Z	
P1		down right	0	0.000	X	0
			0	0.000	Y	0
				-0.006	Z	
SUM		down right	244	0.000	X	2
			2	0.000	Y	-244
				0.000	Z	-0.431
RESP		down left	0	0.000	X	2
			0	0.000	Y	0
				0.000	Z	
TOTAL		down left	244	0.000	X	3
			3	0.000	Y	244
				0.431	Z	
GR	Guide :RIGID	down left	244	0.000	X	0
			0	0.000	Y	-244
				0.000	Z	
T1		up left	0	0.000	X	-6
			6	0.000	Y	0
				-0.638	Z	
P1		up left	0	0.000	X	0
			0	0.000	Y	0
				-0.008	Z	
SUM		down left	244	0.000	X	-7
			7	0.000	Y	-244
				0.647	Z	
RESP		down left	0	0.000	X	6
			6	0.000	Y	0
				0.000	Z	

TRAN-SP PROJECT H-320 ES-320-M3 M4 M5 M6 CP Kaiser Hatched Contour
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 ADJUSTMENTS TO RESUME PAGE 95

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
		TOTAL	down left	244 13	0.000 0.000	X Y	13 244	0.000 0.647
A129 1 A130 1 Stiff	Guide :RIGID	GR	down right	245 0	0.000 0.000	X Y	0 -245	0.000 0.000
		T1	down right	0 24	0.000 0.000	X Y	24 0	0.000 -0.851
		P1	down right	0 0	0.000 0.000	X Y	0 0	0.000 -0.011
		SUM	down right	246 24	0.000 0.000	X Y	24 -246	0.000 -0.862
		RESP	down left	0 24	0.000 0.000	X Y	24 0	0.000 0.000
		TOTAL	down left	246 48	0.000 0.000	X Y	48 246	0.000 0.862
A130 1 A131 1 Stiff	Guide :RIGID	GR	down left	240 0	0.000 0.000	X Y	0 -240	0.000 0.000
		T1	up left	2 108	0.000 0.000	X Y	-108 2	0.000 -1.064
		P1	up left	0 2	0.000 0.000	X Y	-2 0	0.000 -0.014
		SUM	down left	238 110	0.000 0.000	X Y	-110 -238	0.000 -1.078
		RESP	down left	0 89	0.000 0.000	X Y	89 0	0.000 0.000
		TOTAL	down	238	0.000	X	199	0.000

TRAN-SP PROJECT H-320 ES-320-M3 M4 M5 M6 CP Kaiser Hatched Contour
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 ADJUSTMENTS TO RESUME PAGE 96

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
		GR	down right	260 0	0.000 0.000	X Y	0 -260	0.000 0.000
		T1	down right	7 349	0.000 0.000	X Y	349 -7	0.068 -1.277
		P1	down right	0 5	0.000 0.000	X Y	5 0	0.000 -0.017
		SUM	down right	267 354	0.000 0.000	X Y	354 -267	0.068 -1.293
		RESP	down left	0 153	0.000 0.000	X Y	153 0	0.000 0.000
		TOTAL	down left	267 508	0.000 0.000	X Y	508 267	0.068 1.293
A132 1 A133 1 Stiff	Inclined :RIGID	GR	back	171	0.000	X	-171	0.000
		T1	back	70	0.000	X	-70	0.502
		P1	back	1	0.000	X	-1	0.007
		SUM	back	241	0.000	X	-241	0.509
		RESP	back	3	0.000	X	3	0.662
		TOTAL	back	245	0.000	X	245	1.170

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
A134 A134 1 Inclined Stiff :RIGID	GR	back	back	131	0.000	Z	1.508	-0.001
						X	-131	0.000
						Y		0.001
						Z		
	T1	forw	forw	89	0.000	X	89	0.072
						Y		0.000
						Z		-0.998
	P1	forw	forw	1	0.000	X	0.001	0.001
						Y		0.000
						Z		-0.013
	SUM	back	back	41	0.000	X	0.072	0.072
						Y	-41	0.000
						Z	-1.010	-1.010
	RESP	back	back	3	0.000	X	0.817	0.817
						Y	3	0.000
						Z	0.123	0.123
	TOTAL	back	back	44	0.000	X	0.889	0.889
						Y	44	0.000
						Z	1.133	1.133
	GR	back	back	130	0.000	X	-0.001	-0.001
						Y	-130	0.000
						Z	0.001	0.001
	T1	back	back	89	0.000	X	-0.074	-0.074
						Y	-89	0.000
						Z	0.998	0.998
	P1	back	back	1	0.000	X	-0.001	-0.001
						Y	1	0.000
						Z	0.013	0.013
	SUM	back	back	220	0.000	X	-0.075	-0.075
						Y	-220	0.000
						Z	1.012	1.012
	RESP	back	back	3	0.000	X	0.817	0.817
						Y	3	0.000
						Z	0.123	0.123
	TOTAL	back	back	224	0.000	X	0.892	0.892
						Y	224	0.000
						Z	1.135	1.135

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Dim	Force	Deform
A136 A136 1 Inclined Stiff :RIGID	GR	back	back	171	0.000	X	-171	0.000
						Y		0.000
						Z		0.000
	T1	forw	forw	70	0.000	X	-0.504	-0.504
						Y	70	0.000
						Z	1.488	1.488
	P1	forw	forw	1	0.000	X	-0.007	-0.007
						Y	1	0.000
						Z	0.019	0.019
	SUM	back	back	100	0.000	X	-0.510	-0.510
						Y	-100	0.000
						Z	1.508	1.508
	RESP	back	back	3	0.000	X	0.462	0.462
						Y	3	0.000
						Z	0.000	0.000
	TOTAL	back	back	104	0.000	X	1.171	1.171
						Y	104	0.000
						Z	1.508	1.508
	GR	down right	down right	260	0.000	X	0	0.000
						Y	-260	0.000
						Z	0.000	0.000
	T1	up left	up left	7	0.000	X	-349	-0.068
						Y	7	0.000
						Z	1.277	1.277
	P1	up left	up left	5	0.000	X	-5	0.000
						Y	0	0.000
						Z	0.017	0.017
	SUM	down left	down left	253	0.000	X	-354	-0.068
						Y	-253	0.000
						Z	1.293	1.293
	RESP	down left	down left	153	0.000	X	153	0.000
						Y	0	0.000
						Z	0.000	0.000
	TOTAL	down left	down left	254	0.000	X	507	0.048
						Y	254	0.000
						Z	1.293	1.293
	GR	down	down	240	0.000	X	0	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
Stiff	:RIGID		left	0	0.000	Y	Z
T1			down	2	0.000	X	108
			right	108	0.000	Y	-2
P1			down	0	0.000	X	2
			right	2	0.000	Y	0
SUM			down	242	0.000	X	110
			right	110	0.000	Y	-242
RESP			down	0	0.000	X	89
			left	89	0.000	Y	0
TOTAL			down	242	0.000	X	199
			left	199	0.000	Y	242
GR			down	245	0.000	X	0
			right	0	0.000	Y	-245
T1			up	0	0.000	X	-24
			left	24	0.000	Y	0
P1			up	0	0.000	X	0
			left	0	0.000	Y	0
SUM			down	245	0.000	X	-24
			left	24	0.000	Y	-245
RESP			down	0	0.000	X	24
			left	24	0.000	Y	0
TOTAL			down	245	0.000	X	48
			left	48	0.000	Y	245
GR			down	244	0.000	X	0
			left	0	0.000	Y	-244

A139 1 Guide
A140 1 Guide

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
Stiff	:RIGID					Dirn	Force
T1			down	0	0.000	X	6
			right	6	0.000	Y	0
P1			down	0	0.000	X	0
			right	0	0.000	Y	0
SUM			down	244	0.000	X	7
			right	7	0.000	Y	-244
RESP			down	0	0.000	X	6
			left	6	0.000	Y	0
TOTAL			down	244	0.000	X	13
			left	13	0.000	Y	244
GR			down	244	0.000	X	0
			right	0	0.000	Y	-244
T1			up	0	0.000	X	-2
			left	2	0.000	Y	0
P1			up	0	0.000	X	0
			left	0	0.000	Y	0
SUM			down	244	0.000	X	-2
			left	2	0.000	Y	-244
RESP			down	0	0.000	X	2
			left	2	0.000	Y	0
TOTAL			down	244	0.000	X	3
			left	3	0.000	Y	244
GR			down	244	0.000	X	0
			left	0	0.000	Y	-244

A141 1 Guide
A142 1 Guide

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 101

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
T1			down right	0 0	0.000 0	X Y	0 0	0.000 0.213
P1			down right	0 0	0.000 0	X Y	0 0	0.000 0.003
SUM			down right	244 0	0.000 0	X Y	-244 0	0.000 0.216
RESP			down left	0 0	0.000 0	X Y	0 0	0.000 0.000
TOTAL			down left	244 1	0.000 0.000	X Y	1 244	0.000 0.216
GR	A144 A144.1 Stiff	Guide :RIGID	down left	244	0.000	X	-244	0.000
T1			down left	13	0.000	X	-13	0.000
P1			down left	0	0.000	X	0	0.000
SUM			down left	244 13	0.000 0.000	X Y	-13 -244	0.000 0.216
RESP			down left	0	0.000	X	0	0.000
TOTAL			down left	244 14	0.000 0.000	X Y	14 244	0.000 0.216
GR	A145 A145.1 Stiff	Guide :RIGID	down left	244	0.000	X	-244	0.000
T1			down	0.000	0.000	X	25	0.000

TRAN-SP.OUT 9-5-96 2:42p

HNF-2472, Rev. 0, Page 248

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 102

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
P1			down right	25	0.000	Y	0	-0.426
SUM			down right	244 25	0.000 0.000	X Y	25 -244	0.000 -0.432
RESP			down left	1	0.000	X	1	0.000
TOTAL			down left	244 26	0.000 0.000	X Y	26 244	0.000 0.432
GR	A146 A146.1 Stiff	Guide :RIGID	down left	244	0.000	X	-244	0.000
T1			down left	30	0.000	X	-30	0.080
P1			down left	0	0.000	X	0	0.000
SUM			down left	244 30	0.000 0.000	X Y	-30 -244	0.080 -0.448
RESP			down left	5	0.000	X	5	0.000
TOTAL			down left	244 35	0.000 0.000	X Y	35 244	0.080 0.448
GR	A147 A147.1 Stiff	Guide :RIGID	down left	246	0.000	X	-246	0.000
T1			down right	44	0.000	X	44	0.107

Page 69 of 104

IC714PRINT

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 103

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
P1		down right		1	0.000	X	1 0.000
SUM		down right		246 45	0.000 0.000	X Y	45 -246 0.107 -0.864
RESP		down left		18	0.000	X	18 0.000
TOTAL		down left		246 63	0.000 0.000	X Y	63 -246 0.107 0.864
GR	A148 A148 1 Guide Stiff :RIGID	down left		239	0.000	X	-239 0.000
T1		down left		133	0.000	X	-133 0.134 0.000
P1		down left		2	0.000	X	-2 0.000
SUM		down left		239 135	0.000 0.000	X Y	-135 -239 0.134 -1.079
RESP		down left		68	0.000	X	68 0.000
TOTAL		down left		239 203	0.000 0.000	X Z	203 239 0.134 1.080
GR	A149 A149 1 Guide Stiff :RIGID	down left		266	0.000	X	-266 0.000
T1		down right		299	0.000	X	299 0.161 0.000 -1.279

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 104

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Force	Deform
P1		down right		5	0.000	X	5 0.000 0.000 -0.017
SUM		down right		266 303	0.000 0.000	X Y	303 -266 0.161 -1.295
RESP		down left		124	0.000	X	124 0.000
TOTAL		down left		266 427	0.000 0.000	X Y	427 266 0.161 1.296
GR	A150 A150 1 Inclined Stiff :RIGID	back		161	0.000	X	0.000 -161 0.000
T1		back			0.000	X	0.899 0.000 0.000 -1.491
P1		back			0.000	X	0.012 0.000 0.000 -0.019
SUM		back		161	0.000	X	0.911 0.000 0.000 -1.510
RESP		back			0.000	X	0.478 0.000 0.000 0.000
TOTAL		back		161	0.000	X	1.389 0.000 0.000 1.510
GR	A152 A152 1 Inclined Stiff :RIGID	back		151	0.000	X	0.000 -151 0.000 0.000
T1		back			0.000	X	0.781 0.000 -1.375 0.010
P1		back			0.000	X	

167496JHT

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn Force
						Y Z
	SUM		back	151	0.000	0.000 -0.018
	RESP		back		0.000	0.791 0.000 -1.393
	TOTAL		back	151	0.000	0.569 0.000 0.063
	GR		down left		0.000	1.360 0.000 1.436
A153.1 Guide Stiff	T1		down right	248 413	0.000 0.000	0.000 0.000 -248
	P1		down right	7	0.000	0.580 0.000 -0.133
	SUM		down right	248 420	0.000 0.000	0.007 0.000 -7
	RESP		down left	63	0.000	0.588 0.000 -248
	TOTAL		down left	248 482	0.000 0.000	0.588 0.000 -420
	GR		down left	241	0.000	0.569 0.000 63
A155.1 Guide Stiff	T1		down left	273	0.000	1.157 0.000 248
	P1		down left	4	0.000	0.830 0.000 273
						-241 0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn Force
						Z 4
	SUM		down left	241 277	0.000 0.000	0.385 -241 277
	RESP		down left	205	0.000	0.569 0.000 0.000
	TOTAL		down left	241 482	0.000 0.000	0.954 0.000 0.000
A156.1 Inclined Stiff	GR		back	212	0.000	0.000 0.000 -212
	T1		back		0.000	0.166 0.000 0.194
	P1		back		0.000	0.002 0.000 0.002
	SUM		back	212	0.000	0.168 0.000 0.197
	RESP		back		0.000	0.569 0.000 0.583
	TOTAL		back	212	0.000	0.737 0.000 0.780
	GR		back	120	0.000	0.000 0.000 -120
A159.1 Inclined Stiff	T1		back		0.000	0.320 0.000 0.035
	P1		back		0.000	0.004 0.000 0.000

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4.50 RESULT PAGE 107

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
		SUM	back	120	0.000	X	-120
						Y	0.324
						Z	0.035
	RESP		back		0.000	X	0.227
						Y	0.000
						Z	0.595
	TOTAL		back	120	0.000	X	0.551
						Y	0.000
						Z	0.630
A161 A162 1 Stiff	Inclined :RIGID	GR	back	129	0.000	X	0.000
						Y	-129
						Z	0.000
	T1		back		0.000	X	0.369
						Y	0.000
						Z	-0.089
	P1		back		0.000	X	0.005
						Y	0.000
						Z	-0.002
	SUM		back	129	0.000	X	0.374
						Y	-129
						Z	0.000
	RESP		back		0.000	X	0.001
						Y	0.000
						Z	0.411
	TOTAL		back	129	0.000	X	0.374
						Y	129
						Z	0.503
A162 A162 1 Stiff	GR	down Left		221	0.000	X	0.000
						Y	-221
						Z	0.000
	T1		down right		0.000	X	0.216
						Y	0.000
						Z	-129
	P1		down right		0.000	X	0.003
						Y	0.000
						Z	-2
	SUM		down	221	0.000	X	0.219

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4.50 RESULT PAGE 108

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
			right	131	0.000	Y	-221
						Z	-131
	RESP		down left		0.000	X	0.000
						Y	0.000
						Z	216
	TOTAL		down left	221 547	0.000 0.000	X	0.319
						Y	221
						Z	347
A164 A164 1 Stiff	GR		down left	199	0.000	X	0.000
						Y	-199
						Z	0.000
	T1		down right	1019	0.000	X	-0.215
						Y	0.000
						Z	-0.072
	P1		down right	21	0.000	X	-0.003
						Y	0.000
						Z	-21
	SUM		down right	199 1040	0.000 0.000	X	-0.218
						Y	-199
						Z	-1040
	RESP		down left		0.000	X	0.000
						Y	0.000
						Z	0
	TOTAL		down left	199 1040	0.000 0.000	X	0.218
						Y	199
						Z	1040
A166 A167 1 Stiff	Inclined :RIGID	GR	back	79	0.000	X	0.000
						Y	0.000
						Z	-79
	T1		back		0.000	X	-0.236
						Y	0.000
						Z	-0.095
	P1		back		0.000	X	-0.004
						Y	0.000
						Z	-0.001
	SUM		back	79	0.000	X	-0.240
						Y	-79

SUPPORT FORCES

Point/ Supp. ID	Connect/ Combination	Lead Dimm	LOCAL Force	GLOBAL Dimm	Force	Deform
						-0.096
	RESP	back	0.000	X	0.000	0.000
				Y	0.000	0.000
				Z	0.000	0.000
	TOTAL	back	79	0.000	X	0.240
				Y	79	0.000
				Z	0.000	0.096

RESTRAINT REACTIONS

Point name	Lead combination	X	Y	Z	FORCES (lb)	Result	X	Y	Z	MOMENTS (ft-lb)	Result
A00	Anchor										
	GR	0	-45	0	45	0	24	0	0	36	43
	T1	372	0	27	373	0	-294	0	0	0	294
	P1	6	0	30	7	0	6	0	0	0	6
	SUM	378	-45	57	382	24	-288	36	0	36	291
	RESP	244	0	236	246	0	452	0	0	452	0
	TOTAL	642	45	237	638	24	740	36	0	740	741
A01	Guide										
	GR	0	-160	0	160	0	0	0	0	0	0
	T1	0	0	-183	183	0	0	0	0	0	0
	P1	0	0	-166	166	0	0	0	0	0	0
	SUM	0	-160	-349	349	0	0	0	0	0	0
	RESP	0	0	399	399	0	0	0	0	0	0
	TOTAL	0	160	585	607	0	0	0	0	0	0
A02	Inclined										
	GR	0	-69	0	69	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-69	0	69	0	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	69	0	69	0	0	0	0	0	0
A04	Inclined										
	GR	0	-132	0	132	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-132	0	132	0	0	0	0	0	0
	RESP	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	132	0	132	0	0	0	0	0	0
A05	Guide										
	GR	0	-208	0	208	0	0	0	0	0	0
	T1	-173	0	-173	245	0	0	0	0	0	0
	P1	-3	0	-3	0	0	0	0	0	0	0
	SUM	-176	-208	-176	324	0	0	0	0	0	0
	RESP	127	0	127	180	0	0	0	0	0	0
	TOTAL	303	208	303	477	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Lead combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A06	Guide							
	GR	0	-191	0	191	0	0	0
	T1	89	0	89	125	0	0	0
	P1	2	0	2	3	0	0	0
	SUM	91	-191	91	230	0	0	0
	RESP	50	0	50	171	0	0	0
A07	TOTAL	141	191	141	276	0	0	0
	Guide							
	GR	0	-195	0	195	0	0	0
	T1	-129	0	-129	182	0	0	0
	P1	-4	0	-4	5	0	0	0
	SUM	-133	-195	-133	275	0	0	0
A08	RESP	136	195	136	273	0	0	0
	TOTAL	136	195	136	273	0	0	0
	Guide							
	GR	0	-196	0	196	0	0	0
	T1	357	0	357	469	0	0	0
	P1	358	-196	358	517	0	0	0
A09	SUM	715	-196	715	986	0	0	0
	RESP	28	0	28	40	0	0	0
	TOTAL	366	196	366	554	0	0	0
	Inclined							
	GR	0	-146	0	146	0	0	0
	T1	0	0	0	0	0	0	0
A11	P1	0	0	0	0	0	0	0
	SUM	0	-146	0	146	0	0	0
	RESP	0	0	0	0	0	0	0
	TOTAL	0	146	0	146	0	0	0
	Inclined							
	GR	0	-108	0	108	0	0	0
A12	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	0	0	0	0	0	0
	RESP	0	-108	0	108	0	0	0
	TOTAL	0	108	0	108	0	0	0
	Inclined							

RESTRAINT REACTIONS

Point name	Lead combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A12	Guide							
	GR	0	-195	0	195	0	0	0
	T1	-387	0	-387	547	0	0	0
	P1	-7	0	-7	10	0	0	0
	SUM	-393	-195	-393	569	0	0	0
	RESP	68	0	68	97	0	0	0
A13	TOTAL	462	195	462	681	0	0	0
	Guide							
	GR	0	-216	0	216	0	0	0
	T1	145	0	-145	205	0	0	0
	P1	3	0	-3	4	0	0	0
	SUM	148	-216	-148	301	0	0	0
A14	RESP	32	0	32	45	0	0	0
	TOTAL	180	216	180	334	0	0	0
	Guide							
	GR	0	-211	0	211	0	0	0
	T1	-11	0	11	16	0	0	0
	P1	-1	0	1	1	0	0	0
A15	SUM	-12	-211	12	211	0	0	0
	RESP	11	0	11	9	0	0	0
	TOTAL	20	211	20	215	0	0	0
	Guide							
	GR	0	-212	0	212	0	0	0
	T1	-23	0	23	33	0	0	0
A16	P1	0	0	0	0	0	0	0
	SUM	0	-212	23	212	0	0	0
	RESP	26	0	26	215	0	0	0
	TOTAL	26	212	26	215	0	0	0
	Guide							
	GR	0	-212	0	212	0	0	0
A17	T1	16	0	-16	23	0	0	0
	P1	1	0	-1	1	0	0	0
	SUM	16	-212	-16	215	0	0	0
	RESP	17	0	17	213	0	0	0
	TOTAL	17	212	17	213	0	0	0
	Inclined							

TRAN-SP PROJECT M-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 113

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A17	Anchor						
	GR	32	-212	0	217	0	1
	T1	335	0	347	482	0	-11
	P1	3	0	3	5	0	0
	SUM	371	-212	353	573	0	0
	RESP	142	0	142	201	-10	0
A18	TOTAL	512	212	525	765	1	15
	Guide						
	GR	0	-212	0	212	0	0
	T1	8	0	-8	11	0	0
	P1	0	0	0	0	0	0
	SUM	8	-212	-8	213	0	0
A19	RESP	12	0	12	213	0	0
	TOTAL	12	212	12	213	0	0
	Guide						
	GR	-1	-210	1	210	0	0
	T1	-29	0	29	41	0	0
	P1	0	0	0	0	0	0
A20	SUM	-31	-210	31	215	0	0
	RESP	42	0	42	217	0	0
	TOTAL	43	211	43	219	0	0
	Guide						
	GR	5	-218	-5	219	0	0
	T1	106	2	-106	151	0	0
A21	P1	1	0	1	0	0	0
	SUM	113	-217	-113	276	0	0
	RESP	46	1	46	65	0	0
	TOTAL	159	218	159	313	0	0
	Guide						
	GR	-19	-182	19	184	0	0
A22	T1	-354	-8	354	501	0	0
	P1	1	0	1	0	0	0
	SUM	-378	-197	378	568	0	0
	RESP	118	7	118	167	0	0
	TOTAL	496	198	496	729	0	0

TRAN-SP PROJECT M-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 114

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A22	Inclined						
	GR	0	-123	0	143	0	0
	T1	0	29	0	29	0	0
	P1	0	0	0	0	0	0
	SUM	0	-113	0	113	0	0
	RESP	0	15	0	15	0	0
A25	TOTAL	0	128	0	128	0	0
	Inclined						
	GR	0	-125	0	125	0	0
	T1	0	-149	0	149	0	0
	P1	0	-2	0	2	0	0
	SUM	0	-276	0	276	0	0
A27	RESP	0	10	0	10	0	0
	TOTAL	0	286	0	286	0	0
	Inclined						
	GR	0	-113	0	113	0	0
	T1	0	51	0	51	0	0
	P1	0	1	0	1	0	0
A28	SUM	0	-61	0	61	0	0
	RESP	0	20	0	20	0	0
	TOTAL	0	81	0	81	0	0
	Guide						
	GR	2	-189	-34	192	0	0
	T1	356	-31	-361	508	0	0
A29	P1	5	0	-5	7	0	0
	SUM	363	-221	-400	563	0	0
	RESP	148	8	117	167	0	0
	TOTAL	481	242	516	746	0	0
	Guide						
	GR	-22	-238	-18	240	0	0
A29	T1	-176	38	183	257	0	0
	P1	-202	1	162	323	0	0
	SUM	-398	-197	167	569	0	0
	RESP	148	177	167	323	0	0
	TOTAL	268	217	234	416	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 115

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A30	Guide									
	GR	-27	-184	-4	186	0	0	0	0	0
	T1	394	-76	-407	572	0	0	0	0	0
	P1	5	-1	-5	8	0	0	0	0	0
	SUM	373	-260	-416	616	0	0	0	0	0
	RESP	112	25	110	159	0	0	0	0	0
	TOTAL	484	286	526	770	0	0	0	0	0
A31	Inclined									
	GR	0	-125	0	125	0	0	0	0	0
	T1	0	76	0	76	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0
	SUM	0	-48	0	48	0	0	0	0	0
	RESP	0	28	0	28	0	0	0	0	0
	TOTAL	0	76	0	76	0	0	0	0	0
A33	Inclined									
	GR	0	-83	0	83	0	0	0	0	0
	T1	0	-7	0	7	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-90	0	90	0	0	0	0	0
	RESP	0	29	0	29	0	0	0	0	0
	TOTAL	0	119	0	119	0	0	0	0	0
A34	Inclined									
	GR	0	-72	0	72	0	0	0	0	0
	T1	0	93	0	93	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0
	SUM	0	21	0	21	0	0	0	0	0
	RESP	0	32	0	32	0	0	0	0	0
	TOTAL	0	54	0	54	0	0	0	0	0
A36	Inclined									
	GR	0	-142	0	142	0	0	0	0	0
	T1	0	-17	0	17	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-159	0	159	0	0	0	0	0
	RESP	0	5	0	5	0	0	0	0	0
	TOTAL	0	164	0	164	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 116

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A37	Guide									
	GR	14	-199	-14	200	0	0	0	0	0
	T1	-425	0	425	601	0	0	0	0	0
	P1	-6	0	6	8	0	0	0	0	0
	SUM	-417	-199	417	623	0	0	0	0	0
	RESP	123	0	123	173	0	0	0	0	0
	TOTAL	540	199	540	789	0	0	0	0	0
A38	Guide									
	GR	-5	-215	5	215	0	0	0	0	0
	T1	154	0	-154	217	0	0	0	0	0
	P1	2	0	-2	3	0	0	0	0	0
	SUM	151	-215	-151	303	0	0	0	0	0
	RESP	62	0	62	87	0	0	0	0	0
	TOTAL	213	216	213	370	0	0	0	0	0
A39	Anchor									
	GR	20	-248	18	250	63	7	278	285	
	T1	306	0	505	590	-1	130	-1	130	
	P1	5	0	8	10	4	0	4	0	
	SUM	331	-248	531	673	62	141	277	316	
	RESP	138	0	138	185	88	14	185	134	
	TOTAL	422	259	612	787	88	227	362	456	
A40	Guide									
	GR	0	-62	0	62	0	0	0	0	0
	T1	292	0	-292	413	0	0	0	0	0
	P1	5	0	-5	7	0	0	0	0	0
	SUM	297	-62	-297	422	0	0	0	0	0
	RESP	0	42	0	42	0	0	0	0	0
	TOTAL	297	104	297	433	0	0	0	0	0
A41	Guide									
	GR	0	-464	0	464	0	0	0	0	0
	T1	-660	0	660	934	0	0	0	0	0
	P1	10	0	-10	14	0	0	0	0	0
	SUM	-670	-464	670	1058	0	0	0	0	0
	RESP	0	68	0	68	0	0	0	0	0
	TOTAL	670	532	670	1087	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A45	Guide								
	GR	0	-450	0	450	0	0	0	0
	T1	-807	0	0	807	0	0	0	0
	P1	12	0	0	12	0	0	0	0
	SUM	-812	-450	0	824	0	0	0	0
	TOTAL	819	507	0	963	0	0	0	0
A46	Guide								
	GR	0	-129	0	129	0	0	0	0
	T1	336	0	0	336	0	0	0	0
	P1	34	0	0	34	0	0	0	0
	SUM	341	-129	0	342	0	0	0	0
	TOTAL	341	160	0	377	0	0	0	0
A47	Guide								
	GR	0	-262	0	262	0	0	0	0
	T1	-74	0	0	74	0	0	0	0
	P1	7	0	0	7	0	0	0	0
	SUM	-75	-262	0	273	0	0	0	0
	TOTAL	75	271	0	281	0	0	0	0
A48	Guide								
	GR	0	-214	0	214	0	0	0	0
	T1	1	0	0	1	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	2	-214	0	214	0	0	0	0
	TOTAL	2	217	0	217	0	0	0	0
A49	Anchor								
	GR	0	-228	0	228	12	0	144	145
	T1	5	0	0	5	0	20	0	29
	P1	0	0	-13	13	0	0	0	0
	SUM	5	-228	-837	868	12	29	144	148
	TOTAL	5	229	840	871	15	30	190	193

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A50	Guide								
	GR	0	-225	0	225	0	0	0	0
	T1	3	0	0	3	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	4	-225	0	225	0	0	0	0
	TOTAL	5	225	0	225	0	0	0	0
A51	Guide								
	GR	0	-225	0	225	0	0	0	0
	T1	-12	0	0	12	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-12	-225	0	225	0	0	0	0
	TOTAL	19	225	0	226	0	0	0	0
A52	Guide								
	GR	0	-227	0	227	0	0	0	0
	T1	46	0	0	46	0	0	0	0
	P1	1	0	0	1	0	0	0	0
	SUM	47	-227	0	231	0	0	0	0
	TOTAL	69	227	0	237	0	0	0	0
A53	Guide								
	GR	0	-220	0	220	0	0	0	0
	T1	-172	0	0	172	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-172	-220	0	282	0	0	0	0
	TOTAL	261	220	0	341	0	0	0	0
153	Guide								
	GR	0	-244	0	244	0	0	0	0
	T1	465	0	0	465	0	0	0	0
	P1	6	0	0	6	0	0	0	0
	SUM	471	-244	0	531	0	0	0	0
	TOTAL	618	244	0	665	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 119

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A54	Inclined						
	GR	0	-176	0	176	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-176	0	176	0	0
	TOTAL	0	0	0	0	0	0
A56	Inclined						
	GR	0	-106	0	106	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-106	0	106	0	0
	TOTAL	0	0	0	0	0	0
I56	Inclined						
	GR	0	-105	0	105	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-105	0	105	0	0
	TOTAL	0	0	0	0	0	0
A58	Inclined						
	GR	0	-178	0	178	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-178	0	178	0	0
	TOTAL	0	0	0	0	0	0
A59	Inclined						
	GR	0	-250	0	250	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-250	0	250	0	0
	TOTAL	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE+4.60 RESULT PAGE 120

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A60	Guide						
	GR	0	-231	0	231	0	0
	T1	168	0	0	168	0	0
	P1	171	-231	0	2	0	0
	SUM	171	-231	0	288	0	0
	TOTAL	250	231	0	80	0	0
A61	Guide						
	GR	0	-237	0	237	0	0
	T1	-45	0	0	45	0	0
	P1	-1	0	0	1	0	0
	SUM	-46	-237	0	241	0	0
	TOTAL	67	237	0	21	0	0
A62	Guide						
	GR	0	-235	0	235	0	0
	T1	12	0	0	12	0	0
	P1	12	-235	0	235	0	0
	SUM	12	-235	0	2	0	0
	TOTAL	18	235	0	6	0	0
A63	Guide						
	GR	0	-236	0	236	0	0
	T1	-3	0	0	3	0	0
	P1	0	0	0	0	0	0
	SUM	-3	-236	0	236	0	0
	TOTAL	5	236	0	2	0	0
A64	Guide						
	GR	0	-235	0	235	0	0
	T1	1	0	0	1	0	0
	P1	0	0	0	0	0	0
	SUM	1	-235	0	235	0	0
	TOTAL	1	235	0	235	0	0

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 121

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A65	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
	TOTAL	0	-235	0	235	0	0	0	0
A66	Anchor								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	76	76	0	1	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	76	76	0	1	0	0
	TOTAL	0	-235	76	76	0	1	0	0
A67	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
	TOTAL	0	-235	0	235	0	0	0	0
A68	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
	TOTAL	0	-235	0	235	0	0	0	0
A69	Guide								
	GR	0	-236	0	236	0	0	0	0
	T1	4	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	4	-236	0	236	0	0	0	0
	TOTAL	4	-236	0	236	0	0	0	0

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 122

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A70	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	-13	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-13	-235	0	235	0	0	0	0
	TOTAL	19	235	0	236	0	0	0	0
A71	Guide								
	GR	0	-237	0	237	0	0	0	0
	T1	54	-1	0	50	0	0	0	0
	P1	1	0	0	1	0	0	0	0
	SUM	50	-237	0	242	0	0	0	0
	TOTAL	72	237	0	248	0	0	0	0
A72	Guide								
	GR	0	-231	0	231	0	0	0	0
	T1	-186	2	0	186	0	0	0	0
	P1	-2	0	0	2	0	0	0	0
	SUM	-189	-229	0	297	0	0	0	0
	TOTAL	271	229	0	355	0	0	0	0
A73	Guide								
	GR	0	-250	0	250	0	0	0	0
	T1	517	-9	0	517	0	0	0	0
	P1	7	0	0	7	0	0	0	0
	SUM	524	-259	0	585	0	0	0	0
	TOTAL	666	259	0	715	0	0	0	0
A74	Inclined								
	GR	0	-178	0	178	0	0	0	0
	T1	0	-101	0	101	0	0	0	0
	P1	0	-1	0	1	0	0	0	0
	SUM	0	-280	0	280	0	0	0	0
	TOTAL	0	283	0	283	0	0	0	0

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 123

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A76	Inclined									
	GR	0	-106	0	106	0	0	0	0	0
	T1	0	-143	0	143	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	32	0	32	0	0	0	0	0
	TOTAL	0	42	0	42	0	0	0	0	0
176	Inclined									
	GR	0	-106	0	106	0	0	0	0	0
	T1	0	-143	0	143	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-250	0	250	0	0	0	0	0
	TOTAL	0	253	0	253	0	0	0	0	0
A78	Inclined									
	GR	0	-178	0	178	0	0	0	0	0
	T1	0	-101	0	101	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-73	0	73	0	0	0	0	0
	TOTAL	0	78	0	78	0	0	0	0	0
A79	Guide									
	GR	0	-250	0	250	0	0	0	0	0
	T1	-517	0	0	517	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	-524	-242	0	577	0	0	0	0	0
	TOTAL	666	242	0	709	0	0	0	0	0
A80	Guide									
	GR	0	-231	0	231	0	0	0	0	0
	T1	186	-2	0	186	0	0	0	0	0
	P1	2	0	0	2	0	0	0	0	0
	SUM	188	-234	0	300	0	0	0	0	0
	TOTAL	82	271	0	82	271	0	0	0	0

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 124

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A81	Guide									
	GR	0	-237	0	237	0	0	0	0	0
	T1	-51	1	0	51	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	-50	-236	0	241	0	0	0	0	0
	TOTAL	72	236	0	247	0	0	0	0	0
A82	Guide									
	GR	0	-235	0	235	0	0	0	0	0
	T1	13	0	0	13	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	13	-235	0	236	0	0	0	0	0
	TOTAL	19	235	0	236	0	0	0	0	0
A83	Guide									
	GR	0	-236	0	236	0	0	0	0	0
	T1	-4	0	0	4	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	-4	-235	0	236	0	0	0	0	0
	TOTAL	5	235	0	236	0	0	0	0	0
A84	Guide									
	GR	0	-235	0	235	0	0	0	0	0
	T1	1	0	0	1	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	1	-235	0	235	0	0	0	0	0
	TOTAL	1	235	0	235	0	0	0	0	0
A85	Guide									
	GR	0	-235	0	235	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A86	Anchor										
	GR	0	-235	0	235	0	0	1	1	1	1
	T1	3	0	-366	366	0	-11	8	14	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	3	-235	-370	439	0	-12	9	15	0	0
	TOTAL	3	235	454	511	0	12	9	15	0	0
A87	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	-11	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-11	-235	0	236	0	0	0	0	0	0
	TOTAL	11	235	0	236	0	0	0	0	0	0
A88	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	20	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	20	-235	0	236	0	0	0	0	0	0
	TOTAL	20	235	0	236	0	0	0	0	0	0
A89	Guide										
	GR	0	-236	0	236	0	0	0	0	0	0
	T1	-17	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-16	-236	0	236	0	0	0	0	0	0
	TOTAL	19	236	0	236	0	0	0	0	0	0
A90	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	2	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	2	-235	0	235	0	0	0	0	0	0
	TOTAL	11	235	0	235	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A91	Guide										
	GR	0	-237	0	237	0	0	0	0	0	0
	T1	19	0	0	0	0	19	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	20	-237	0	238	0	19	0	0	0	0
	TOTAL	53	237	0	243	0	34	0	0	0	0
A92	Guide										
	GR	0	-230	0	230	0	0	0	0	0	0
	T1	-78	0	0	0	0	78	0	0	0	0
	P1	-1	0	0	0	0	1	0	0	0	0
	SUM	-80	-230	0	244	0	79	0	0	0	0
	TOTAL	207	230	0	309	0	127	0	0	0	0
A93	Guide										
	GR	0	-255	0	255	0	0	0	0	0	0
	T1	225	0	0	0	0	225	0	0	0	0
	P1	4	0	0	0	0	4	0	0	0	0
	SUM	229	-255	0	342	0	229	0	0	0	0
	TOTAL	459	255	0	525	0	230	0	0	0	0
A94	Inclined										
	GR	0	-168	0	168	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-168	0	168	0	0	0	0	0	0
	TOTAL	0	168	0	168	0	0	0	0	0	0
A96	Inclined										
	GR	0	-130	0	130	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-130	0	130	0	0	0	0	0	0
	TOTAL	0	130	0	130	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 127

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Y	X	Result	Z	Y	X	Result	Z	Y	X
		X	Y	Z	X	Y	Z												
A97	Guide																		
	GR	0	-221	0	221	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	0	0	-597	597	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	-710	710	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-221	-608	607	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	85	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A98	Guide																		
	GR	0	-220	0	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	0	0	556	556	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	110	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-220	565	607	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	95	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A99	Inclined																		
	GR	0	-132	0	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-132	0	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A101	Inclined																		
	GR	0	-164	0	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-164	0	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A102	Guide																		
	GR	0	-241	0	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	-244	0	0	244	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	-4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-248	-241	0	346	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	259	0	0	259	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 128

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Y	X	Result	Z	Y	X	Result	Z	Y	X
		X	Y	Z	X	Y	Z												
A103	Guide																		
	GR	0	-209	0	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	93	0	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	95	-209	0	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	149	0	0	149	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A104	Guide																		
	GR	0	-218	0	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	-1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	2	-218	0	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	40	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A105	Guide																		
	GR	0	-216	0	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	-27	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-26	-216	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A106	Guide																		
	GR	0	-217	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	T1	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	17	-217	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A107	Anchor																		
	GR	0	-217	35	220	0	35	220	0	-3	0	0	0	-9	0	0	0	0	0
	T1	-5	-2	39	40	-9	39	40	-9	-16	19	27	19	27	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-5	-219	74	232	-12	74	232	-12	-16	11	23	11	23	0	0	0	0	0
	TOTAL	1	0	89	89	0	89	89	0	-3	0	0	0	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A108	Guide										
	GR	0	-214	0	225	0	0	0	0	0	0
	T1	1	9	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	1	-205	0	205	0	0	0	0	0	0
	TOTAL	2	205	0	205	0	0	0	0	0	0
A109	Guide										
	GR	0	-225	0	225	0	0	0	0	0	0
	T1	-5	-32	0	33	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-5	-258	0	258	0	0	0	0	0	0
	TOTAL	7	258	0	258	0	0	0	0	0	0
A110	Guide										
	GR	0	-150	0	150	0	0	0	0	0	0
	T1	64	135	0	150	0	0	0	0	0	0
	P1	0	2	0	2	0	0	0	0	0	0
	SUM	64	-12	0	66	0	0	0	0	0	0
	TOTAL	89	13	0	90	0	0	0	0	0	0
A112	Guide										
	GR	0	-124	-8	124	0	0	0	0	0	0
	T1	-108	-163	-11	196	0	0	0	0	0	0
	P1	-1	2	0	2	0	0	0	0	0	0
	SUM	-109	-269	-19	309	0	0	0	0	0	0
	TOTAL	165	289	19	332	0	0	0	0	0	0
I112	Guide										
	GR	0	-198	-13	198	0	0	0	0	0	0
	T1	133	58	4	145	0	0	0	0	0	0
	P1	1	1	0	2	0	0	0	0	0	0
	SUM	135	-139	-9	194	0	0	0	0	0	0
	TOTAL	273	140	9	307	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
I113	Guide										
	GR	0	-212	0	213	0	0	0	0	0	0
	T1	-303	-41	0	308	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-303	-255	-17	400	0	0	0	0	0	0
	TOTAL	527	258	17	587	0	0	0	0	0	0
A113	Inclined										
	GR	0	-116	0	116	0	0	0	0	0	0
	T1	0	27	0	27	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-89	0	89	0	0	0	0	0	0
	TOTAL	0	99	0	99	0	0	0	0	0	0
A115	Inclined										
	GR	0	-189	0	189	0	0	0	0	0	0
	T1	0	-3	0	3	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-192	0	192	0	0	0	0	0	0
	TOTAL	0	198	0	198	0	0	0	0	0	0
A116	Inclined										
	GR	0	-165	0	165	0	0	0	0	0	0
	T1	0	23	0	23	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-141	0	141	0	0	0	0	0	0
	TOTAL	0	144	0	144	0	0	0	0	0	0
A118	Inclined										
	GR	0	-154	0	154	0	0	0	0	0	0
	T1	0	-11	0	11	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-165	0	165	0	0	0	0	0	0
	TOTAL	0	167	0	167	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AUTPIPE+4.60 RESULT PAGE 131

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A119	Guide							
	GR	0	-245	0	255	0	0	0
	T1	324	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	324	-244	0	418	0	0	0
	TOTAL	122	0	0	122	0	0	0
A120	Guide							
	GR	0	-239	0	239	0	0	0
	T1	-138	0	0	138	0	0	0
	P1	-2	0	0	2	0	0	0
	SUM	-140	-239	0	277	0	0	0
	TOTAL	214	239	0	321	0	0	0
A121	Guide							
	GR	0	-246	0	246	0	0	0
	T1	51	0	0	51	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	52	-246	0	251	0	0	0
	TOTAL	20	0	0	20	0	0	0
A122	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-18	0	0	18	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-19	-244	0	245	0	0	0
	TOTAL	5	0	0	5	0	0	0
A123	Guide							
	GR	0	-244	0	244	0	0	0
	T1	5	0	0	5	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	5	-244	0	244	0	0	0
	TOTAL	1	0	0	1	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AUTPIPE+4.60 RESULT PAGE 132

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A124	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-1	0	0	1	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-1	-244	0	244	0	0	0
	TOTAL	2	244	0	244	0	0	0
A125	Anchor							
	GR	0	-244	0	244	0	0	9
	T1	0	0	148	148	0	1	7
	P1	0	0	2	2	0	0	0
	SUM	0	-244	150	287	0	1	16
	TOTAL	1	244	173	299	0	2	16
A126	Guide							
	GR	0	-244	0	244	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-244	0	244	0	0	0
	TOTAL	1	244	0	244	0	0	0
A127	Guide							
	GR	0	-244	0	244	0	0	0
	T1	2	0	0	2	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	2	-244	0	244	0	0	0
	TOTAL	3	244	0	244	0	0	0
A128	Guide							
	GR	0	-244	0	244	0	0	0
	T1	-6	0	0	6	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-7	-244	0	244	0	0	0
	TOTAL	13	244	0	244	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 133

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A129	Guide										
	GR	0	-245	0	245	0	0	0	0	0	0
	T1	24	0	0	0	24	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	24	-246	0	247	0	0	0	0	0	0
	TOTAL	24	0	0	24	0	0	0	0	0	0
A130	Guide										
	GR	0	-240	0	240	0	0	0	0	0	0
	T1	-108	2	0	108	0	0	0	0	0	0
	P1	-2	0	0	2	0	0	0	0	0	0
	SUM	-110	-238	0	262	0	0	0	0	0	0
	TOTAL	199	238	0	310	0	0	0	0	0	0
A131	Guide										
	GR	0	-260	0	260	0	0	0	0	0	0
	T1	349	-7	0	349	0	0	0	0	0	0
	P1	5	0	0	5	0	0	0	0	0	0
	SUM	354	-267	0	444	0	0	0	0	0	0
	TOTAL	508	267	0	574	0	0	0	0	0	0
A132	Inclined										
	GR	0	-171	0	171	0	0	0	0	0	0
	T1	0	-70	0	70	0	0	0	0	0	0
	P1	0	-1	0	1	0	0	0	0	0	0
	SUM	0	-241	0	241	0	0	0	0	0	0
	TOTAL	0	245	0	245	0	0	0	0	0	0
A134	Inclined										
	GR	0	-131	0	131	0	0	0	0	0	0
	T1	0	89	0	89	0	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0	0
	SUM	0	-41	0	41	0	0	0	0	0	0
	TOTAL	0	44	0	44	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 134

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
I134	Inclined										
	GR	0	-130	0	130	0	0	0	0	0	0
	T1	0	-89	0	89	0	0	0	0	0	0
	P1	0	-1	0	1	0	0	0	0	0	0
	SUM	0	-220	0	220	0	0	0	0	0	0
	TOTAL	0	224	0	224	0	0	0	0	0	0
A136	Inclined										
	GR	0	-171	0	171	0	0	0	0	0	0
	T1	0	70	0	70	0	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0	0
	SUM	0	-100	0	100	0	0	0	0	0	0
	TOTAL	0	104	0	104	0	0	0	0	0	0
A137	Guide										
	GR	0	-260	0	260	0	0	0	0	0	0
	T1	-349	7	0	349	0	0	0	0	0	0
	P1	-5	0	0	5	0	0	0	0	0	0
	SUM	-354	-253	0	436	0	0	0	0	0	0
	TOTAL	507	254	0	567	0	0	0	0	0	0
A138	Guide										
	GR	0	-240	0	240	0	0	0	0	0	0
	T1	108	-2	0	108	0	0	0	0	0	0
	P1	2	0	0	2	0	0	0	0	0	0
	SUM	110	-242	0	266	0	0	0	0	0	0
	TOTAL	199	242	0	315	0	0	0	0	0	0
A139	Guide										
	GR	0	-245	0	245	0	0	0	0	0	0
	T1	-24	0	0	24	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-24	-245	0	246	0	0	0	0	0	0
	TOTAL	48	245	0	250	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 135

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Y	X	Result	Z	Y	X	Result
		X	Y	Z	X	Y	Z									
A140	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	7	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	13	244	0	244	0	0	0	0	0	0	0	0	0	0	0
A141	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-2	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	244	0	244	0	0	0	0	0	0	0	0	0	0	0
A142	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	244	0	244	0	0	0	0	0	0	0	0	0	0	0
A143	Anchor															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	3	0	-181	181	0	0	2	7	17	0	2	7	17	0	0
	P1	0	0	-12	2	0	0	0	0	0	0	0	0	0	0	0
	SUM	3	-244	-193	308	0	0	9	16	16	0	9	16	16	0	0
	TOTAL	3	244	211	323	0	0	17	9	19	0	17	9	19	0	0
A144	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	-13	0	0	13	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-13	-244	0	245	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	14	244	0	245	0	0	0	0	0	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 136

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Y	X	Result	Z	Y	X	Result
		X	Y	Z	X	Y	Z									
A145	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	25	0	0	0	0	0	25	0	0	0	25	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	25	0	0	0	0	0	25	0	0	0	25	0	0	0	0
	TOTAL	26	244	0	246	0	0	26	1	0	0	246	0	0	0	0
A146	Guide															
	GR	0	-244	0	244	0	0	0	0	0	0	0	0	0	0	0
	T1	-30	0	0	0	0	0	30	0	0	0	30	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-30	-244	0	246	0	0	246	0	0	0	246	0	0	0	0
	TOTAL	35	244	0	246	0	0	246	0	0	0	246	0	0	0	0
A147	Guide															
	GR	0	-246	0	246	0	0	0	0	0	0	0	0	0	0	0
	T1	44	0	0	0	0	0	44	0	0	0	44	0	0	0	0
	P1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
	SUM	45	-246	0	250	0	0	250	0	0	0	250	0	0	0	0
	TOTAL	65	246	0	254	0	0	254	0	0	0	254	0	0	0	0
A148	Guide															
	GR	0	-239	0	239	0	0	0	0	0	0	0	0	0	0	0
	T1	-133	0	0	133	0	0	133	0	0	0	133	0	0	0	0
	P1	-2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	SUM	-135	-239	0	274	0	0	274	0	0	0	274	0	0	0	0
	TOTAL	203	239	0	313	0	0	313	0	0	0	313	0	0	0	0
A149	Guide															
	GR	0	-266	0	266	0	0	0	0	0	0	0	0	0	0	0
	T1	299	0	0	299	0	0	299	0	0	0	299	0	0	0	0
	P1	5	0	0	5	0	0	5	0	0	0	5	0	0	0	0
	SUM	304	-266	0	403	0	0	403	0	0	0	403	0	0	0	0
	TOTAL	427	266	0	503	0	0	503	0	0	0	503	0	0	0	0

TRAN-SP PROJECT H-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4, 60 RESULT PAGE 137

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Y	Z		X	Y	Z	
A150	Inclined								
	GR	0	-161	0	161	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-161	0	161	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A152	Inclined								
	GR	0	-151	0	151	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-151	0	151	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A153	Inclined								
	GR	0	-248	0	248	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-248	0	248	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A155	Inclined								
	GR	0	-241	0	241	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-241	0	241	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A156	Inclined								
	GR	0	-212	0	212	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-212	0	212	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0

TRAN-SP PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AUTOPIPE-4, 60 RESULT PAGE 138

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		Result		MOMENTS (ft-lb)		Result	
		X	Y	Z		X	Y	Z	
A159	Inclined								
	GR	0	-120	0	120	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-120	0	120	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A161	Inclined								
	GR	0	-129	0	129	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-129	0	129	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A162	Guide								
	GR	0	-221	0	221	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-221	0	221	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0
A163	Anchor								
	GR	0	-263	0	263	11	0	20	23
	T1	427	0	106	440	0	98	0	98
	P1	438	0	3	8	0	8	0	8
	SUM	865	-263	109	520	11	106	20	108
	TOTAL	865	0	109	520	11	106	20	108
A164	Guide								
	GR	0	-199	0	199	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 139

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)				MOMENTS (ft-lb)				Result
		X	Y	Z	Result	X	Y	Z	Result	
A166	Inclined									
	GR	0	-79	0	79	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-79	0	79	0	0	0	0	0
A167	RESP	0	0	0	0	0	0	0	0	0
	TOTAL	0	79	0	79	0	0	0	0	0
	Anchor									
A167	GR	0	-67	0	67	-81	0	0	-3	81
	T1	-622	0	946	1132	0	2738	0	0	2738
	P1	-11	0	19	21	0	45	0	0	45
	SUM	-633	-67	964	1156	-81	2783	-3	0	2784
	RESP	0	0	0	0	0	0	0	0	0
A167	TOTAL	633	67	964	1156	81	2783	3	0	2784

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe+4.60 RESULT PAGE 140

ASME B31.3c (1992) CODE COMPLIANCE

Point name	Load combination	(Moments in ft.-lb.)			S.I.F.	(Stress in psi)			Code Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment		Eq. Load no. type	In	Out	
*** Segment A begin ***									
A00	GR + Max P	36	6	0	1.00	1.00	(3a) HOOP	4844	16700
	Cold to T1	0	294	0	1.00	1.00	(18) SUST	2238	16700
	SRSS	0	326	0	1.00	1.00	(17) DISP	1098	25050
A01	Max P	123	13	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	472	0	1.00	1.00	(18) SUST	2655	16700
	Cold to T1	0	663	0	1.00	1.00	(17) DISP	1764	25050
A02	Max P	18	13	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	899	0	1.00	1.00	(18) SUST	2169	16700
	Cold to T1	0	519	0	1.00	1.00	(17) DISP	3285	25050
A03 N-	Max P	18	13	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	899	0	1.00	1.00	(18) SUST	2169	16700
	Cold to T1	0	533	0	1.00	1.00	(17) DISP	3355	25050
A03 N+	Max P	13	18	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	899	0	0	1.00	1.00	(18) SUST	2169	16700
	Cold to T1	533	0	0	1.00	1.00	(17) DISP	3355	25050
A03 M	Max P	15	37	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	1003	0	1.00	1.00	(18) SUST	2256	16700
	Cold to T1	625	0	0	1.00	1.00	(17) DISP	3746	25050
A03 F-	Max P	14	81	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	904	0	0	1.00	1.00	(18) SUST	2457	16700
	Cold to T1	599	0	0	1.00	1.00	(17) DISP	3373	25050
A03 F+	Max P	81	14	0	1.00	1.00	(3a) HOOP	4844	16700
	GR + Max P	0	904	0	1.00	1.00	(18) SUST	2457	16700
	Cold to T1	0	599	0	1.00	1.00	(17) DISP	3373	25050

TRAN-SP PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 141

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	no. type	Code	Stress Allow.
A04	Max P GR + Max P Cold to T1 SRSS	86	14	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A05	Max P GR + Max P Cold to T1 SRSS	203	11	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A06	Max P GR + Max P Cold to T1 SRSS	172	5	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A07	Max P GR + Max P Cold to T1 SRSS	179	9	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A08	Max P GR + Max P Cold to T1 SRSS	181	31	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A085	Max P GR + Max P Cold to T1 SRSS	95	4	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A09	Max P GR + Max P Cold to T1 SRSS	99	29	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A10 N-	Max P GR + Max P Cold to T1 SRSS	49	72	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A10 N+	Max P GR + Max P Cold to T1 SRSS	32	69	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	

TRAN-SP PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 142

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	no. type	Code	Stress Allow.
A10 W	Max P GR + Max P Cold to T1 SRSS	40	15	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A10 F-	Max P GR + Max P Cold to T1 SRSS	30	24	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A10 F+	Max P GR + Max P Cold to T1 SRSS	24	30	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A11	Max P GR + Max P Cold to T1 SRSS	45	27	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A12	Max P GR + Max P Cold to T1 SRSS	181	30	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A13	Max P GR + Max P Cold to T1 SRSS	220	8	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A14	Max P GR + Max P Cold to T1 SRSS	209	2	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A15	Max P GR + Max P Cold to T1 SRSS	212	1	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	
A16	Max P GR + Max P Cold to T1 SRSS	212	0	0	1.00	1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 25050 22211	

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe#4.60 RESULT PAGE 143

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load Code
Point name combination Moment Moment In Out no. type Stress Allow.

A17 - Max P 212 0 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 212 0 1 1,00 1,00 (17) DISP 3083 16700
Cold to T1 0 23 0 1,00 1,00 (17) DISP 85 25050
SRSS 0 1 1,00 1,00 (18) OCC 3 22211

A17 + Max P 211 1 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 211 1 1 1,00 1,00 (17) DISP 3076 16700
Cold to T1 0 11 0 1,00 1,00 (18) OCC 16 22211

A18 Max P 213 1 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 213 0 23 0 1,00 1,00 (17) DISP 3083 16700
Cold to T1 0 7 0 1,00 1,00 (18) OCC 86 25050
SRSS 0 7 1,00 1,00 (18) OCC 33 22211

A19 Max P 208 5 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 208 1 80 0 1,00 1,00 (17) DISP 3062 16700
Cold to T1 0 24 0 1,00 1,00 (18) OCC 115 22211

A20 Max P 235 19 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 235 3 300 0 1,00 1,00 (17) DISP 3114 16700
Cold to T1 2 89 0 1,00 1,00 (18) OCC 1176 25050
SRSS 2 89 1,00 1,00 (18) OCC 429 22211

A21 Max P 164 72 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 164 12 1126 0 1,00 1,00 (17) DISP 2920 16700
Cold to T1 7 336 0 1,00 1,00 (17) DISP 4204 25050
SRSS 7 336 1,00 1,00 (18) OCC 1611 22211

A22 Max P 120 155 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 120 51 2184 0 1,00 1,00 (17) DISP 8157 25050
Cold to T1 30 410 1,00 1,00 (18) OCC 1972 22211

A23 N- Max P 87 168 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 87 41 2375 0 1,00 1,00 (17) DISP 8867 25050
Cold to T1 27 443 1,00 1,00 (18) OCC 2130 22211

A23 N+ Max P 168 87 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 168 51 2375 0 1,00 1,00 (17) DISP 2971 16700
Cold to T1 443 27 1,00 1,00 (18) OCC 8867 25050
SRSS 443 27 1,00 1,00 (17) DISP 2130 22211

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe#4.60 RESULT PAGE 144

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load Code
Point name combination Moment Moment In Out no. type Stress Allow.

A23 M - Max P 175 28 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 175 23 8 1,00 1,00 (17) DISP 5312 16700
Cold to T1 473 5 1,00 1,00 (18) OCC 2271 22211

A23 F- Max P 68 12 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 68 977 32 1,00 1,00 (17) DISP 2394 16700
Cold to T1 296 20 1,00 1,00 (18) OCC 3660 25050
SRSS 296 20 1,00 1,00 (18) OCC 1423 22211

A23 F+ Max P 12 68 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 12 73 32 1,00 1,00 (17) DISP 2394 16700
Cold to T1 296 20 1,00 1,00 (18) OCC 3660 25050
SRSS 296 20 1,00 1,00 (18) OCC 1423 22211

A25 Max P 74 36 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 74 113 32 1,00 1,00 (17) DISP 2450 16700
Cold to T1 30 281 1,00 1,00 (18) OCC 1357 22211

A26 N- Max P 45 64 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 45 50 32 1,00 1,00 (17) DISP 2438 16700
Cold to T1 36 311 1,00 1,00 (18) OCC 3363 25050
SRSS 36 311 1,00 1,00 (18) OCC 1502 22211

A26 N+ Max P 58 52 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 58 887 32 1,00 1,00 (17) DISP 2438 16700
Cold to T1 312 26 1,00 1,00 (18) OCC 3363 25050
SRSS 312 26 1,00 1,00 (18) OCC 1502 22211

A26 M - Max P 174 25 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 174 2424 58 1,00 1,00 (17) DISP 2984 16700
Cold to T1 481 7 1,00 1,00 (18) OCC 3056 25050
SRSS 481 7 1,00 1,00 (18) OCC 2308 22211

A26 F- Max P 166 27 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 166 2424 56 1,00 1,00 (17) DISP 2868 16700
Cold to T1 430 27 1,00 1,00 (18) OCC 3651 25050
SRSS 430 27 1,00 1,00 (18) OCC 2069 22211

A26 F+ Max P 27 166 1 1,00 1,00 (18) SUST 4844 16700
GR + Max P 27 2316 56 1,00 1,00 (17) DISP 2868 16700
Cold to T1 69 430 1,00 1,00 (18) OCC 8651 25050
SRSS 69 430 1,00 1,00 (18) OCC 2069 22211

TRAN-SP PROJECT W-320 ES-320-H3, W4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe=4.60 RESULT PAGE 145

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	In	Out	no. type
A27	Max P GR + Max P Cold to T1 SRSS	52 85 30	152 216 395				1.00 1.00 1.00	1.00 1.00 1.00	(18) (17) (18) OCC
A28	Max P GR + Max P Cold to T1 SRSS	170 76 49	66 1034 335				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A29	Max P GR + Max P Cold to T1 SRSS	271 81 26	12 536 138				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A30	Max P GR + Max P Cold to T1 SRSS	165 249 53	15 1099 425				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A31	Max P GR + Max P Cold to T1 SRSS	85 164 47	56 2538 799				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A32 N- Max P GR + Max P Cold to T1 SRSS	55 151 42	60 2768 330					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A32 N+ Max P GR + Max P Cold to T1 SRSS	60 2768 330	55 151 42					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A32 M Max P GR + Max P Cold to T1 SRSS	67 3024 420	36 85 7					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A32 F- Max P GR + Max P Cold to T1 SRSS	31 1578 373	22 30 40					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC

TRAN-SP.OUT 9-5-96 2:42p

HNF-2472, Rev. 0, Page 270

Page 91 of 104

TRAN-SP PROJECT W-320 ES-320-H3, W4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERMATE LINE PROCESS PIPE REV. 2 Autopipe=4.60 RESULT PAGE 146

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	In	Out	no. type
A32 F+ Max P GR + Max P Cold to T1 SRSS	18 219 51	33 152 372					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A33	Max P GR + Max P Cold to T1 SRSS	41 185 51	25 1168 358				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A34	Max P GR + Max P Cold to T1 SRSS	31 62 12	28 1411 359				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A35 N- Max P GR + Max P Cold to T1 SRSS	11 54 10	36 1807 375					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A35 N+ Max P GR + Max P Cold to T1 SRSS	36 1807 375	11 54 10					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A35 M Max P GR + Max P Cold to T1 SRSS	66 3248 451	24 43 8					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A35 F- Max P GR + Max P Cold to T1 SRSS	62 2990 395	70 8 1					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A35 F+ Max P GR + Max P Cold to T1 SRSS	70 2990 395	62 8 1					1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC
A36	Max P GR + Max P Cold to T1 SRSS	100 1 2	58 2772 368				1.00 1.00 1.00	1.00 1.00 1.00	(3a) HOOP (18) SUST (17) DISP (18) OCC

Page 91 of 104

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) S.I.F. (Stress in psi)
In-Pt. Out-Pt. Torsion Eq. Load Code
Moment Moment In Out no. type Stress Allow.

A37	Max P	188	26	0	418	1.00	1.00	1.00	(18)	DISP	4844	16700
	GR + Max P	0	1526	2	0	1.00	1.00	1.00	(17)	DISP	2971	16700
	Cold to T1	0	418	1.00	1.00	1.00	1.00	1.00	(18)	OC	5695	25050
	SRSS	0	418	1.00	1.00	1.00	1.00	1.00	(18)	OC	2008	22211
A38	Max P	219	7	0	433	1.00	1.00	1.00	(18)	SUST	3112	16700
	GR + Max P	0	433	2	0	1.00	1.00	1.00	(17)	DISP	1616	25050
	Cold to T1	0	119	1.00	1.00	1.00	1.00	1.00	(18)	OC	570	22211
A39	Max P	209	4	0	215	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	215	2	0	1.00	1.00	1.00	(17)	DISP	3062	16700
	Cold to T1	0	59	1.00	1.00	1.00	1.00	1.00	(18)	OC	804	25050
	SRSS	0	59	1.00	1.00	1.00	1.00	1.00	(18)	OC	284	22211
A39	Max P	360	7	0	345	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	345	0	0	1.00	1.00	1.00	(17)	DISP	1289	25050
	Cold to T1	42	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	199	22211
	SRSS	42	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	199	22211
A40	Max P	87	14	0	694	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	694	0	0	1.00	1.00	1.00	(17)	DISP	2591	25050
	Cold to T1	84	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	401	22211
	SRSS	84	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	401	22211
A41	Max P	1264	50	0	3226	1.00	1.00	1.00	(18)	SUST	8128	16700
	GR + Max P	0	3226	0	0	1.00	1.00	1.00	(17)	DISP	12042	25050
	Cold to T1	294	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	1412	22211
	SRSS	294	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	1412	22211
A42	Max P	412	57	0	3989	1.00	1.00	1.00	(18)	SUST	4055	16700
	GR + Max P	0	3989	0	0	1.00	1.00	1.00	(17)	DISP	14892	25050
	Cold to T1	134	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	645	22211
	SRSS	134	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	645	22211
A43	Max P	416	58	0	4062	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	4062	0	0	1.00	1.00	1.00	(17)	DISP	4076	16700
	Cold to T1	135	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	15163	25050
	SRSS	135	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	650	22211
A43	Max P	58	416	0	4062	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	4062	0	0	1.00	1.00	1.00	(17)	DISP	15163	25050
	Cold to T1	0	135	1.00	1.00	1.00	1.00	1.00	(18)	OC	650	22211
	SRSS	0	135	1.00	1.00	1.00	1.00	1.00	(18)	OC	650	22211

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) S.I.F. (Stress in psi)
In-Pt. Out-Pt. Torsion Eq. Load Code
Moment Moment In Out no. type Stress Allow.

A45	Max P	65	506	0	4469	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	506	0	0	1.00	1.00	1.00	(17)	DISP	4503	16700
	Cold to T1	164	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	16759	25050
	SRSS	0	164	1.00	1.00	1.00	1.00	1.00	(18)	OC	785	22211
A45	Max P	60	488	0	4160	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	488	0	0	1.00	1.00	1.00	(17)	DISP	4417	16700
	Cold to T1	159	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	15528	25050
	SRSS	0	159	1.00	1.00	1.00	1.00	1.00	(18)	OC	763	22211
A45	Max P	488	60	0	4160	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	60	0	0	1.00	1.00	1.00	(17)	DISP	4503	16700
	Cold to T1	159	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	15528	25050
	SRSS	0	159	1.00	1.00	1.00	1.00	1.00	(18)	OC	763	22211
A46	Max P	486	59	0	4094	1.00	1.00	1.00	(18)	SUST	4409	16700
	GR + Max P	0	59	0	0	1.00	1.00	1.00	(17)	DISP	4503	16700
	Cold to T1	159	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	15263	25050
	SRSS	0	159	1.00	1.00	1.00	1.00	1.00	(18)	OC	782	22211
A46	Max P	1197	42	0	2890	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	42	0	0	1.00	1.00	1.00	(17)	DISP	7807	16700
	Cold to T1	258	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	10788	25050
	SRSS	0	258	1.00	1.00	1.00	1.00	1.00	(18)	OC	1240	22211
A46	Max P	23	11	0	69	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	11	0	0	1.00	1.00	1.00	(17)	DISP	2182	16700
	Cold to T1	69	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	2819	25050
	SRSS	0	69	1.00	1.00	1.00	1.00	1.00	(18)	OC	331	22211
A47	Max P	323	3	0	143	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	3	0	0	1.00	1.00	1.00	(17)	DISP	4503	16700
	Cold to T1	19	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	552	25050
	SRSS	0	19	1.00	1.00	1.00	1.00	1.00	(18)	OC	91	22211
A48	Max P	216	1	0	51	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	1	0	0	1.00	1.00	1.00	(17)	DISP	3092	16700
	Cold to T1	5	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	190	25050
	SRSS	0	5	1.00	1.00	1.00	1.00	1.00	(18)	OC	26	22211
A49	Max P	251	0	0	25	1.00	1.00	1.00	(18)	SUST	4844	16700
	GR + Max P	0	0	0	0	1.00	1.00	1.00	(17)	DISP	3262	16700
	Cold to T1	3	0	1.00	1.00	1.00	1.00	1.00	(18)	OC	94	25050
	SRSS	0	3	1.00	1.00	1.00	1.00	1.00	(18)	OC	13	22211

TRAN-SP PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 149

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) (Stress in psi)
In-Pl. Out-Pl. Torsion
Point Load combination Moment Moment In Out no. type Stress Allow.

A49 + Max P 239 0 4 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 16700
Cold to T1 3212 16700
SRSS 14 25050 8 22211

A50 Max P 239 0 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3212 16700
Cold to T1 28 25050
SRSS 17 22211

A51 Max P 239 0 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3207 16700
Cold to T1 97 25050
SRSS 59 22211

A52 Max P 242 1 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3222 16700
Cold to T1 362 25050
SRSS 222 22211

A53 Max P 228 5 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3160 16700
Cold to T1 1831 25050
SRSS 174 22211

I53 Max P 280 18 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3408 16700
Cold to T1 1364 5091 25050
SRSS 651 3126 22211

A54 Max P 148 40 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2796 16700
Cold to T1 3005 11220 25050
SRSS 334 1601 22211

A55 N- Max P 115 42 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2831 16700
Cold to T1 3169 25050
SRSS 357 1714 22211

A55 N+ Max P 42 115 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2651 16700
Cold to T1 11831 25050
SRSS 357 1714 22211

TRAN-SP PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 150

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) (Stress in psi)
In-Pl. Out-Pl. Torsion
Point Load combination Moment Moment In Out no. type Stress Allow.

A55 M GR + Max P 45 1 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3389 16700
Cold to T1 456 0 1.00 1.00 (17) DISP 12652 25050
SRSS 0 1.00 1.00 (18) OCC 2189 22211

A55 F- Max P 31 2 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2365 16700
Cold to T1 489 0 1.00 1.00 (17) DISP 8830 25050
SRSS 0 1.00 1.00 (18) OCC 2349 22211

A55 F+ Max P 2 31 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2365 16700
Cold to T1 0 489 1.00 1.00 (17) DISP 8830 25050
SRSS 0 1.00 1.00 (18) OCC 2349 22211

A56 Max P 16 27 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2052 16700
Cold to T1 0 490 1.00 1.00 (17) DISP 12652 25050
SRSS 0 1.00 1.00 (18) OCC 2352 22211

I56 Max P 13 28 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2109 16700
Cold to T1 0 479 1.00 1.00 (17) DISP 7872 25050
SRSS 0 1.00 1.00 (18) OCC 2300 22211

A57 N- Max P 5 31 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2392 16700
Cold to T1 0 477 1.00 1.00 (17) DISP 8931 25050
SRSS 0 1.00 1.00 (18) OCC 2290 22211

A57 N+ Max P 31 5 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 2392 16700
Cold to T1 477 0 1.00 1.00 (17) DISP 8931 25050
SRSS 0 1.00 1.00 (18) OCC 2290 22211

A57 M Max P 45 2 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3416 16700
Cold to T1 441 0 1.00 1.00 (17) DISP 12752 25050
SRSS 0 1.00 1.00 (18) OCC 2216 22211

A57 F- Max P 42 117 0 1.00 1.00 (18) SUST 4844 16700
GR + Max P 3196 16700
Cold to T1 348 0 1.00 1.00 (17) DISP 11932 25050
SRSS 0 1.00 1.00 (18) OCC 1671 22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Torsion	S.I.F. In	S.I.F. Out	Eq. Load no. type	Code	Code	Code
A57 F+	Max P	117	42	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	3196	0	1.00	(17) DIAP	2661	16700	
	Cold to T1	0	348	1.00	1.00	(18) OCC	11932	25050	
A58	Max P	150	40	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	3032	0	1.00	(17) DIAP	2661	16700	
	Cold to T1	0	327	1.00	1.00	(18) OCC	11932	25050	
A59	Max P	295	19	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	1327	0	1.00	(17) DIAP	3431	16700	
	Cold to T1	0	627	1.00	1.00	(18) OCC	5224	25050	
A60	Max P	253	5	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	373	0	1.00	(17) DIAP	3275	16700	
	Cold to T1	0	167	1.00	1.00	(18) OCC	1393	25050	
A61	Max P	264	1	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	100	0	1.00	(17) DIAP	3329	16700	
	Cold to T1	0	45	1.00	1.00	(18) OCC	371	25050	
A62	Max P	261	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	27	0	1.00	(17) DIAP	3315	16700	
	Cold to T1	0	12	1.00	1.00	(18) OCC	57	22211	
A63	Max P	262	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	7	0	1.00	(17) DIAP	3319	16700	
	Cold to T1	0	3	1.00	1.00	(18) OCC	26	25050	
A64	Max P	261	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	2	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	1	1.00	1.00	(18) OCC	4	22211	
A65	Max P	262	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	1	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	0	1.00	1.00	(18) OCC	1	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Torsion	S.I.F. In	S.I.F. Out	Eq. Load no. type	Code	Code	Code
A66	Max P	262	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	0	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	0	1.00	1.00	(18) OCC	1	22211	
A67	Max P	262	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	0	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	0	1.00	1.00	(18) OCC	30	25050	
A68	Max P	261	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	2	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	0	1.00	1.00	(18) OCC	31	25050	
A69	Max P	262	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	8	0	1.00	(17) DIAP	3318	16700	
	Cold to T1	0	3	1.00	1.00	(18) OCC	16	22211	
A70	Max P	261	0	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	29	0	1.00	(17) DIAP	3314	16700	
	Cold to T1	0	12	1.00	1.00	(18) OCC	59	22211	
A71	Max P	264	1	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	110	0	1.00	(17) DIAP	3329	16700	
	Cold to T1	0	46	1.00	1.00	(18) OCC	411	25050	
A72	Max P	253	6	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	0	412	0	1.00	(17) DIAP	3329	16700	
	Cold to T1	0	172	1.00	1.00	(18) OCC	886	22211	
A73	Max P	295	21	1.00	1.00	(18) HOOP	4844	16700	
	GR + Max P	19	1546	0	1.00	(17) DIAP	3483	16700	
	Cold to T1	0	645	1.00	1.00	(18) OCC	5096	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)				
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. no.	Eq. type	Code	psi	
A74	GR + Max P	149	45		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	72	3432	8	1.00	1.00	(17)	DISP	2809	16700
	SRSS	1	336	1.00	1.00	1.00	(18)	OC	12815	25050
					1.00	1.00	1.00	(18)	OC	1614	22211
A75 N-	GR + Max P	116	47		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	126	3616	8	1.00	1.00	(17)	DISP	2809	16700
	SRSS	1	359	1.00	1.00	1.00	(18)	OC	12815	25050
					1.00	1.00	1.00	(18)	OC	1722	22211
A75 N+	GR + Max P	35	120		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	3611	235	8	1.00	1.00	(17)	DISP	2809	16700
	SRSS	357	35	1.00	1.00	1.00	(18)	OC	12815	25050
					1.00	1.00	1.00	(18)	OC	1722	22211
A75 M	GR + Max P	48	1		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	3873	6	92	1.00	1.00	(17)	DISP	2293	16700
	SRSS	454	28	1.00	1.00	1.00	(18)	OC	14463	25050
					1.00	1.00	1.00	(18)	OC	2181	22211
A75 F-	GR + Max P	33	8		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	2719	227	0	1.00	1.00	(17)	DISP	2293	16700
	SRSS	489	1	1.00	1.00	1.00	(18)	OC	14463	25050
					1.00	1.00	1.00	(18)	OC	2345	22211
A75 F+	GR + Max P	8	33		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	227	2719	0	1.00	1.00	(17)	DISP	2293	16700
	SRSS	1	489	1.00	1.00	1.00	(18)	OC	12815	25050
					1.00	1.00	1.00	(18)	OC	2345	22211
A76	GR + Max P	10	29		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	263	2385	0	1.00	1.00	(17)	DISP	2810	16700
	SRSS	1	490	1.00	1.00	1.00	(18)	OC	8959	25050
					1.00	1.00	1.00	(18)	OC	2352	22211
I76	GR + Max P	18	34		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	263	2385	0	1.00	1.00	(17)	DISP	2810	16700
	SRSS	1	490	1.00	1.00	1.00	(18)	OC	8959	25050
					1.00	1.00	1.00	(18)	OC	2352	22211
A77 N-	GR + Max P	1	39		1.00	1.00	(18)	SUST	4844	16700
	Cold to T1	227	2719	0	1.00	1.00	(17)	DISP	2293	16700
	SRSS	1	489	1.00	1.00	1.00	(18)	OC	8959	25050
					1.00	1.00	1.00	(18)	OC	10186	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Torsion	S.I.F. In	S.I.F. Out	Eq. no.	Eq. type	Code Stress	psi Allow.
A77 N+	Max P	39	1	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	2719	227	0	1.00	1.00	(18) SUST	2249	16700
	Cold to T1	489	1	1.00	1.00	(17) DISP		10186	25050
	SRSS			1.00	1.00	(18) OCC		2345	22211
A77 M	Max P	54	2	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	3673	6	92	1.00	1.00	(17) SUST	1479	16700
	Cold to T1	454	28	1.00	1.00	(18) OCC		2181	22211
	SRSS			1.00	1.00	(18) OCC		2181	22211
A77 F-	Max P	59	114	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	3611	235	8	1.00	1.00	(18) SUST	2677	16700
	Cold to T1	357	35	1.00	1.00	(17) DISP		13507	25050
	SRSS			1.00	1.00	(18) OCC		1722	22211
A77 F+	Max P	119	48	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	126	3616	8	1.00	1.00	(18) SUST	2677	16700
	Cold to T1			1.00	1.00	(17) DISP		13507	25050
	SRSS		359	1.00	1.00	(18) OCC		1722	22211
A78	Max P	151	45	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	72	3432	8	1.00	1.00	(18) SUST	2817	16700
	Cold to T1	1	336	1.00	1.00	(17) DISP		12815	25050
	SRSS			1.00	1.00	(18) OCC		1614	22211
A79	Max P	295	20	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	19	1546	8	1.00	1.00	(18) SUST	3480	16700
	Cold to T1			1.00	1.00	(17) DISP		5770	25050
	SRSS	0	645	1.00	1.00	(18) OCC		3096	22211
A80	Max P	253	5	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	5	412	8	1.00	1.00	(18) SUST	3275	16700
	Cold to T1			1.00	1.00	(17) DISP		1539	25050
	SRSS	0	172	1.00	1.00	(18) OCC		826	22211
A81	Max P	264	1	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	1	110	8	1.00	1.00	(18) SUST	3329	16700
	Cold to T1	0	46	1.00	1.00	(17) DISP		411	25050
	SRSS			1.00	1.00	(18) OCC		220	22211
A82	Max P	261	0	1.00	1.00	(3a)	HOOP	4844	16700
	GR + Max P	0	29	8	1.00	1.00	(18) SUST	3315	16700
	Cold to T1			1.00	1.00	(17) DISP		113	25050
	SRSS	0	12	1.00	1.00	(18) OCC		59	22211

TRAN-SP PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 155

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				s.i.f	(Stress in psi)			Code
		In-Pl.	Out-Pl.	Torsion	Moment		Eq. Load	Ed. Load	Stress Allow.	
A83	Max P GR + Max P Cold to T1 SRSS	262 0 0 0	0 8 0 3	0 8 1 0	0 1 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A84	Max P GR + Max P Cold to T1 SRSS	261 0 0 0	0 2 0 1	0 8 1 0	0 1 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A85	Max P GR + Max P Cold to T1 SRSS	262 0 0 0	0 1 0 0	0 8 1 0	0 1 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A86	Max P GR + Max P Cold to T1 SRSS	262 0 0 0	0 0 0 0	0 8 1 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A87	Max P GR + Max P Cold to T1 SRSS	262 0 0 0	0 12 0 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A88	Max P GR + Max P Cold to T1 SRSS	261 0 0 0	0 25 0 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A89	Max P GR + Max P Cold to T1 SRSS	262 0 0 0	0 65 0 5	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A90	Max P GR + Max P Cold to T1 SRSS	261 0 0 0	0 4 0 19	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211

TRAN-SP PROJECT W-320 ES-320-H3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 156

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				s.i.f	(Stress in psi)			Code
		In-Pl.	Out-Pl.	Torsion	Moment		Eq. Load	Ed. Load	Stress Allow.	
A91	Max P GR + Max P Cold to T1 SRSS	265 0 0 0	1 43 0 5	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A92	Max P GR + Max P Cold to T1 SRSS	250 0 0 0	3 174 0 273	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A93	Max P GR + Max P Cold to T1 SRSS	304 0 0 0	12 653 0 1026	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A94	Max P GR + Max P Cold to T1 SRSS	115 0 0 0	25 152 0 679	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A95 N	Max P GR + Max P Cold to T1 SRSS	86 0 0 0	26 1612 0 728	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A95 M	Max P GR + Max P Cold to T1 SRSS	26 1612 728 0	86 0 0 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A95 F	Max P GR + Max P Cold to T1 SRSS	28 1722 869 0	7 0 0 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A95 F+	Max P GR + Max P Cold to T1 SRSS	19 1219 757 0	19 0 0 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211
A95 F+	Max P GR + Max P Cold to T1 SRSS	19 0 0 0	19 1219 757 0	0 0 0 0	0 0 0 0	1.00 1.00 1.00 1.00	(33a) HOOP (18) SUST (17) DISP (18) OCC	4844 16700 3318 3265	4844 16700 3318 3265	16700 16700 25050 22211

TRAN-SP PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 157

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	no. type	Code Stress Allow.
A96	Max P GR + Max P Cold to T1 SRSS	40 0 1080 0	17 0 717 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 2598 25050	4844 16700 2598 25050	4844 16700 2598 25050
A97	Max P GR + Max P Cold to T1 SRSS	227 36 2076 0	227 36 2076 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A98	Max P GR + Max P Cold to T1 SRSS	225 31 1675 0	225 31 1675 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A99	Max P GR + Max P Cold to T1 SRSS	47 16 1012 0	47 16 1012 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A100N-	Max P GR + Max P Cold to T1 SRSS	25 18 1131 0	25 18 1131 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A100N+	Max P GR + Max P Cold to T1 SRSS	18 25 1131 0	18 25 1131 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A100M	Max P GR + Max P Cold to T1 SRSS	25 18 1131 0	25 18 1131 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A100F-	Max P GR + Max P Cold to T1 SRSS	23 81 1385 0	23 81 1385 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A100F+	Max P GR + Max P Cold to T1 SRSS	81 23 1385 0	81 23 1385 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050

TRAN-SP,OUT 9-5-96 2:42p

HNF-2472, Rev. 0, Page 276

Page 97 of 104

TRAN-SP PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 Autopipe4.60 RESULT PAGE 158

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	no. type	Code Stress Allow.
A101	Max P GR + Max P Cold to T1 SRSS	109 21 1364 0	109 21 1364 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 2598 25050	4844 16700 2598 25050	4844 16700 2598 25050
A102	Max P GR + Max P Cold to T1 SRSS	274 14 809 0	274 14 809 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A103	Max P GR + Max P Cold to T1 SRSS	207 4 189 0	207 4 189 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A104	Max P GR + Max P Cold to T1 SRSS	225 0 49 0	225 0 49 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A105	Max P GR + Max P Cold to T1 SRSS	220 0 121 0	220 0 121 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A106	Max P GR + Max P Cold to T1 SRSS	221 0 34 0	221 0 34 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A107 -	Max P GR + Max P Cold to T1 SRSS	221 0 17 0	221 0 17 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A107 +	Max P GR + Max P Cold to T1 SRSS	224 0 19 0	224 0 19 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050
A108	Max P GR + Max P Cold to T1 SRSS	215 0 19 0	215 0 19 0	(3a) HOOP (18) SUST (17) DISP (18) OCC	1.00 1.00 1.00 1.00	4844 16700 3169 25050	4844 16700 3169 25050	4844 16700 3169 25050

104PRINT

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load (Stress in psi)
Moment Moment In Out no. type Stress Allow.

A109	Max P	240	0	19	1.00	1.00	1.00	(17)	HOOP	4844	16700
	GR + Max P	66	0	19	1.00	1.00	1.00	(17)	DISP	2629	16700
	Cold to T1	0	3	1.00	1.00	1.00	1.00	(18)	OC	15	22211
	SRSS										
A110	Max P	148	0	19	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	245	3	19	1.00	1.00	1.00	(17)	DISP	2777	16700
	Cold to T1	0	12	1.00	1.00	1.00	1.00	(18)	OC	57	22211
	SRSS										
A111	Max P	86	2	11	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	72	136	11	1.00	1.00	1.00	(17)	DISP	2677	16700
	Cold to T1	1	49	1.00	1.00	1.00	1.00	(18)	OC	235	22211
	SRSS										
A112	Max P	120	2	11	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	280	233	11	1.00	1.00	1.00	(17)	DISP	2639	16700
	Cold to T1	0	83	1.00	1.00	1.00	1.00	(18)	OC	1360	25050
	SRSS										
I112	Max P	184	3	11	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	107	265	11	1.00	1.00	1.00	(17)	DISP	2949	16700
	Cold to T1	1	231	1.00	1.00	1.00	1.00	(18)	OC	1165	25050
	SRSS										
I113	Max P	214	9	11	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	150	646	11	1.00	1.00	1.00	(17)	DISP	3092	16700
	Cold to T1	5	848	1.00	1.00	1.00	1.00	(18)	OC	2476	25050
	SRSS										
A113	Max P	36	25	3	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	55	1760	3	1.00	1.00	1.00	(17)	DISP	2274	16700
	Cold to T1	20	284	1.00	1.00	1.00	1.00	(18)	OC	1366	22211
	SRSS										
A114N-	Max P	52	37	3	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	20	1870	3	1.00	1.00	1.00	(17)	DISP	2639	16700
	Cold to T1	17	325	1.00	1.00	1.00	1.00	(18)	OC	1562	22211
	SRSS										
A114N+	Max P	27	20	3	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	1870	52	3	1.00	1.00	1.00	(17)	DISP	2225	16700
	Cold to T1	325	17	1.00	1.00	1.00	1.00	(18)	OC	6983	25050
	SRSS										

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load (Stress in psi)
Moment Moment In Out no. type Stress Allow.

A114M	Max P	31	16	33	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	2122	20	33	1.00	1.00	1.00	(17)	DISP	2629	16700
	Cold to T1	499	1	1.00	1.00	1.00	1.00	(18)	OC	2394	22211
	SRSS										
A114F-	Max P	31	114	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	1702	23	31	1.00	1.00	1.00	(17)	DISP	2629	16700
	Cold to T1	547	15	1.00	1.00	1.00	1.00	(18)	OC	6354	25050
	SRSS										
A114F+	Max P	115	24	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	122	1697	31	1.00	1.00	1.00	(17)	DISP	2639	16700
	Cold to T1	16	547	1.00	1.00	1.00	1.00	(18)	OC	6354	25050
	SRSS										
A115	Max P	150	22	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	117	1524	31	1.00	1.00	1.00	(17)	DISP	2793	16700
	Cold to T1	13	544	1.00	1.00	1.00	1.00	(18)	OC	2613	22211
	SRSS										
A116	Max P	93	24	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	40	1751	31	1.00	1.00	1.00	(17)	DISP	2524	16700
	Cold to T1	5	385	1.00	1.00	1.00	1.00	(18)	OC	6541	25050
	SRSS										
A117N-	Max P	65	26	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	35	1895	31	1.00	1.00	1.00	(17)	DISP	2400	16700
	Cold to T1	4	376	1.00	1.00	1.00	1.00	(18)	OC	7038	25050
	SRSS										
A117N+	Max P	26	65	31	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	1895	35	31	1.00	1.00	1.00	(17)	DISP	2400	16700
	Cold to T1	376	4	1.00	1.00	1.00	1.00	(18)	OC	7038	25050
	SRSS										
A117N	Max P	32	14	8	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	23	22	8	1.00	1.00	1.00	(17)	DISP	2232	16700
	Cold to T1	317	3	1.00	1.00	1.00	1.00	(18)	OC	5805	25050
	SRSS										
A117F-	Max P	28	70	0	1.00	1.00	1.00	(18)	HOOP	4844	16700
	GR + Max P	2053	4	0	1.00	1.00	1.00	(17)	DISP	2428	16700
	Cold to T1	238	0	1.00	1.00	1.00	1.00	(18)	OC	7663	25050
	SRSS										

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 161

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-P.L. Moment	Out-P.L. Moment	Torsion	s.i.f. In Out	Eq. Load no. type	Code stress Allow.		
A117+ Max P	GR + Max P	70	283	0	1.00 1.00 (18)	(3a) HOOP	4844	16700	
	GR + Max P	4	2053	0	1.00 1.00 (17)	DISP	7663	16700	
	Cold to T1	0	238	0	1.00 1.00 (18)	OC	1144	22211	
	SRSS								
A118 Max P	GR + Max P	93	27	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	9	1044	0	1.00 1.00 (18)	DISP	5527	16700	
	Cold to T1	1	223	0	1.00 1.00 (18)	OC	1070	22211	
	SRSS								
A119 Max P	GR + Max P	329	16	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	2	1055	0	1.00 1.00 (17)	DISP	3644	16700	
	Cold to T1	0	580	0	1.00 1.00 (18)	OC	2783	22211	
	SRSS								
A120 Max P	GR + Max P	269	4	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	1	351	0	1.00 1.00 (17)	DISP	3355	16700	
	Cold to T1	0	155	0	1.00 1.00 (18)	OC	742	22211	
	SRSS								
A121 Max P	GR + Max P	285	1	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	158	0	1.00 1.00 (17)	DISP	3542	16700	
	Cold to T1	0	41	0	1.00 1.00 (18)	OC	198	22211	
	SRSS								
A122 Max P	GR + Max P	281	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	42	0	1.00 1.00 (17)	DISP	3411	16700	
	Cold to T1	0	11	0	1.00 1.00 (18)	OC	53	22211	
	SRSS								
A123 Max P	GR + Max P	282	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	11	0	1.00 1.00 (17)	DISP	3412	16700	
	Cold to T1	0	3	0	1.00 1.00 (18)	OC	14	22211	
	SRSS								
A124 Max P	GR + Max P	281	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	3	0	1.00 1.00 (17)	DISP	3415	16700	
	Cold to T1	0	1	0	1.00 1.00 (18)	OC	12	22211	
	SRSS								
A125 - Max P	GR + Max P	282	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	2	0	1.00 1.00 (17)	DISP	3416	16700	
	Cold to T1	0	0	0	1.00 1.00 (18)	OC	2	22211	
	SRSS								

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE-4.60 RESULT PAGE 162

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-P.L. Moment	Out-P.L. Moment	Torsion	s.i.f. In Out	Eq. Load no. type	Code stress Allow.		
A125 + Max P	GR + Max P	282	0	0	1.00 1.00 (18)	(3a) HOOP	4844	16700	
	GR + Max P	0	1	0	1.00 1.00 (17)	DISP	3415	16700	
	Cold to T1	0	1	0	1.00 1.00 (18)	OC	2	22211	
	SRSS								
A126 Max P	GR + Max P	281	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	1	0	1.00 1.00 (17)	DISP	3416	16700	
	Cold to T1	0	1	0	1.00 1.00 (18)	OC	5	22211	
	SRSS								
A127 Max P	GR + Max P	282	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	4	0	1.00 1.00 (17)	DISP	3416	16700	
	Cold to T1	0	4	0	1.00 1.00 (18)	OC	30	25050	
	SRSS								
A128 Max P	GR + Max P	281	0	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	0	15	0	1.00 1.00 (17)	DISP	3411	16700	
	Cold to T1	0	14	0	1.00 1.00 (18)	OC	66	22211	
	SRSS								
A129 Max P	GR + Max P	284	1	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	1	55	0	1.00 1.00 (17)	DISP	3427	16700	
	Cold to T1	0	51	0	1.00 1.00 (18)	OC	207	25050	
	SRSS								
A130 Max P	GR + Max P	272	4	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	4	206	0	1.00 1.00 (17)	DISP	3368	16700	
	Cold to T1	0	192	0	1.00 1.00 (18)	OC	770	25050	
	SRSS								
A131 Max P	GR + Max P	318	16	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	16	1027	0	1.00 1.00 (17)	DISP	3592	16700	
	Cold to T1	0	720	0	1.00 1.00 (18)	OC	3836	25050	
	SRSS								
A132 Max P	GR + Max P	133	24	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	53	254	0	1.00 1.00 (17)	DISP	2722	16700	
	Cold to T1	1	392	0	1.00 1.00 (18)	OC	9500	25050	
	SRSS								
A133+ Max P	GR + Max P	103	36	0	1.00 1.00 (18)	SUST	4844	16700	
	GR + Max P	96	2673	0	1.00 1.00 (17)	DISP	2589	16700	
	Cold to T1	0	377	0	1.00 1.00 (18)	OC	9986	25050	
	SRSS								

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 164

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	s.i.f. In Out	Eq. Load no.	Code type	Stress	Allow.
A135F-	Max P GR + Max P Cold to T1 SRSS	47 2671 375	102 195 36		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A135F+	Max P GR + Max P Cold to T1 SRSS	106 2674 0	36 2674 0		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A136	Max P GR + Max P Cold to T1 SRSS	135 58 1	35 2545 352		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A137	Max P GR + Max P Cold to T1 SRSS	318 16 0	15 1029 719		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A138	Max P GR + Max P Cold to T1 SRSS	272 4 0	4 207 192		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A139	Max P GR + Max P Cold to T1 SRSS	284 1 0	1 55 51		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A140	Max P GR + Max P Cold to T1 SRSS	281 0 0	0 15 14		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A141	Max P GR + Max P Cold to T1 SRSS	282 0 0	0 4 4		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A142	Max P GR + Max P Cold to T1 SRSS	281 0 0	0 1 1		1.00 1.00 1.00	(3a) HOOP	4844	16700	

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE+4.60 RESULT PAGE 163

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	s.i.f. In Out	Eq. Load no.	Code type	Stress	Allow.
A135M-	Max P GR + Max P Cold to T1 SRSS	26 2670 375	106 195 36		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A135M+	Max P GR + Max P Cold to T1 SRSS	36 2890 483	7 5 29		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A133F-	Max P GR + Max P Cold to T1 SRSS	26 2168 525	18 158 2		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A133F+	Max P GR + Max P Cold to T1 SRSS	18 158 2	26 2168 525		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A134	Max P GR + Max P Cold to T1 SRSS	39 183 1	23 1024 527		1.00 1.00 1.00	(3a) HOOP	4844	16700	
I134	Max P GR + Max P Cold to T1 SRSS	44 183 1	31 1955 527		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A135M-	Max P GR + Max P Cold to T1 SRSS	22 158 2	33 2169 525		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A135M+	Max P GR + Max P Cold to T1 SRSS	33 219 525	22 183 2		1.00 1.00 1.00	(3a) HOOP	4844	16700	
A135M	Max P GR + Max P Cold to T1 SRSS	42 2891 483	7 5 29		1.00 1.00 1.00	(3a) HOOP	4844	16700	

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 165

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F	Eq. Load	Code	psi	Stress Allow.
A143	Max P	282	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A143 +	Max P	282	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A144	Max P	281	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A145	Max P	282	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A146	Max P	281	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A147	Max P	285	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3432	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3432	25050
A148	Max P	269	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3354	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3354	25050
A149	Max P	320	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	3416	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	3416	25050
A150	Max P	89	0	1	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	2508	16700
	Cold to T1	0	0	0	1.00	1.00 (18)	OC	2508	25050

TRAN-SP OUT 9-5-96 2:42p

HNF-2472, Rev. 0, Page 280

Page 101 of 104

TRAN-SP PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 SUPERNATE LINE PROCESS PIPE REV. 2 AutoPIPE4.60 RESULT PAGE 166

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl.	Out-Pl.	Torsion	S.I.F	Eq. Load	Code	psi	Stress Allow.
A151N-	Max P	63	25	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	0	1646	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	0	312	0	1.00	1.00 (18)	OC	4144	25050
A151N+	Max P	25	63	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1646	0	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	312	0	0	1.00	1.00 (18)	OC	4144	25050
A151W	Max P	28	7	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1875	0	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	350	0	0	1.00	1.00 (18)	OC	4144	25050
A151F-	Max P	33	42	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1509	0	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	317	0	0	1.00	1.00 (18)	OC	4144	25050
A151F+	Max P	42	23	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1509	0	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	317	0	0	1.00	1.00 (18)	OC	4144	25050
A152	Max P	67	21	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1392	0	0	1.00	1.00 (17)	DISP	2400	16700
	Cold to T1	307	0	0	1.00	1.00 (18)	OC	4144	25050
A153	Max P	288	27	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	1673	0	0	1.00	1.00 (17)	DISP	2391	16700
	Cold to T1	83	0	0	1.00	1.00 (18)	OC	4144	25050
A154	Max P	88	10	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	651	0	0	1.00	1.00 (17)	DISP	2489	16700
	Cold to T1	271	0	0	1.00	1.00 (18)	OC	4144	25050
A155	Max P	275	11	0	1.00	1.00 (18)	HOOP	4844	16700
	GR + Max P	631	0	0	1.00	1.00 (17)	DISP	2357	25050
	Cold to T1	630	0	0	1.00	1.00 (18)	OC	3023	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Code
		In-Plt. Moment	Out-Plt. Torsion	S.I.F. In	S.I.F. Out		
A156	Max P	216	10	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	3102	16700
	Cold to T1	0	694	0	1.00	1.00	2589
	SRSS	0	904	1.00	1.00	4341	22211
A157N-	Max P	172	11	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2890	16700
	Cold to T1	0	741	0	1.00	1.00	2765
	SRSS	0	945	1.00	1.00	4538	22211
A157N+	Max P	11	172	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2890	16700
	Cold to T1	741	0	0	1.00	1.00	2765
	SRSS	945	0	1.00	1.00	4538	22211
A157M	Max P	12	10	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2137	16700
	Cold to T1	776	0	0	1.00	1.00	2896
	SRSS	975	0	1.00	1.00	4680	22211
A157F-	Max P	6	70	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2604	16700
	Cold to T1	410	0	0	1.00	1.00	1530
	SRSS	671	0	1.00	1.00	3219	22211
A157F+	Max P	70	6	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2137	16700
	Cold to T1	410	0	0	1.00	1.00	1530
	SRSS	671	0	1.00	1.00	3219	22211
A159	Max P	59	4	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2348	16700
	Cold to T1	0	256	0	1.00	1.00	956
	SRSS	0	428	1.00	1.00	2052	22211
A160N-	Max P	35	6	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2235	16700
	Cold to T1	0	353	0	1.00	1.00	1317
	SRSS	0	464	1.00	1.00	2226	22211
A160N+	Max P	6	35	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	1317	16700
	Cold to T1	353	0	0	1.00	1.00	2226
	SRSS	464	0	1.00	1.00	2226	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)	Code
		In-Plt. Moment	Out-Plt. Torsion	S.I.F. In	S.I.F. Out		
A160M	Max P	11	20	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2137	16700
	Cold to T1	719	0	0	1.00	1.00	2683
	SRSS	717	0	1.00	1.00	3442	22211
A160F-	Max P	11	52	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	684	0	0	1.00	1.00	2553
	SRSS	697	0	1.00	1.00	3346	22211
A160F+	Max P	52	11	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	0	684	0	1.00	1.00	2553
	SRSS	0	697	1.00	1.00	3346	22211
A161	Max P	78	10	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2442	16700
	Cold to T1	0	637	0	1.00	1.00	2376
	SRSS	0	657	1.00	1.00	3151	22211
A162	Max P	235	5	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2137	16700
	Cold to T1	0	310	0	1.00	1.00	1158
	SRSS	0	557	1.00	1.00	2674	22211
A163-	Max P	315	3	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	0	153	0	1.00	1.00	1717
	SRSS	0	277	1.00	1.00	1532	22211
A163+	Max P	335	10	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	0	253	0	1.00	1.00	944
	SRSS	0	0	1.00	1.00	3672	25050
A164	Max P	194	21	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	0	771	0	1.00	1.00	2877
	SRSS	0	0	1.00	1.00	2877	25050
A165N-	Max P	107	1	1.00	1.00	4844	16700
	GR + Max P			1.00	1.00	2318	16700
	Cold to T1	0	332	0	1.00	1.00	1242
	SRSS	0	0	1.00	1.00	2550	22211

Point name	Load combination	In-Pl. Moment	Out-Pl. Moment	S.I.F.	Eq. Load	Stress in psi	Code
A165N+	GR + Max P	1	107	1.00	1.00 (18)	4844	16700
	GR + Max P	333	0	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050
A165M	GR + Max P	34	13	1.00	1.00 (18) D1SP	4844	16700
	GR + Max P	195	0	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050
A165F-	GR + Max P	27	11	1.00	1.00 (18) D1SP	4844	16700
	GR + Max P	1411	0	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050
A165F+	GR + Max P	11	27	1.00	1.00 (18) D1SP	4844	16700
	GR + Max P	0	1411	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050
A166	GR + Max P	5	22	1.00	1.00 (18) D1SP	4844	16700
	GR + Max P	0	1102	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050
A167	GR + Max P	81	45	1.00	1.00 (18) D1SP	4844	16700
	GR + Max P	0	2758	1.00	1.00 (17) D1SP	2574	16700
	GR + Max P	0	0	1.00	1.00 (18) OCC	1242	25050

*** Segment A end ***

S Y S T E M S U M M A R Y

Maximum displacements (in)

Maximum X :	-1.862	Point : A43 M	Load Comb.: SUM
Maximum Y :	0.908	Point : A43 M	Load Comb.: TOTAL
Maximum Z :	1.970	Point : A92 M	Load Comb.: TOTAL
Max. total:	2.315	Point : A43 M	Load Comb.: TOTAL

Maximum rotations (deg)

Maximum X :	0.268	Point : A44	Load Comb.: TOTAL
Maximum Y :	1.246	Point : A76	Load Comb.: TOTAL
Maximum Z :	0.246	Point : A76	Load Comb.: TOTAL
Max. total:	1.249	Point : A76	Load Comb.: TOTAL

Maximum restraint forces(lb)

Maximum X :	-819	Point : A45	Load Comb.: SUM
Maximum Y :	532	Point : A41	Load Comb.: TOTAL
Maximum Z :	1040	Point : A164	Load Comb.: TOTAL
Max. total:	1156	Point : A167	Load Comb.: TOTAL

Maximum restraint moments(ft-lb)

Maximum X :	88	Point : A39	Load Comb.: TOTAL
Maximum Y :	2783	Point : A167	Load Comb.: SUM
Maximum Z :	362	Point : A39	Load Comb.: TOTAL
Max. total:	2784	Point : A167	Load Comb.: SUM

SYSTEM SUMMARY

Maximum sustained stress

Point : A41
Stress psi : 8128
Allowable psi : 16700
Ratio : 0.49
Load combination : GR + Max P

Maximum displacement stress

Point : A43 M
Stress psi : 16759
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

Maximum occasional stress

Point : A102
Stress psi : 5299
Allowable psi : 22211
Ratio : 0.24
Load combination : SRSS

Maximum hoop stress

Point : A00
Stress psi : 4844
Allowable psi : 16700
Ratio : 0.29
Load combination : Max P

Maximum sustained stress ratio

Point : A41
Stress psi : 8128
Allowable psi : 16700
Ratio : 0.49
Load combination : GR + Max P

Maximum displacement stress ratio

Point : A43 M
Stress psi : 16759
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

SYSTEM SUMMARY

Maximum occasional stress ratio

Point : A102
Stress psi : 5299
Allowable psi : 22211
Ratio : 0.24
Load combination : SRSS

Maximum hoop stress ratio

Point : A00
Stress psi : 4844
Allowable psi : 16700
Ratio : 0.29
Load combination : Max P

*** The system satisfies ASME B31.3 code requirements ***
*** for the selected options ***

Max occasional stress : SUBT + SEISMIC

8128 psi + 5299 psi = 13427 psi

Ratio = 0.60

Rev 3
KH 11/18/94

6a
3.12.98

APPENDIX C

HYDRO TEST AT 600 PSI

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 MODEL PAGE 3

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
*** SEGMENT A ***						
A00	Run	0	0	0	0 PIPE-1	
A01	Run	-6.62	0	0	0	
A02	Run	-8.67	0	0	0	
A03	Bend	-1.50	0	0	0	Elbow, Radius = 40.00 inch Bend angle change = 45.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A04	Run	-1.06	0	1.06	0	
A05	Run	-7.78	0	7.78	0	
A06	Run	-7.78	0	7.78	0	
A07	Run	-7.78	0	7.78	0	
A08	Run	-7.78	0	7.78	0	
A085	Run	-7.78	0	7.78	0	
A09	Run	-7.78	0	7.78	0	
A10	Run	-7.78	0	7.78	0	
A10	Bend	-2.71	0	2.71	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A11	Run	-2.71	0	-2.71	0	
A12	Run	-6.13	0	-6.13	0	
A13	Run	-8.49	0	-8.48	0	
A14	Run	-8.48	0	-8.48	0	
A15	Run	-8.48	0	-8.48	0	
A16	Run	-8.48	0	-8.48	0	
A17	Run	-8.48	0	-8.48	0	
A18	Run	-8.48	0	-8.48	0	
A19	Run	-8.48	0	-8.48	0	
A20	Run	-8.48	0	-8.48	0	
A21	Run	-8.48	0	-8.48	0	
A22	Run	-6.13	0	-6.13	0	
A23	Bend	-2.71	0	-2.71	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A25	Run	3.66	0	-3.66	0	
A26	Bend	2.71	0	-2.71	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A27	Run	-2.71	0.46	-2.71	0	

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 MODEL PAGE 4

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A30	Run	-5.83	0.98	-5.83	0	
A30	Run	-8.93	1.50	-8.93	0	
A31	Run	-8.93	1.50	-8.93	0	
A31	Run	-5.83	0.98	-5.83	0	
A32	Bend	-2.71	0.46	-2.71	0	Elbow, Radius = 40.00 inch Bend angle change = 89.98 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A33	Run	-2.71	0	2.71	0	
A34	Run	-2.30	0	2.30	0	
A35	Bend	-2.71	0	2.71	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A36	Run	-2.71	0	-2.71	0	
A37	Run	-6.94	0	-6.94	0	
A38	Run	-8.49	0	-8.48	0	
A39	Run	-8.49	0	-8.49	0	
A40	Run	-8.49	0	-8.49	0	
A41	Run	-8.49	0	-8.49	0	
A42	Run	-8.41	0	-8.41	0	
A43	Bend	-1.06	0	-1.06	0	Elbow, Radius = 40.00 inch Bend angle change = 44.96 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000
A44	Run	0	0	-1.50	0	
A45	Run	0	0	-13.01	0	
A46	Run	0	0	-13.50	0	
A47	Run	0	0	-13.50	0	
A48	Run	0	0	-12.75	0	
A49	Run	0	0	-12.75	0	
A50	Run	0	0	-12.75	0	
A51	Run	0	0	-12.75	0	
A52	Run	0	0	-12.75	0	
A53	Run	0	0	-12.75	0	
A54	Run	0	0	-12.75	0	
A55	Bend	0	0	-13.25	0	Elbow, Radius = 40.00 inch Bend angle change = 90.00 deg Mid point at 50.00 percent SIF - In 1.00, Out = 1.00 Flex = 1.000

HYDRO-AB PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 MODEL PAGE 5

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A56	Run	-3.83	0	0		
A57	Run	-7.34	0	0		
A57	Bend	-3.83	0	0		
Elbow, Radius = 40.00 inch						
Bend angle change = 90.00 deg						
Mid point at 50.00 percent						
SIF - In 1.00, Out = 1.00						
Flex = 1.000						
A58	Run	0	0	-3.83		
A59	Run	0	0	-13.44		
A60	Run	0	0	-13.33		
A61	Run	0	0	-13.33		
A62	Run	0	0	-13.33		
A63	Run	0	0	-13.33		
A64	Run	0	0	-13.33		
A65	Run	0	0	-13.33		
A66	Run	0	0	-13.33		
A67	Run	0	0	-13.33		
A68	Run	0	0	-13.33		
A69	Run	0	0	-13.33		
A70	Run	0	0	-13.33		
A71	Run	0	0	-13.33		
A72	Run	0	0	-13.33		
A73	Run	0	0	-13.33		
A74	Run	0	0	-13.44		
A75	Bend	0	0	-3.83		

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A76	Run	-3.83	0.38	0		
A76	Run	-7.34	0.73	0		
A77	Bend	-3.83	0.38	0		

A78	Run	0	0	-3.83		
A79	Run	0	0	-13.44		
A80	Run	0	0	-13.33		
A81	Run	0	0	-13.33		
A82	Run	0	0	-13.33		
A83	Run	0	0	-13.33		
A84	Run	0	0	-13.33		
A85	Run	0	0	-13.33		
A86	Run	0	0	-13.33		
A87	Run	0	0	-13.33		

HYDRO-AB PROJECT W-320 ES-320-W3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 MODEL PAGE 6

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---			PIPE ID	DESCRIPTION
		X	Y	Z		
A88	Run	0	0	-13.33		
A89	Run	0	0	-13.33		
A90	Run	0	0	-13.33		
A91	Run	0	0	-13.33		
A92	Run	0	0	-13.33		
A93	Run	0	0	-13.33		
A94	Run	0	0	-13.44		
A95	Bend	0	0	-3.83		

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A96	Run	-3.83	0	0		
A97	Run	-11.25	0	0		
A98	Run	-11.84	0	0		
A99	Run	-11.25	0	0		
A100	Bend	-3.83	0	0		

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A101	Run	0	0	-3.83		
A102	Run	0	0	-12.25		
A103	Run	0	0	-12.25		
A104	Run	0	0	-12.25		
A105	Run	0	0	-12.25		
A106	Run	0	0	-12.25		
A107	Run	0	0	-12.25		
A108	Run	0	0	-12.25		
A109	Run	0	0	-12.25		
A110	Run	0	0	-12.25		
A111	Run	0	0	-2.88		
A112	Run	0	0.11	-1.62		
A113	Run	0	0.72	-11.00		
A114	Run	0	0.72	-11.00		
A114	Bend	0	0.22	-3.83		

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A115	Run	3.83	0	0		
A116	Run	13.44	0	0		
A117	Bend	3.83	0	0		

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Y		

SIF - In 1.00, Out = 1.00
Flex = 1.000

A118	Run	0	0	-3.83	
A119	Run	0	0	-13.74	
A120	Run	0	0	-13.83	
A121	Run	0	0	-13.83	
A122	Run	0	0	-13.83	
A123	Run	0	0	-13.83	
A124	Run	0	0	-13.83	
A125	Run	0	0	-13.83	
A126	Run	0	0	-13.83	
A127	Run	0	0	-13.83	
A128	Run	0	0	-13.83	
A129	Run	0	0	-13.83	
A130	Run	0	0	-13.83	
A131	Run	0	0	-13.74	
A132	Run	0	0	-13.83	
A133	Bend	0	0	-3.83	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A134	Run	-3.83	0.37	0	
A135	Run	-9.34	0.91	0	
A135	Bend	-3.83	0.37	0	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A136	Run	0	0	-3.83	
A137	Run	0	0	-13.75	
A138	Run	0	0	-13.83	
A139	Run	0	0	-13.83	
A140	Run	0	0	-13.83	
A141	Run	0	0	-13.83	
A142	Run	0	0	-13.83	
A143	Run	0	0	-13.83	
A144	Run	0	0	-13.83	
A145	Run	0	0	-13.83	
A146	Run	0	0	-13.83	
A147	Run	0	0	-13.83	
A148	Run	0	0	-13.83	
A149	Run	0	0	-13.83	
A150	Run	0	0	-13.75	
A151	Bend	0	0	-3.83	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg

POINT DATA LISTING

POINT NAME	TYPE	---OFFSETS (ft)---		PIPE ID	DESCRIPTION
		X	Y		

Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A152	Run	-3.83	0	0	
A153	Run	-13.00	0	0	
A154	Run	-5.88	0	0	
A155	Run	-7.12	0	0	
A156	Run	-13.88	0	0	
A157	Bend	-3.83	0	0	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A159	Run	0	0	-6.75	
A160	Bend	0	0	-3.83	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A161	Run	-3.83	0	0	
A162	Run	-9.42	0	0	
A163	Run	-14.00	0	0	
A164	Run	-14.00	0	0	
A165	Bend	-4.50	0	0	

Elbow, Radius = 40.00 inch
Bend angle change = 90.00 deg
Mid point at 50.00 percent
SIF - In 1.00, Out = 1.00
Flex = 1.000

A166	Run	0	0	3.83	
A167	Run	0	0	6.17	

Total weight of empty pipes : 19324 lb

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
*** SEGMENT A ***			
A00	0.00	0.00	0.00 ANCHOR Rigid Thermal movements : None
A01	-6.62	0.00	0.00 GUIDE ID : A01 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A02	-15.29	0.00	DISPL ID : A02 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A03 N	-15.41	0.00	0.00
A03 M	-16.79	0.00	0.00 TI
A03 F	-16.68	0.00	0.25
A04	-17.77	0.00	0.98
	-17.85	0.00	1.06 INCLIN ID : A04 2, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A05	-25.63	0.00	8.84 GUIDE ID : A05 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A06	-33.41	0.00	16.62 GUIDE ID : A06 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A07	-41.19	0.00	24.40 GUIDE ID : A07 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A08	-48.97	0.00	32.18 GUIDE ID : A08 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A085	-53.20	0.00	36.41 DISPL Thermal 1
A09	-56.26	0.00	39.47 INCLIN ID : A09 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A10 N	-56.61	0.00	39.82
A10 M	-58.97	0.00	42.18 TI
A10 F	-58.97	0.00	40.80
A11	-61.33	0.00	39.82
	-61.68	0.00	39.47 INCLIN ID : A11 1, Connected to Ground
			Along global Y direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A12	-67.81	0.00	33.34 GUIDE ID : A12 2, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A13	-76.30	0.00	24.86 GUIDE ID : A13 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A14	-84.78	0.00	16.38 GUIDE ID : A14 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A15	-93.26	0.00	7.90 GUIDE ID : A15 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A16	-101.74	0.00	-0.58 GUIDE ID : A16 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---			DATA Z TYPE	DESCRIPTION
	X	Y	Z		
A17	-110.22	0.00	-9.06	ANCHOR	Gap-left = 0.06, Right = 0.06 inch Gaps set Weightless
A18	-118.71	0.00	-17.54	GUIDE	Thermal movements : None Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A19	-127.19	0.00	-26.02	GUIDE	Gaps set Weightless ID : A19 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A20	-135.67	0.00	-34.51	GUIDE	Gaps set Weightless ID : A20 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A21	-144.16	0.00	-42.99	GUIDE	Gaps set Weightless ID : A21 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A22	-150.29	0.00	-49.13	INCLIN	Gaps set Weightless ID : A22 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15
A23 N	-150.64	0.00	-49.48		Gaps set Weightless
A23 M	-153.00	0.00	-51.84		
A23 F	-150.64	0.00	-51.84		
A25	-149.34	0.00	-55.50	INCLIN	ID : A24 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Gaps set Weightless
A26 N	-148.99	0.00	-55.85		
A26 M	-146.63	0.00	-58.21	TI	
A26 M	-148.01	0.12	-58.20		
A26 F	-148.97	0.40	-60.55		

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---			DATA Z TYPE	DESCRIPTION
	X	Y	Z		
A27	-149.34	0.46	-60.91	INCLIN	ID : A27 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15
A28	-155.17	1.44	-66.74	GUIDE	Gaps set Weightless ID : A28 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A29	-164.10	2.94	-75.67	GUIDE	Gaps set Weightless ID : A29 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A30	-173.03	4.44	-84.60	GUIDE	Gaps set Weightless ID : A30 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15
A31	-178.86	5.43	-90.43	INCLIN	ID : A31 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15
A32 N	-179.23	5.49	-90.80		Gaps set Weightless
A32 M	-181.57	5.89	-93.14	TI	
A32 F	-181.57	5.77	-91.77		
A33 F	-183.93	5.89	-90.79		
A33	-184.28	5.89	-90.44	INCLIN	ID : A33 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15
A34	-186.58	5.89	-88.14	INCLIN	Gaps set Weightless ID : A34 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15
A35 N	-186.93	5.89	-87.78		
A35 M	-189.29	5.89	-85.43	TI	
A35 M	-189.29	5.89	-86.81		

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A35 F	-191.64	5.89	-87.78 INCLIN ID : A36 1, Connected to Ground
A36	-191.99	5.89	-88.13 INCLIN ID : A37 1, Connected to Ground
			Along global Z direction
			Stiffness = RIGID
			Gap-Minus = 0.00, PLUS = 0.12 inch
			Friction = 0.15
			Gaps set Weightless
A37	-198.93	5.89	-95.07 GUIDE ID : A37 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A38	-207.42	5.89	-103.56 GUIDE ID : A38 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A39	-215.90	5.89	-112.04 ANCHOR Rigid
			Thermal movements : None
A40	-224.39	5.89	-120.53 GUIDE ID : A40 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A41	-232.87	5.89	-129.01 GUIDE ID : A41 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A42	-241.28	5.89	-137.42 DISPL
A43 N	-241.36	5.89	-137.50
A43	-242.34	5.89	-138.48 TI
A43 M	-242.09	5.89	-138.58
A43	-242.34	5.89	-139.08
A43	-242.34	5.89	-139.08
A45	-242.34	5.89	-152.99 GUIDE
			ID : A45 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A46	-242.34	5.89	-166.49 GUIDE DISPL
			ID : A46 1, Connected to Ground
			Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A47	-242.34	5.89	-179.99 GUIDE ID : A47 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A48	-242.34	5.89	-192.74 GUIDE ID : A48 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A49	-242.34	5.89	-205.49 ANCHOR Rigid
			Thermal movements : None
A50	-242.34	5.89	-218.24 GUIDE ID : A50 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A51	-242.34	5.89	-230.99 GUIDE ID : A51 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A52	-242.34	5.89	-243.74 GUIDE ID : A52 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A53	-242.34	5.89	-256.49 GUIDE ID : A53 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
I53	-242.34	5.89	-269.24 GUIDE ID : I53 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A54	-242.34	5.89	-282.49	INCLIN	Gaps set Weightless ID : A54 1, Connected to Ground Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A55 N	-242.34	5.89	-282.99		
A55 M	-242.34	5.89	-286.32	II	
A55 F	-242.34	5.89	-286.32		
A56	-246.17	5.89	-286.32	INCLIN	ID : A56 1, Connected to Ground Along Global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
156	-253.51	5.89	-286.32	INCLIN	ID : A56 1, Connected to Ground Along Global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A57 N	-254.01	5.89	-286.32		
A57 M	-257.34	5.89	-286.32	II	
A57 F	-257.34	5.89	-286.32		
A58	-257.34	5.89	-290.15	INCLIN	ID : A58 1, Connected to Ground Along Global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A59	-257.34	5.89	-303.59	GUIDE	ID : A59 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A60	-257.34	5.89	-316.92	GUIDE	ID : A60 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A61	-257.34	5.89	-330.25	GUIDE	ID : A61 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	X	Y	Z	DATA TYPE	DESCRIPTION
A62	-257.34	5.89	-343.58	GUIDE	Friction = 0.15 Gaps set Weightless ID : A62 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A63	-257.34	5.89	-356.91	GUIDE	ID : A63 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A64	-257.34	5.89	-370.24	GUIDE	ID : A64 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A65	-257.34	5.89	-383.57	GUIDE	ID : A65 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A66	-257.34	5.89	-396.90	ANCHOR RIGID	Thermal movements : None Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A67	-257.34	5.89	-410.23	GUIDE	ID : A67 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A68	-257.34	5.89	-423.56	GUIDE	ID : A68 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A69	-257.34	5.89	-436.89	GUIDE	ID : A69 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A70	-257.34	5.89	-450.22	GUIDE	ID : A70 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)--- X Y Z	DATA TYPE	DESCRIPTION
A88	-272.34 7.39 -644.72	GUIDE	Stiffness = RIGID Gap-left = 0.06, Above = 0.06 inch Gap-right = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless ID : A88 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless ID : A89 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A90 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A91 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A92 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A93 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A94 1, Connected to Ground Stiffness = RIGID

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)--- X Y Z	DATA TYPE	DESCRIPTION
A95 N	-272.34 7.39 -725.31		Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A95	-272.34 7.39 -728.64	TI	
A95 M	-273.32 7.39 -727.66		
A95 F	-275.67 7.39 -728.64		
A96	-276.17 7.39 -728.64	INCLIN	ID : A96 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless ID : A97 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A98 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A99 1, Connected to Ground Stiffness = RIGID Along global Y direction Friction = 0.15 Gaps set Weightless Thermal 1 ID : A100 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1 ID : A101 1, Connected to Ground Stiffness = RIGID Along global Y direction Friction = 0.15 Gaps set Weightless Thermal 1 ID : A102 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless ID : A103 1, Connected to Ground Stiffness = RIGID Gap-left = 0.06, Right = 0.06 inch Gap-right = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)--- X Y Z	DATA TYPE	DESCRIPTION
A135N	-308.02	11.21-1085.90	Gap-Minus = 0.00, Plus = 0.12 inch
A135	-311.34	11.54-1085.90 11	Friction = 0.15
A135M	-310.37	11.44-1086.88	Gaps set Weightless
A135F	-311.34	11.54-1089.23	Thermal 1
A136	-311.34	11.54-1089.73	ID : A136 1, Connected to Ground Along global direction
			Stiffness = RIGID
			Gap-down = 0.00, Plus = 0.12 inch
			Gap-Minus = 0.00
			Friction = 0.15
			Gaps set Weightless
A137	-311.34	11.54-1103.48	ID : A137 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
			Thermal 1
A138	-311.34	11.54-1117.31	ID : A138 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A139	-311.34	11.54-1131.14	ID : A139 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A140	-311.34	11.54-1144.97	ID : A140 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A141	-311.34	11.54-1158.80	ID : A141 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A142	-311.34	11.54-1172.63	ID : A142 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)--- X Y Z	DATA TYPE	DESCRIPTION
A143	-311.34	11.54-1186.46	ANCHOR
			Gaps set Weightless
A144	-311.34	11.54-1200.29	GUIDE
			ID : A144 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A145	-311.34	11.54-1214.12	GUIDE
			ID : A145 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A146	-311.34	11.54-1227.95	GUIDE
			ID : A146 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A147	-311.34	11.54-1241.78	DISPL
			Thermal 1
			ID : A147 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A148	-311.34	11.54-1255.61	DISPL
			Thermal 1
			ID : A148 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A149	-311.34	11.54-1269.44	DISPL
			Thermal 1
			ID : A149 1, Connected to Ground
			Stiffness = RIGID
			Gap-down = 0.00, Above = 0.06 inch
			Gap-left = 0.06, Right = 0.06 inch
			Friction = 0.15
			Gaps set Weightless
A150	-311.34	11.54-1283.19	INCLIN
			Thermal 1
			ID : A150 1, Connected to Ground
			Along global direction
			Stiffness = RIGID
			Gap-Minus = 0.00, Plus = 0.12 inch
			Friction = 0.15
			Gaps set Weightless

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A151N	-311.34	11.54-1287.69	
A151	-311.34	11.54-1287.02 TI	
A151M	-312.32	11.54-1286.04	
A151F	-314.67	11.54-1287.02	
A152	-315.17	11.54-1287.02 INCLIN	ID : A152 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Gaps set Weightless
A153	-328.17	11.54-1287.02 GUIDE	ID : A153 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1
A154	-334.05	11.54-1287.02 DISPL	
A155	-341.17	11.54-1287.02 GUIDE	ID : A155 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A156	-355.05	11.54-1287.02 INCLIN	ID : A156 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A157N	-355.55	11.54-1287.02	
A157	-358.88	11.54-1287.02 TI	
A157M	-357.90	11.54-1288.00	
A157F	-358.88	11.54-1290.35	
A159	-358.88	11.54-1293.77 INCLIN	ID : A159 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless
A160N	-358.88	11.54-1294.27	
A160	-358.88	11.54-1297.60 TI	
A160M	-359.86	11.54-1296.62	
A160F	-362.71	11.54-1297.60	
A161	-362.71	11.54-1297.60 INCLIN	ID : A161 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15

COMPONENT DATA LISTING

POINT NAME	---COORDINATE(ft)---	DATA TYPE	DESCRIPTION
X	Y	Z	
A162	-372.63	11.54-1297.60 GUIDE	Gaps set Weightless ID : A162 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless
A163	-386.63	11.54-1297.60 ANCHOR	Rigid Thermal movements : None
A164	-400.63	11.54-1297.60 GUIDE	ID : A164 1, Connected to Ground Stiffness = RIGID Gap-down = 0.00, Above = 0.06 inch Gap-left = 0.06, Right = 0.06 inch Friction = 0.15 Gaps set Weightless Thermal 1
A165N	-401.80	DISPL	
A165	-405.13	11.54-1297.60 TI	
A165M	-404.15	11.54-1296.62	
A165F	-405.13	11.54-1294.27	
A166	-405.13	11.54-1293.77 INCLIN	ID : A166 1, Connected to Ground Along global Y direction Stiffness = RIGID Gap-Minus = 0.00, Plus = 0.12 inch Friction = 0.15 Gaps set Weightless Thermal movements : None
A167	-405.13	11.54-1287.60 ANCHOR	Rigid

Number of points in the system : 236

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 MODEL PAGE 29

PIPE DATA LISTING

Pipe ID/ Material	Nom/ Sch	O.D. inch	W.Th. inch	Thickess(inch) Corr Mill	Insu Ling	Spec Grav	Weight((lb/ft) Pipe	Other Total
PIPE-1	4	4.500	0.237	0.06	0.03	0	0	1.20
A312-TP304L STD							11.04	0 17.66

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 MODEL PAGE 30

MATERIAL DATA LISTING

Material Name	Pipe ID	Density lb/cu.ft	Pois. Ratio	Temper. deg F	Modulus E6 psi	Expan. in/100ft	Allow. psi
A312-TP304L PIPE-1		501.0	0.30	40.0	28.42	1.5442	16700.0
				180.0			16700.0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 MODEL PAGE 31

TEMPERATURE AND PRESSURE DATA
C A S E 1-----C A S E 2-----C A S E 3-----
POINT PRESS. TEMPER. EXPAN. PRESS. TEMPER. EXPAN.
NAME psi deg F in/100ft psi deg F in/100ft psi deg F in/100ft

*** SEGMENT A
A00 180 1.544
600 1.544
A167 180

THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (in)	DY (in)	DZ (in)	RX (deg)	RY (deg)	RZ (deg)
A01	Thermal 1	0.00	0.00	-0.06	0.000	0.000	0.000
A08	Thermal 1	0.15	0.00	0.15	0.000	0.000	0.000
A12	Thermal 1	-0.14	0.00	0.14	0.000	0.000	0.000
A13	Thermal 1	-0.11	0.00	0.11	0.000	0.000	0.000
A14	Thermal 1	-0.08	0.00	0.08	0.000	0.000	0.000
A41	Thermal 1	-0.11	0.00	0.11	0.000	0.000	0.000
A45	Thermal 1	-0.15	0.00	0.00	0.000	0.000	0.000
A46	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A47	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000
A89	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A90	Thermal 1	0.09	0.00	0.00	0.000	0.000	0.000
A91	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A92	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A93	Thermal 1	0.15	0.00	0.00	0.000	0.000	0.000
A97	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000
A98	Thermal 1	0.00	0.00	0.12	0.000	0.000	0.000
A102	Thermal 1	-0.14	0.00	0.00	0.000	0.000	0.000
A103	Thermal 1	-0.11	0.00	0.00	0.000	0.000	0.000
A104	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
I112	Thermal 1	-0.06	0.00	0.00	0.000	0.000	0.000
I113	Thermal 1	-0.08	0.00	0.00	0.000	0.000	0.000
A119	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A120	Thermal 1	0.06	0.00	0.00	0.000	0.000	0.000
A131	Thermal 1	0.07	0.00	0.00	0.000	0.000	0.000
A137	Thermal 1	-0.07	0.00	0.00	0.000	0.000	0.000

THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (in)	DY (in)	DZ (in)	RX (deg)	RY (deg)	RZ (deg)
A146	Thermal 1	0.08	0.00	0.00	0.000	0.000	0.000
A147	Thermal 1	0.11	0.00	0.00	0.000	0.000	0.000
A148	Thermal 1	0.13	0.00	0.00	0.000	0.000	0.000
A149	Thermal 1	0.16	0.00	0.00	0.000	0.000	0.000
A153	Thermal 1	0.00	0.00	-0.13	0.000	0.000	0.000
A164	Thermal 1	0.00	0.00	-0.07	0.000	0.000	0.000

ANALYSIS SUMMARY

Current model revision number : 14

Static - Date and time of analysis Sep 5, 1996 2:33 PM
Model Revision Number 14
Number of load cases 3
Load cases analyzed GR T1 P1
Gaps/Friction/Yielding considered No
Hanger design run No
Cut short included No
Weight of contents included Yes
Pressure stiffening case 0
Water elevation for buoyancy loads Not considered

Modal - Date and time of analysis Sep 5, 1996 2:34 PM
Model Revision Number 14
Number of modes 12
Cutoff frequency (Hz) 33.0
Water elevation for buoyancy loads Not considered

Response - Date and time of analysis Sep 5, 1996 2:34 PM
Model Revision Number 14
Number of load cases 81 R2 B3
Date and time of modal analysis Sep 5, 1996 2:34 PM
Number of modes 12
Cutoff frequency (Hz) 33.0
Model revision of modal analysis 14
Weight of contents included Yes
Pressure stiffening case 0
Water elevation for buoyancy loads Not considered

CODE COMPLIANCE COMBINATIONS

Combination	Category	Method	Load	Factor	Allowable	Remarks
GR + Max P	Sustain	Sum	Gravity Max Long	1.00	Automatic	Default
Cold to T1	Expansion	Sum	Thermal 1	1.00	Automatic	Default
Max P	Hoop	Max Hoop	Response 1	1.00	Automatic	Default
SRSS	Occasion	SRSS	Response 2 Response 3	1.00 1.00	Automatic	User

OTHER USER COMBINATIONS

Combination	Method	Load	Factor	Remarks
GR	Sum	Gravity	1.00	Default
T1	Sum	Thermal 1	1.00	Default
P1	Sum	Press 1	1.00	Default
SUM	Sum	Gravity Thermal 1 Press 1	1.00 1.00 1.00	User
RESP	Abs sum	Response 1 Response 2 Response 3	1.00 1.00 1.00	User
TOTAL	Abs sum	SUM RESP	1.00 1.00	User

CODE COMPLIANCE

Y - Factor 0.60
Weld efficiency factor 1.00
Range reduction factor 1.00
Design Pressure Factor 1.00
Minimum stress ratio used in reports... 0.00
Include corrosion in stress calcs. Y
Include torsion in code stress N
Include stress in code stress N
Longitudinal pressure calculation P/4t
Include rigorous pressure Y

HYDRO-AB PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 3

RESPONSE SPECTRUM LOAD CASES :

Number of load cases analysed : 3

Load case 1 - R1

Missing mass : No
ZPA : No

Combination method : SRSS

X- Spectrum : SC2&3
Multiplier : 1.00

SC2&3

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 4

Load case 2 - R2

Missing mass : No
ZPA : No

Combination method : SRSS

Y- Spectrum : SC2&3
Multiplier : 1.00

SC2&3

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.100	0.01	0.160	0.02	0.250	0.04
0.400	0.06	0.600	0.09	1.100	0.17
1.640	0.25	8.000	0.25	12.000	0.20
20.000	0.16	33.000	0.12	100.000	0.12

Load case 3 - R3

Missing mass : No
ZPA : No

Combination method : SRSS

Z- Spectrum : SC2&3
Multiplier : 1.00

SC2&3

Freq(Hz)	Grav()	Freq(Hz)	Grav()	Freq(Hz)	Grav()
0.01	0.02	0.160	0.02	0.250	0.04
0.100	0.06	0.600	0.09	1.100	0.17
0.400	0.25	8.000	0.25	12.000	0.20
1.640	0.16	33.000	0.12	100.000	0.12
20.000					

F R E Q U E N C I E S

Mode Number	Frequency (Rads/sec)	Frequency (Hertz)	Period (Sec)	Participation factors X	Y	Z
1	10.3567	1.6483	0.607	-1.650	0.000	0.046
2	11.7484	1.8698	0.535	1.264	0.000	-0.085
3	12.7769	2.0240	0.494	-1.283	0.000	-0.125
4	12.8605	2.0468	0.489	1.223	0.000	-0.073
5	13.0497	2.0769	0.481	-1.220	0.000	0.073
6	14.0956	2.2434	0.446	-1.535	0.000	0.460
7	19.0580	3.0332	0.330	0.663	0.000	0.993
8	22.3562	3.5581	0.281	0.000	0.836	0.000
9	23.4692	3.7352	0.268	1.345	-0.094	0.538
10	24.0311	3.8247	0.261	-0.139	0.061	-1.223
11	25.7055	4.0912	0.244	-0.944	0.000	1.410
12	27.8354	4.4301	0.226	-0.752	-0.005	0.789

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
*** Segment A begin ***							
A00	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A01	GR	0.000	0.000	0.000	0.008	0.000	0.004
	T1	-0.102	0.000	-0.065	0.000	-0.102	0.000
	P1	-0.002	0.000	-0.065	0.000	-0.002	0.000
	SUM	-0.104	0.000	-0.065	0.008	-0.103	0.004
	TOTAL	-0.105	0.000	-0.065	0.008	-0.103	0.004
A02	GR	0.000	0.000	0.000	0.019	0.000	-0.010
	T1	-0.235	0.000	-0.258	0.000	-0.031	0.000
	P1	-0.006	0.000	-0.006	0.000	-0.002	0.000
	SUM	-0.241	0.000	-0.263	0.019	-0.033	-0.010
	TOTAL	-0.242	0.000	-0.262	0.019	-0.033	-0.010
A03 N	GR	0.000	0.000	0.495	0.019	0.130	0.010
	T1	-0.237	0.000	0.000	0.019	0.000	-0.010
	P1	-0.006	0.000	-0.006	0.000	-0.027	0.000
	SUM	-0.243	0.000	0.489	0.019	0.103	0.000
	TOTAL	-0.243	0.000	0.498	0.019	0.122	0.010
A03 M	GR	0.000	0.002	0.000	0.021	0.000	-0.009
	T1	-0.256	0.000	-0.255	0.000	0.024	0.000
	P1	-0.006	0.000	-0.006	0.000	0.000	0.000
	SUM	-0.263	0.002	-0.261	0.021	0.024	0.000
	TOTAL	-0.266	0.002	-0.254	0.021	0.024	0.000
A03 F	GR	0.000	0.000	0.515	0.021	0.075	0.009
	T1	-0.265	0.000	0.000	0.023	0.000	-0.007
	P1	-0.007	0.000	0.000	0.000	0.075	0.000
	SUM	-0.272	0.000	0.000	0.023	0.075	0.000
	TOTAL	-0.279	0.000	0.000	0.023	0.082	0.007

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A04	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.265	0.000	-0.230	0.000	0.000	0.000
	P1	-0.007	0.000	-0.005	0.000	0.001	0.000
	SUM	-0.272	0.000	-0.235	0.000	0.001	0.000
	TOTAL	-0.272	0.000	-0.235	0.000	0.001	0.000
A05	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.004	0.000	0.000	0.000	0.000	0.000
	P1	-0.141	0.000	0.141	0.000	0.102	0.000
	SUM	-0.145	0.000	0.141	0.000	0.102	0.000
	TOTAL	-0.145	0.000	0.141	0.000	0.102	0.000
A06	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.267	0.000	0.000	0.000	0.000	0.000
	P1	-0.006	0.000	0.006	0.000	0.000	0.000
	SUM	-0.273	0.000	0.006	0.000	0.000	0.000
	TOTAL	-0.273	0.000	0.006	0.000	0.000	0.000
A07	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.377	0.000	0.000	0.000	0.000	0.000
	P1	-0.009	0.000	0.009	0.000	0.000	0.000
	SUM	-0.386	0.000	0.009	0.000	0.000	0.000
	TOTAL	-0.386	0.000	0.009	0.000	0.000	0.000
A08	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.319	0.000	0.000	0.000	0.000	0.000
	P1	-0.012	0.000	0.012	0.000	0.312	0.000
	SUM	-0.331	0.000	0.012	0.000	0.312	0.000
	TOTAL	-0.331	0.000	0.012	0.000	0.312	0.000
A08S	GR	0.000	-0.006	0.000	-0.002	0.000	0.000
	T1	-0.003	0.000	0.000	0.000	0.000	0.000
	P1	-0.053	-0.006	0.000	-0.002	0.654	0.000
	SUM	-0.056	-0.006	0.000	-0.002	0.654	0.000
	TOTAL	-0.056	-0.006	0.000	-0.002	0.654	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A09	GR	0.000	0.001	0.000	-0.006	0.000	-0.001
	T1	0.151	0.000	1.353	0.000	0.216	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.154	0.000	1.353	0.000	0.216	0.000
	TOTAL	0.154	0.000	1.353	0.000	0.216	0.000
A10 N	GR	0.000	0.001	0.000	-0.006	0.000	-0.001
	T1	0.151	0.000	1.353	0.000	0.216	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.154	0.001	1.412	-0.006	0.222	-0.001
	TOTAL	0.154	0.001	1.412	-0.006	0.222	-0.001
A10 M	GR	0.000	0.001	0.000	-0.004	0.000	0.001
	T1	0.143	0.000	1.442	0.000	-0.016	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.146	0.001	1.442	-0.004	-0.016	0.001
	TOTAL	0.146	0.001	1.442	-0.004	-0.016	0.001
A10 F	GR	0.000	0.000	0.000	-0.004	0.000	0.000
	T1	0.063	0.000	1.352	0.000	-0.237	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.066	0.000	1.352	-0.004	-0.237	0.000
	TOTAL	0.066	0.000	1.352	-0.004	-0.237	0.000
A11	GR	0.000	0.000	0.000	-0.004	0.000	0.001
	T1	0.055	0.000	1.340	0.000	-0.270	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.058	0.000	1.340	-0.004	-0.270	0.000
	TOTAL	0.058	0.000	1.340	-0.004	-0.270	0.000
A12	GR	0.000	0.000	0.000	-0.005	0.000	0.001
	T1	0.517	0.000	0.789	0.000	-0.251	0.000
	P1	0.003	0.000	0.000	0.000	0.000	0.000
	SUM	0.520	0.000	0.789	-0.005	-0.251	0.000
	TOTAL	0.520	0.000	0.789	-0.005	-0.251	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A13	GR	0.000	0.000	0.000	-0.001	0.000	-0.002
	T1	0.413	0.000	0.631	0.000	0.053	0.000
	P1	0.003	0.000	0.013	0.000	0.002	0.000
	SUM	0.416	0.000	0.644	0.000	0.055	0.000
	TOTAL	0.416	0.000	0.644	0.000	0.055	0.000
A14	GR	0.000	0.000	0.000	-0.001	0.000	-0.001
	T1	0.311	0.000	0.473	0.000	-0.054	0.000
	P1	0.009	0.000	0.009	0.000	-0.001	0.000
	SUM	0.320	0.000	0.482	0.000	-0.055	0.000
	TOTAL	0.320	0.000	0.482	0.000	-0.055	0.000
A15	GR	0.000	0.000	0.000	-0.001	0.000	-0.001
	T1	0.261	0.000	0.261	0.000	-0.022	0.000
	P1	0.006	0.000	0.006	0.000	0.000	0.000
	SUM	0.267	0.000	0.267	0.000	-0.022	0.000
	TOTAL	0.267	0.000	0.267	0.000	-0.022	0.000
A16	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.131	0.000	0.131	0.000	0.006	0.000
	P1	0.003	0.000	0.003	0.000	0.000	0.000
	SUM	0.134	0.000	0.134	0.000	0.006	0.000
	TOTAL	0.134	0.000	0.134	0.000	0.006	0.000
A17	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A18	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	-0.130	0.000	-0.130	0.000	-0.003	0.000
	P1	0.003	0.000	0.003	0.000	0.000	0.000
	SUM	-0.127	0.000	-0.127	0.000	-0.003	0.000
	TOTAL	-0.127	0.000	-0.127	0.000	-0.003	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 11

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A19	GR	0.000	0.000	0.000	0.001	0.001	0.000
	T1	-0.260	0.000	-0.260	0.000	0.000	0.000
	P1W	-0.260	0.000	-0.260	0.000	0.000	0.000
	SW	-0.260	0.000	-0.260	0.001	0.012	0.000
	RESP	0.000	0.000	0.000	0.001	0.005	0.001
TOTAL		0.267	0.000	0.267	0.002	0.017	0.001
A20	GR	0.000	0.000	0.000	0.000	-0.002	0.002
	T1	-0.390	0.000	-0.390	0.000	-0.042	-0.001
	P1W	-0.390	0.000	-0.390	0.000	-0.001	0.000
	SW	-0.390	0.000	-0.390	0.000	0.000	0.000
	RESP	0.001	0.000	0.001	0.001	0.018	0.002
TOTAL		0.400	0.000	0.400	0.001	0.063	0.003
A21	GR	0.000	0.000	0.000	0.006	0.008	-0.003
	T1	-0.520	0.000	-0.520	-0.002	0.157	0.001
	P1W	-0.512	0.000	-0.509	0.000	0.000	0.000
	SW	-0.512	0.000	-0.512	0.005	0.069	-0.009
	RESP	0.001	0.000	0.001	0.003	0.068	0.001
TOTAL		0.534	0.000	0.534	0.007	0.236	0.003
A22	GR	-0.009	0.000	0.010	-0.001	-0.004	0.005
	T1	-0.823	0.000	-0.406	0.003	-0.027	-0.004
	P1W	-0.820	0.000	-0.069	0.000	-0.001	0.000
	SW	-0.820	0.000	-0.069	0.000	-0.001	0.000
	RESP	0.126	0.000	0.127	0.001	0.093	0.005
TOTAL		0.978	0.000	0.533	0.003	0.125	0.006
A23 N	GR	-0.009	-0.001	0.009	-0.003	-0.007	0.006
	T1	-0.825	0.001	-0.415	0.004	-0.073	-0.005
	P1W	-0.820	0.000	-0.010	0.000	-0.002	0.000
	SW	-0.820	0.000	-0.010	0.000	-0.002	0.000
	RESP	0.132	0.001	0.132	0.002	0.092	0.006
TOTAL		0.985	0.001	0.546	0.003	0.173	0.007
A23 M	GR	-0.004	-0.004	0.007	-0.004	-0.022	0.010
	T1	-0.734	0.000	-0.495	0.004	-0.344	-0.007
	P1W	-0.018	0.000	-0.012	0.000	-0.009	0.000
	SW	-0.018	0.000	-0.012	0.000	-0.009	0.000
	RESP	0.121	0.003	0.125	0.003	0.113	0.009
TOTAL		0.913	0.003	0.634	0.004	0.487	0.012

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 12

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A23 F	GR	0.013	-0.003	0.013	0.000	-0.033	0.012
	T1	-0.496	0.004	-0.421	-0.001	-0.538	-0.008
	P1W	-0.496	0.004	-0.421	-0.001	-0.538	-0.008
	SW	-0.496	0.004	-0.421	-0.002	-0.595	-0.002
	RESP	0.189	0.003	0.147	0.003	0.143	0.012
TOTAL		0.684	0.004	0.565	0.005	0.727	0.015
A25	GR	0.022	0.000	0.022	-0.001	-0.034	0.010
	T1	-0.323	0.000	-0.288	-0.008	-0.556	-0.011
	P1W	-0.323	0.000	-0.288	-0.008	-0.556	-0.011
	SW	-0.323	0.000	-0.288	-0.008	-0.556	-0.011
	RESP	0.206	0.000	0.165	0.002	0.144	0.014
TOTAL		0.515	0.000	0.438	0.012	0.748	0.015
A26 N	GR	0.025	0.001	0.025	-0.002	-0.033	0.009
	T1	-0.277	0.002	-0.253	-0.010	-0.542	-0.011
	P1W	-0.277	0.002	-0.253	-0.010	-0.542	-0.011
	SW	-0.277	0.002	-0.253	-0.010	-0.542	-0.011
	RESP	0.211	0.001	0.172	0.002	0.141	0.015
TOTAL		0.470	0.002	0.407	0.014	0.729	0.018
A26 M	GR	0.038	0.001	0.031	0.000	-0.023	0.007
	T1	-0.036	-0.006	-0.188	-0.005	-0.556	-0.003
	P1W	-0.036	-0.006	-0.188	-0.005	-0.556	-0.003
	SW	-0.036	-0.006	-0.188	-0.005	-0.556	-0.003
	RESP	0.233	0.005	0.194	0.003	0.109	0.024
TOTAL		0.235	0.010	0.356	0.008	0.497	0.025
A26 F	GR	0.046	0.000	0.029	0.002	-0.007	0.008
	T1	0.063	-0.001	-0.260	0.014	-0.092	0.010
	P1W	0.063	-0.001	-0.260	0.014	-0.092	0.010
	SW	0.063	-0.001	-0.260	0.014	-0.092	0.010
	RESP	0.233	0.002	0.173	0.007	0.092	0.026
TOTAL		0.343	0.003	0.413	0.024	0.195	0.047
A27	GR	0.046	0.000	0.028	0.002	-0.005	0.009
	T1	0.062	0.000	-0.270	0.018	-0.045	0.012
	P1W	0.062	0.000	-0.270	0.018	-0.045	0.012
	SW	0.062	0.000	-0.270	0.018	-0.045	0.012
	RESP	0.231	0.000	0.169	0.008	0.095	0.021
TOTAL		0.340	0.000	0.418	0.029	0.146	0.051

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A28	GR	0.037	-0.006	0.037	0.000	0.007	0.012
	T1	-0.192	0.032	-0.132	0.018	0.133	0.009
	P1	-0.005	0.001	-0.005	0.000	0.003	0.000
	SUM	-0.160	0.027	-0.160	0.018	0.144	0.021
	RESP	0.155	0.026	0.155	0.016	0.070	0.028
TOTAL		0.315	0.053	0.315	0.034	0.214	0.069
A29	GR	0.037	-0.006	0.037	0.004	0.004	0.004
	T1	-0.329	0.055	-0.329	0.018	0.006	0.028
	P1	-0.008	0.001	-0.008	0.000	0.000	-0.001
	SUM	-0.300	0.050	-0.300	0.014	0.002	0.025
	RESP	0.155	0.026	0.155	0.016	0.030	0.017
TOTAL		0.456	0.077	0.456	0.031	0.031	0.042
A30	GR	0.037	-0.006	0.037	0.011	0.005	0.003
	T1	-0.424	0.079	-0.424	0.005	0.133	0.035
	P1	-0.011	0.002	-0.011	-0.002	0.003	-0.001
	SUM	-0.441	0.074	-0.441	0.077	0.131	0.039
	RESP	0.155	0.026	0.155	0.025	0.087	0.011
TOTAL		0.596	0.100	0.596	0.102	0.218	0.050
A31	GR	0.032	0.000	0.042	0.004	-0.005	0.001
	T1	-0.410	0.000	-0.716	-0.092	0.108	-0.021
	P1	-0.010	0.000	-0.018	-0.002	0.003	-0.001
	SUM	-0.388	0.000	-0.692	-0.090	0.106	-0.021
	RESP	0.237	0.000	0.198	0.023	0.152	0.006
TOTAL		0.625	0.000	0.890	0.114	0.258	0.027
A32 N	GR	0.033	0.000	0.042	0.002	-0.007	0.002
	T1	-0.426	-0.004	-0.713	-0.086	0.164	-0.020
	P1	-0.010	0.000	-0.017	-0.002	0.004	0.000
	SUM	-0.403	-0.004	-0.689	-0.085	0.161	-0.019
	RESP	0.248	0.001	0.200	0.022	0.149	0.006
TOTAL		0.652	0.006	0.888	0.107	0.310	0.024
A32 M	GR	0.035	-0.001	0.036	-0.001	-0.018	0.001
	T1	-0.513	0.000	-0.801	-0.031	0.072	-0.000
	P1	-0.013	0.000	-0.013	0.001	0.012	0.000
	SUM	-0.493	-0.009	-0.548	-0.055	0.076	-0.005
	RESP	0.276	0.003	0.218	0.014	0.125	0.003
TOTAL		0.769	0.013	0.766	0.070	0.602	0.008

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A32 F	GR	0.030	0.000	0.025	-0.001	-0.026	-0.001
	T1	-0.415	-0.001	-0.252	-0.025	0.755	0.010
	P1	-0.010	0.000	-0.006	-0.001	0.018	0.000
	SUM	-0.396	-0.001	-0.234	-0.027	0.726	0.009
	RESP	0.255	0.000	0.253	0.007	0.117	0.002
TOTAL		0.650	0.002	0.487	0.034	0.844	0.010
A33	GR	0.038	0.000	0.023	-0.001	-0.027	-0.001
	T1	-0.365	0.000	-0.192	-0.021	0.762	0.011
	P1	-0.009	0.000	-0.005	-0.001	0.019	0.000
	SUM	-0.346	0.000	-0.174	-0.023	0.753	0.011
	RESP	0.248	0.000	0.257	0.005	0.119	0.002
TOTAL		0.595	0.000	0.431	0.028	0.872	0.012
A34	GR	0.014	0.000	0.009	0.001	-0.027	0.000
	T1	-0.024	0.000	-0.009	-0.001	0.018	0.000
	P1	-0.001	0.000	0.005	0.000	0.018	0.000
	SUM	-0.009	0.000	0.006	-0.007	0.737	0.010
	RESP	0.224	0.000	0.271	0.001	0.117	0.002
TOTAL		0.233	0.000	0.507	0.008	0.854	0.012
A35 N	GR	0.012	0.000	0.007	0.002	-0.026	0.001
	T1	-0.001	0.000	-0.281	-0.002	0.744	0.007
	P1	0.001	0.000	0.007	0.000	0.018	0.000
	SUM	0.039	0.000	0.295	-0.006	0.705	0.008
	RESP	0.224	0.000	0.270	0.001	0.113	0.002
TOTAL		0.263	0.000	0.565	0.007	0.819	0.010
A35 M	GR	0.007	-0.001	-0.004	0.001	-0.017	-0.001
	T1	-0.120	0.000	-0.594	-0.001	0.754	0.001
	P1	0.003	0.000	0.004	0.000	0.011	0.000
	SUM	0.130	-0.001	0.594	-0.004	0.430	-0.001
	RESP	0.228	0.000	0.251	0.001	0.086	0.001
TOTAL		0.358	0.001	0.846	0.004	0.516	0.001
A35 F	GR	0.009	0.000	-0.009	-0.002	-0.005	0.000
	T1	0.042	0.000	0.012	0.002	0.702	0.000
	P1	0.001	0.000	0.001	0.000	0.011	0.000
	SUM	0.052	0.000	0.011	-0.004	0.089	-0.003
	RESP	0.208	0.000	0.208	0.000	0.116	0.001
TOTAL		0.260	0.000	0.919	0.004	0.205	0.003

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A36	GR	0.009	0.000	0.000	-0.003	-0.003	0.001
	T1	0.033	0.000	-0.709	0.000	0.000	0.000
	P1	0.000	0.000	-0.017	0.000	0.001	0.000
	SUM	0.042	0.000	-0.709	-0.003	0.003	-0.002
	RESP	0.199	0.000	0.199	0.000	0.124	0.000
	TOTAL	0.241	0.000	0.909	0.005	0.156	0.002
A37	GR	0.000	0.000	0.000	-0.003	0.006	0.002
	T1	0.026	0.000	-0.269	0.000	-0.001	0.000
	P1	0.006	0.000	0.006	0.000	-0.005	0.000
	SUM	0.267	0.000	-0.267	-0.003	-0.209	0.000
	RESP	0.000	0.000	0.000	0.000	0.085	0.000
	TOTAL	0.267	0.000	0.267	0.005	0.294	0.000
A38	GR	0.000	0.000	0.000	0.000	-0.002	-0.001
	T1	0.025	0.000	-0.153	0.000	0.001	0.000
	P1	0.003	0.000	0.003	0.000	0.001	0.000
	SUM	0.133	0.000	-0.133	-0.001	0.052	-0.002
	RESP	0.000	0.000	0.000	0.000	0.021	0.000
	TOTAL	0.133	0.000	0.133	0.001	0.073	0.002
A39	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A40	GR	0.000	0.000	0.000	0.133	0.000	0.082
	T1	-0.025	0.000	-0.153	0.000	-0.003	0.000
	P1	-0.003	0.000	-0.003	0.000	0.000	0.000
	SUM	-0.133	0.000	-0.133	0.133	-0.087	0.082
	RESP	0.000	0.000	0.000	0.000	0.042	0.028
	TOTAL	0.133	0.000	0.133	0.175	0.087	0.109
A41	GR	0.000	0.000	0.000	0.112	0.000	0.317
	T1	-0.025	0.000	-0.153	0.000	0.000	0.000
	P1	-0.003	0.000	-0.003	0.000	0.000	0.000
	SUM	-0.376	0.000	-0.154	0.112	0.000	0.317
	RESP	0.000	0.000	0.000	0.000	0.041	0.098
	TOTAL	0.376	0.000	0.154	0.152	0.041	0.415

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A42	GR	0.000	-0.658	0.000	0.144	0.000	0.497
	T1	-0.072	0.000	0.000	0.000	0.364	0.000
	P1	-0.072	0.000	0.000	0.000	0.364	0.000
	SUM	-1.815	-0.658	1.022	0.144	0.363	0.497
	RESP	0.000	0.191	0.000	0.048	0.000	0.159
	TOTAL	1.815	0.850	1.022	0.192	0.353	0.656
A43 N	GR	0.000	-0.664	0.000	0.147	0.000	0.496
	T1	-0.072	0.000	1.002	0.000	0.324	0.000
	P1	-0.072	0.000	1.002	0.000	0.324	0.000
	SUM	-1.822	-0.664	1.024	0.147	0.323	0.496
	RESP	0.000	0.193	0.000	0.049	0.000	0.159
	TOTAL	1.822	0.858	1.026	0.196	0.333	0.656
A43 M	GR	0.000	-0.703	0.000	0.173	0.000	0.491
	T1	-0.838	0.000	1.020	0.000	0.097	0.000
	P1	-0.838	0.000	1.020	0.000	0.097	0.000
	SUM	-1.882	-0.703	1.044	0.173	0.099	0.491
	RESP	0.000	0.205	0.000	0.057	0.000	0.158
	TOTAL	1.882	0.908	1.044	0.231	0.099	0.649
A43 F	GR	0.000	-0.679	0.000	0.199	0.000	0.483
	T1	-0.832	0.000	1.001	0.000	-0.134	0.000
	P1	-0.832	0.000	1.001	0.000	-0.134	0.000
	SUM	-1.880	-0.679	1.025	0.199	-0.137	0.483
	RESP	0.000	0.197	0.000	0.066	0.000	0.155
	TOTAL	1.880	0.876	1.025	0.265	0.137	0.638
A44	GR	0.000	-0.674	0.000	0.201	0.000	0.482
	T1	-1.832	0.000	0.999	0.000	-0.154	0.000
	P1	-1.832	0.000	0.999	0.000	-0.154	0.000
	SUM	-1.876	-0.674	1.023	0.201	-0.154	0.482
	RESP	0.000	0.196	0.000	0.067	0.000	0.155
	TOTAL	1.876	0.869	1.023	0.268	0.158	0.637
A45	GR	0.000	0.000	0.000	0.146	0.000	0.386
	T1	-0.151	0.000	0.000	0.000	-0.468	0.000
	P1	-0.151	0.000	0.000	0.000	-0.468	0.000
	SUM	-0.302	0.000	0.000	0.000	-0.936	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.121
	TOTAL	0.151	0.000	0.820	0.186	0.481	0.511

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A46	GR	0.000	0.000	0.000	-0.039	0.000	0.287
	T1	-0.112	0.000	0.595	0.000	0.110	0.000
	P1	-0.073	0.000	0.609	0.000	0.113	0.297
	SUM	-0.112	0.000	0.609	-0.039	0.113	0.297
	TOTAL	0.000	0.000	0.609	0.011	0.000	0.092
A47	GR	0.112	0.000	0.609	0.050	0.113	0.379
	T1	0.000	0.000	0.000	0.012	0.000	0.188
	P1	-0.073	0.000	0.389	0.000	-0.056	0.000
	SUM	-0.073	0.000	0.389	0.012	-0.056	0.188
	TOTAL	0.000	0.000	0.000	0.012	0.000	0.188
A48	GR	0.073	0.000	0.398	0.003	0.057	0.248
	T1	0.000	0.000	0.000	0.015	0.057	0.248
	P1	0.000	0.000	0.000	-0.003	0.000	0.094
	SUM	0.000	0.000	0.000	-0.003	0.000	0.094
	TOTAL	0.000	0.000	0.000	-0.003	0.000	0.094
A49	GR	0.000	0.000	0.199	0.004	0.006	0.124
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A50	GR	0.000	0.000	0.201	0.000	0.001	0.002
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A51	GR	0.000	0.000	0.401	0.000	0.000	0.005
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A52	GR	0.000	0.000	0.000	0.000	0.000	0.007
	T1	0.000	0.000	-0.588	0.000	-0.014	0.000
	P1	0.000	0.000	-0.014	0.000	0.000	0.000
	SUM	0.000	0.000	-0.602	0.000	0.000	0.007
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.007
A53	GR	0.000	0.000	0.000	0.002	0.000	0.009
	T1	0.000	0.000	-0.784	0.000	0.054	0.000
	P1	0.000	0.000	-0.019	0.000	0.001	0.000
	SUM	0.000	0.000	-0.803	0.002	0.055	0.000
	TOTAL	0.000	0.000	0.000	0.002	0.052	0.009
153	GR	0.000	0.000	0.000	-0.006	0.000	0.011
	T1	0.000	0.000	-0.980	0.000	-0.202	0.000
	P1	0.000	0.000	-0.024	0.000	-0.005	0.000
	SUM	0.000	0.000	-1.004	0.000	-0.207	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.102	0.000
A54	GR	0.000	0.000	1.003	0.006	0.309	0.011
	T1	0.000	0.000	0.000	0.018	0.000	0.014
	P1	0.495	0.000	-1.183	0.000	0.234	0.000
	SUM	0.507	0.000	-1.183	0.018	0.234	0.000
	TOTAL	1.044	0.000	1.212	0.018	0.432	0.014
A55 N	GR	0.000	0.002	0.000	0.015	0.000	0.014
	T1	0.468	0.000	-1.191	0.000	0.296	0.000
	P1	0.076	0.000	-0.929	0.000	0.007	0.000
	SUM	0.544	0.002	-2.120	0.015	0.296	0.000
	TOTAL	1.035	0.002	1.219	0.015	0.487	0.014
A55 M	GR	0.000	0.005	0.000	0.009	0.000	0.012
	T1	0.225	0.000	-1.119	0.000	0.652	0.000
	P1	0.006	0.000	-0.027	0.000	0.016	0.000
	SUM	0.231	0.005	-1.146	0.009	0.668	0.000
	TOTAL	0.867	0.005	1.178	0.009	0.807	0.012

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A55 F	GR	0.000	0.001	0.000	0.005	0.000	0.009
	P1	0.031	0.000	-0.792	0.000	0.000	0.000
	T1	0.001	0.000	-0.018	0.000	0.023	0.000
	SUM	0.032	0.001	-0.743	0.005	0.023	0.009
	TOTAL	0.032	0.001	-0.743	0.005	0.023	0.009
A56	GR	0.000	0.000	0.000	0.005	0.000	0.009
	P1	0.004	0.000	-0.015	0.000	0.000	0.000
	T1	0.004	0.000	-0.015	0.000	0.000	0.000
	SUM	0.008	0.000	-0.030	0.005	0.000	0.009
	TOTAL	0.008	0.000	-0.030	0.005	0.000	0.009
I56	GR	0.000	0.000	0.000	-0.005	0.000	-0.010
	P1	-0.009	0.000	0.000	0.000	0.000	0.000
	T1	-0.009	0.000	0.000	0.000	0.000	0.000
	SUM	-0.018	0.000	0.000	-0.005	0.000	-0.010
	TOTAL	-0.018	0.000	0.000	-0.005	0.000	-0.010
A57 N	GR	0.000	0.001	0.000	-0.006	0.000	-0.010
	P1	-0.002	0.000	0.000	0.000	0.000	0.000
	T1	-0.002	0.000	0.000	0.000	0.000	0.000
	SUM	-0.004	0.001	0.000	-0.006	0.000	-0.010
	TOTAL	-0.004	0.001	0.000	-0.006	0.000	-0.010
A57 M	GR	0.000	0.005	0.000	-0.009	0.000	-0.013
	P1	-0.007	0.000	0.000	0.000	0.000	0.000
	T1	-0.007	0.000	0.000	0.000	0.000	0.000
	SUM	-0.014	0.005	0.000	-0.009	0.000	-0.013
	TOTAL	-0.014	0.005	0.000	-0.009	0.000	-0.013
A57 F	GR	0.000	0.002	0.000	-0.016	0.000	-0.014
	P1	-0.013	0.000	0.000	0.000	0.000	0.000
	T1	-0.013	0.000	0.000	0.000	0.000	0.000
	SUM	-0.026	0.002	0.000	-0.016	0.000	-0.014
	TOTAL	-0.026	0.002	0.000	-0.016	0.000	-0.014

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A58	GR	0.000	0.000	0.000	-0.018	0.000	-0.014
	P1	-0.034	0.000	1.640	0.000	0.000	0.000
	T1	-0.034	0.000	1.640	0.000	0.000	0.000
	SUM	-0.068	0.000	3.280	0.000	0.000	0.000
	TOTAL	-0.068	0.000	3.280	0.000	0.000	0.000
A59	GR	0.000	0.000	0.000	0.005	0.000	-0.013
	P1	0.000	0.000	1.434	0.000	-0.217	0.000
	T1	0.000	0.000	1.434	0.000	-0.217	0.000
	SUM	0.000	0.000	2.868	0.005	-0.434	0.000
	TOTAL	0.000	0.000	2.868	0.005	-0.434	0.000
A60	GR	0.000	0.000	0.000	-0.001	0.000	-0.011
	P1	0.000	0.000	1.229	0.000	0.058	0.000
	T1	0.000	0.000	1.229	0.000	0.058	0.000
	SUM	0.000	0.000	2.458	0.000	0.116	0.000
	TOTAL	0.000	0.000	2.458	0.000	0.116	0.000
A61	GR	0.000	0.000	0.000	0.001	0.007	0.011
	P1	0.000	0.000	1.259	0.000	0.027	0.000
	T1	0.000	0.000	1.259	0.000	0.027	0.000
	SUM	0.000	0.000	2.518	0.001	0.034	0.011
	TOTAL	0.000	0.000	2.518	0.001	0.034	0.011
A62	GR	0.000	0.000	0.000	0.000	0.000	-0.009
	P1	0.000	0.000	1.024	0.000	-0.015	0.000
	T1	0.000	0.000	1.024	0.000	-0.015	0.000
	SUM	0.000	0.000	2.048	0.000	-0.030	0.000
	TOTAL	0.000	0.000	2.048	0.000	-0.030	0.000
A63	GR	0.000	0.000	0.000	0.000	0.000	0.007
	P1	0.000	0.000	0.819	0.000	0.004	0.000
	T1	0.000	0.000	0.819	0.000	0.004	0.000
	SUM	0.000	0.000	1.638	0.000	0.008	0.000
	TOTAL	0.000	0.000	1.638	0.000	0.008	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A64	GR	0.000	0.000	0.000	0.000	0.000	-0.004
	T1	0.000	0.000	0.410	0.000	0.000	0.000
	P1	0.000	0.000	0.010	0.000	0.000	0.000
	SUM	0.000	0.000	0.419	0.000	0.000	-0.004
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.420	0.000	0.000	0.004
A65	GR	0.000	0.000	0.000	0.000	0.000	0.002
	T1	0.000	0.000	0.205	0.000	0.000	0.000
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.210	0.000	0.000	-0.002
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.210	0.000	0.000	0.002
A66	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A67	GR	0.000	0.000	0.000	0.000	0.000	0.002
	T1	0.000	0.000	-0.205	0.000	0.000	0.000
	P1	0.000	0.000	-0.005	0.000	0.000	0.000
	SUM	0.000	0.000	-0.210	0.000	0.000	0.007
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.210	0.000	0.000	0.007
A68	GR	0.000	0.000	0.000	0.000	0.000	0.004
	T1	0.000	0.000	-0.409	0.000	0.000	0.000
	P1	0.000	0.000	-0.010	0.000	0.000	0.000
	SUM	0.000	0.000	-0.419	0.000	0.000	0.015
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.419	0.000	0.000	0.015
A69	GR	0.000	0.000	0.000	0.000	0.000	0.005
	T1	0.000	0.000	-0.015	0.000	0.000	0.000
	P1	0.000	0.000	-0.015	0.000	0.000	0.000
	SUM	0.000	0.000	-0.629	0.000	-0.001	0.022
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.629	0.000	0.002	0.022

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A70	GR	0.000	0.000	0.000	0.000	0.000	0.007
	T1	0.000	0.000	-0.000	0.000	0.000	0.000
	P1	0.000	0.000	-0.020	0.000	0.000	0.000
	SUM	0.000	0.000	-0.838	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.838	0.000	0.000	0.000
A71	GR	0.000	0.000	0.000	0.000	0.000	0.009
	T1	0.000	0.000	-1.025	0.000	-0.017	0.008
	P1	0.000	0.000	-0.020	0.000	-0.001	0.000
	SUM	0.000	0.000	-1.048	0.000	-0.017	0.007
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.048	0.000	0.000	0.000
A72	GR	0.000	0.000	0.000	0.000	0.000	0.011
	T1	0.000	0.000	-1.228	0.000	0.000	0.000
	P1	0.000	0.000	-0.020	0.000	0.000	0.000
	SUM	0.000	0.000	-1.258	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.258	0.000	0.000	0.000
A73	GR	0.000	0.000	0.000	0.000	0.000	0.013
	T1	0.000	0.000	-1.433	0.000	-0.239	0.009
	P1	0.000	0.000	-0.020	0.000	-0.001	0.000
	SUM	0.000	0.000	-1.467	0.000	-0.240	0.009
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.467	0.000	0.240	0.000
A74	GR	0.000	0.000	0.000	0.000	0.000	0.052
	T1	0.000	0.000	-1.467	0.000	0.000	0.000
	P1	0.000	0.000	-0.020	0.000	0.000	0.000
	SUM	0.000	0.000	-1.487	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.487	0.000	0.000	0.000
A75 N	GR	0.000	0.000	0.000	0.000	0.000	0.014
	T1	0.000	0.000	-1.639	0.000	0.269	0.004
	P1	0.000	0.000	-0.020	0.000	0.000	0.000
	SUM	0.000	0.000	-1.679	0.000	0.269	0.004
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.679	0.000	0.269	0.000
A75 N	GR	0.000	0.000	0.000	0.000	0.000	0.014
	T1	0.000	0.000	-1.647	0.000	0.269	0.004
	P1	0.000	0.000	-0.020	0.000	0.000	0.000
	SUM	0.000	0.000	-1.686	0.000	0.269	0.004
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	1.686	0.000	0.269	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A75 M	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A75 F	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A76	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
I76	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A77 N	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A77 M	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A77 F	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A78	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A79	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A80	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A81	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A82	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A83	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A84	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A85	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A86	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A87	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A88	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg.)		
		X	Y	Z	X	Y	Z
A89	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A90	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A91	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A92	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A93	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A94	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A95 M	GR	0.000	0.002	0.000	0.022	0.000	0.021
	T1	0.385	0.000	-1.652	0.000	0.160	0.000
	P1	0.010	0.000	-0.040	0.000	0.003	0.000
	SUM	0.395	0.002	-1.692	0.022	0.163	0.021
	RESP	0.844	0.000	0.001	0.000	0.245	0.000
	TOTAL	1.239	0.002	1.693	0.022	0.408	0.021
A95 M	GR	0.000	0.008	0.000	0.018	0.000	0.020
	T1	0.250	0.000	-1.632	0.000	0.321	0.000
	P1	0.007	0.000	-0.039	0.000	0.009	0.000
	SUM	0.256	0.008	-1.671	0.018	0.349	0.020
	RESP	0.945	0.000	0.037	0.000	0.157	0.000
	TOTAL	1.201	0.008	1.708	0.018	0.506	0.020
A95 F	GR	0.000	0.002	0.000	0.016	0.000	0.018
	T1	0.132	0.000	-1.424	0.000	0.500	0.000
	P1	0.003	0.000	-0.034	0.000	0.013	0.000
	SUM	0.135	0.002	-1.469	0.016	0.513	0.018
	RESP	0.970	0.000	0.091	0.000	0.067	0.000
	TOTAL	1.106	0.002	1.559	0.016	0.580	0.018
A96	GR	0.000	0.000	0.000	0.016	0.000	0.019
	T1	0.121	0.000	-1.381	0.000	0.523	0.000
	P1	0.003	0.000	-0.033	0.000	0.014	0.000
	SUM	0.127	0.000	-1.414	0.016	0.537	0.019
	RESP	0.970	0.000	0.097	0.000	0.052	0.000
	TOTAL	1.098	0.000	1.511	0.016	0.588	0.019
A97	GR	0.000	0.000	0.000	0.006	0.000	0.005
	T1	-0.000	0.000	-0.133	0.000	0.298	0.000
	P1	-0.001	0.000	-0.000	0.000	0.006	0.000
	SUM	-0.050	0.000	-0.133	0.006	0.304	-0.005
	RESP	0.971	0.000	0.000	0.000	0.060	0.000
	TOTAL	1.021	0.000	0.133	0.006	0.363	0.005
A98	GR	0.000	0.000	0.000	-0.005	0.000	0.005
	T1	-0.032	0.000	0.016	0.000	0.262	0.000
	P1	-0.000	0.000	0.000	0.000	0.016	0.000
	SUM	-0.237	0.000	0.116	-0.005	0.206	0.005
	RESP	0.971	0.000	0.000	0.000	0.061	0.000
	TOTAL	1.208	0.000	0.116	0.005	0.268	0.005

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A99	GR	0.000	0.000	0.000	-0.014	0.000	-0.018
	T1	-0.405	0.000	0.000	0.000	0.000	0.000
	P1	-0.010	0.000	0.024	0.000	0.010	0.000
	SUM	-0.415	0.000	1.033	-0.014	0.362	-0.018
	RESP	0.970	0.000	0.102	0.000	0.054	0.018
	TOTAL	1.385	0.000	1.135	0.014	0.416	0.018
A100 N	GR	0.000	0.002	0.000	-0.015	0.000	-0.017
	T1	-0.010	0.000	0.000	0.000	0.000	0.000
	P1	-0.010	0.000	0.095	0.000	0.000	0.000
	SUM	-0.423	0.002	1.070	-0.015	0.360	-0.017
	RESP	0.970	0.000	0.096	0.000	0.070	0.000
	TOTAL	1.393	0.002	1.165	0.015	0.410	0.017
A100 M	GR	0.000	0.007	0.000	-0.016	0.000	-0.018
	T1	-0.012	0.000	0.000	0.000	0.166	0.000
	P1	-0.012	0.000	0.028	0.000	0.000	0.000
	SUM	-0.511	0.007	1.189	-0.016	0.191	-0.018
	RESP	0.944	0.000	0.040	0.000	0.165	0.000
	TOTAL	1.454	0.007	1.229	0.016	0.356	0.018
A100 F	GR	0.000	0.002	0.000	-0.020	0.000	-0.019
	T1	-0.503	0.000	0.000	0.000	0.000	0.000
	P1	-0.012	0.000	0.026	0.000	0.000	0.000
	SUM	-0.577	0.002	1.179	-0.020	0.028	-0.019
	RESP	0.837	0.000	0.001	0.000	0.257	0.019
	TOTAL	1.414	0.002	1.180	0.020	0.285	0.019
A101	GR	0.000	0.000	0.000	-0.022	0.000	-0.019
	T1	-0.000	0.000	0.000	0.000	0.001	0.000
	P1	-0.000	0.000	0.000	0.000	0.000	0.000
	SUM	-0.579	0.000	1.172	-0.022	0.000	-0.019
	RESP	0.810	0.000	0.001	0.000	0.272	0.019
	TOTAL	1.388	0.000	1.173	0.022	0.272	0.019
A102	GR	0.000	0.000	0.000	-0.008	0.000	-0.016
	T1	-0.140	0.000	0.944	0.000	-0.128	0.000
	P1	-0.000	0.000	0.000	0.000	0.000	0.000
	SUM	-0.140	0.000	0.967	0.000	-0.128	0.000
	RESP	0.000	0.000	0.001	0.000	0.162	0.000
	TOTAL	0.140	0.000	0.967	0.008	0.294	0.016

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A103	GR	0.000	0.000	0.000	-0.002	0.000	-0.012
	T1	-0.112	0.000	0.755	0.000	0.024	0.000
	P1	0.000	0.000	0.018	0.000	0.001	0.000
	SUM	-0.112	0.000	0.773	0.000	0.025	0.000
	RESP	0.000	0.000	0.001	0.000	0.003	0.000
A104	GR	0.112	0.000	0.774	0.002	0.068	0.012
	T1	0.000	0.000	0.000	0.001	0.000	-0.009
	P1	-0.084	0.000	0.566	0.000	-0.034	0.000
	SUM	-0.084	0.000	0.014	0.000	0.000	0.000
	RESP	-0.004	0.000	0.000	0.000	0.011	0.000
A105	GR	0.084	0.000	0.580	0.001	0.046	0.009
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A106	GR	0.000	0.000	0.000	0.000	0.000	-0.003
	T1	0.000	0.000	0.378	0.000	-0.017	0.000
	P1	0.000	0.000	0.009	0.000	0.000	0.000
	SUM	0.000	0.000	0.387	0.000	0.003	0.000
	RESP	0.000	0.000	0.000	0.000	0.020	0.006
A107	GR	0.000	0.000	0.000	0.000	0.000	-0.003
	T1	0.000	0.000	0.189	0.000	0.004	0.000
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.193	0.000	0.001	0.000
	RESP	0.000	0.000	0.000	0.000	0.005	0.003
A108	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	-0.005	0.002	0.000	-0.012
	SUM	0.000	0.000	-0.005	0.002	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in.)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A109	GR	0.000	0.000	0.000	-0.003	0.000	-0.007
	T1	0.000	0.000	-0.377	-0.009	0.001	0.025
	P1	0.000	0.000	-0.009	0.000	0.000	0.000
	SUM	0.000	0.000	-0.386	-0.009	0.000	0.025
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A110	GR	0.000	0.000	0.000	0.010	0.000	-0.007
	T1	0.000	0.000	-0.566	0.035	-0.005	0.037
	P1	0.000	0.000	-0.014	0.001	0.000	0.001
	SUM	0.000	0.000	-0.580	0.036	-0.005	0.038
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A111	GR	0.000	0.000	0.580	0.066	0.007	0.031
	T1	0.003	0.026	0.611	-0.002	0.000	-0.008
	P1	0.000	0.001	-0.015	0.001	0.000	0.001
	SUM	0.003	0.027	0.596	-0.001	0.000	-0.007
	RESP	0.001	0.000	0.000	0.000	0.000	0.001
A112	GR	0.004	0.029	0.625	0.044	0.001	0.034
	T1	0.000	0.000	0.000	-0.009	0.000	-0.008
	P1	0.000	0.042	-0.635	0.033	0.012	0.042
	SUM	0.000	0.001	-0.015	0.001	0.000	0.001
	RESP	0.000	0.000	0.000	0.000	0.005	0.001
I112	GR	0.000	0.043	0.650	0.026	0.018	0.035
	T1	0.000	0.000	0.000	-0.004	0.001	-0.011
	P1	-0.064	0.053	-0.804	-0.005	-0.002	0.047
	SUM	0.000	0.001	-0.015	0.000	0.001	0.001
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
I113	GR	0.064	0.054	0.823	0.002	0.030	0.005
	T1	0.000	0.000	0.000	-0.005	0.001	-0.013
	P1	-0.077	0.064	-0.973	-0.014	0.076	0.958
	SUM	0.000	0.002	-0.023	0.000	0.002	0.001
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	GR	0.077	0.065	0.997	0.021	0.197	0.049

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A113	GR	0.001	0.000	0.000	0.019	0.001	-0.015
	T1	0.003	0.000	0.000	-0.034	-0.207	0.046
	P1	-0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	-0.003	0.000	0.000	-0.018	-0.173	0.034
	RESP	0.537	0.000	0.000	0.003	0.255	0.009
TOTAL		0.723	0.000	1.175	0.021	0.428	0.043
A114N	GR	0.001	0.002	0.000	0.018	0.001	-0.015
	T1	-0.163	-0.003	-0.156	-0.034	-0.207	0.046
	P1	-0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	-0.163	-0.003	-0.156	-0.034	-0.207	0.046
	RESP	0.563	0.000	0.000	0.003	0.248	0.008
TOTAL		0.729	0.002	1.183	0.020	0.459	0.040
A114M	GR	0.001	0.007	0.001	0.017	0.000	-0.016
	T1	0.002	-0.009	-0.122	-0.029	-0.422	0.032
	P1	0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	0.003	-0.002	-0.119	-0.013	-0.433	0.018
	RESP	0.675	0.001	0.045	0.004	0.200	0.005
TOTAL		0.678	0.003	1.193	0.017	0.632	0.022
A114F	GR	0.001	0.002	0.001	0.013	0.000	-0.021
	T1	0.139	-0.002	-0.073	-0.025	-0.658	0.018
	P1	0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	0.144	0.000	-0.074	-0.012	-0.643	-0.002
	RESP	0.712	0.000	0.128	0.004	0.139	0.002
TOTAL		0.856	0.001	1.022	0.016	0.782	0.004
A115	GR	0.001	0.000	0.001	0.012	0.000	-0.023
	T1	0.146	0.000	-0.066	-0.024	-0.660	0.016
	P1	0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	0.151	0.000	-0.065	-0.013	-0.676	-0.007
	RESP	0.752	0.000	0.142	0.004	0.127	0.002
TOTAL		0.864	0.000	0.967	0.016	0.803	0.009
A116	GR	0.001	0.000	0.000	-0.018	0.000	0.028
	T1	0.337	0.000	0.197	-0.004	-0.614	-0.003
	P1	0.003	0.000	0.000	-0.003	0.000	0.000
	SUM	0.344	0.000	0.197	-0.022	-0.629	0.025
	RESP	0.712	0.000	0.126	0.001	0.124	0.000
TOTAL		1.058	0.000	1.353	0.022	0.753	0.025

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A117N	GR	0.001	0.003	0.000	-0.019	0.000	0.026
	T1	0.003	0.000	0.000	-0.003	-0.378	-0.002
	P1	0.009	0.000	0.259	0.003	0.000	0.000
	SUM	0.354	0.003	1.260	-0.023	-0.592	0.024
	RESP	0.712	0.000	0.113	0.001	0.133	0.000
TOTAL		1.066	0.003	1.403	0.023	0.724	0.024
A117M	GR	0.001	0.010	0.000	-0.024	0.000	0.025
	T1	0.469	-0.001	1.479	0.000	-0.352	0.000
	P1	0.003	0.000	0.000	-0.003	-0.068	0.000
	SUM	0.482	0.000	1.479	0.000	-0.420	0.000
	RESP	0.680	0.000	0.038	0.000	0.173	0.000
TOTAL		1.162	0.010	1.553	0.023	0.533	0.025
A117F	GR	0.001	0.003	0.000	-0.028	0.000	0.025
	T1	0.596	0.000	1.498	0.002	-0.118	0.000
	P1	0.003	0.000	0.000	-0.003	-0.102	0.000
	SUM	0.601	0.003	1.498	0.002	-0.220	0.000
	RESP	0.586	0.000	0.000	0.000	0.204	0.000
TOTAL		1.197	0.003	1.534	0.026	0.324	0.025
A118	GR	0.001	0.000	0.000	-0.029	0.000	0.025
	T1	0.606	0.000	1.490	0.001	-0.078	0.000
	P1	0.003	0.000	0.000	-0.003	-0.091	0.000
	SUM	0.622	0.000	1.490	0.002	-0.169	0.000
	RESP	0.564	0.000	0.000	0.000	0.209	0.000
TOTAL		1.186	0.000	1.526	0.028	0.288	0.025
A119	GR	0.000	0.000	0.000	0.008	0.000	0.021
	T1	0.078	0.000	1.278	0.000	0.168	0.000
	P1	0.003	0.000	0.000	-0.003	-0.091	0.000
	SUM	0.078	0.000	1.309	0.007	0.172	0.022
	RESP	0.000	0.000	0.000	0.000	0.102	0.000
TOTAL		0.078	0.000	1.309	0.007	0.274	0.022
A120	GR	0.000	0.000	0.000	-0.002	0.000	0.018
	T1	0.065	0.000	1.065	0.000	-0.028	0.000
	P1	0.003	0.000	0.000	-0.003	-0.091	0.000
	SUM	0.065	0.000	1.065	0.000	-0.118	0.000
	RESP	0.000	0.000	0.000	0.000	0.027	0.000
TOTAL		0.065	0.000	1.091	0.002	0.056	0.018

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A121	GR	0.000	0.000	0.000	0.001	0.000	0.014
	P1	0.000	0.000	0.852	0.000	0.025	0.000
	T1	0.000	0.000	0.020	0.000	0.000	0.000
	SUM	0.000	0.000	0.873	0.001	0.026	0.014
	RESP	0.000	0.000	0.000	0.000	0.007	0.000
A122	TOTAL	0.000	0.000	0.873	0.001	0.033	0.014
	GR	0.000	0.000	0.000	0.000	0.000	0.011
	P1	0.000	0.000	0.019	0.000	0.007	0.000
	T1	0.000	0.000	0.015	0.000	0.000	0.000
	SUM	0.000	0.000	0.035	0.000	-0.007	0.011
A123	RESP	0.000	0.000	0.000	0.000	0.002	0.000
	TOTAL	0.000	0.000	0.035	0.000	0.009	0.011
	GR	0.000	0.000	0.000	0.000	0.000	0.007
	P1	0.000	0.000	0.010	0.000	0.002	0.000
	SUM	0.000	0.000	0.436	0.000	0.002	0.007
A124	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.436	0.000	0.002	0.007
	GR	0.000	0.000	0.000	0.000	0.000	0.004
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.218	0.000	0.000	0.004
A125	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.218	0.000	0.001	0.004
	GR	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
A126	RESP	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
	GR	0.000	0.000	0.000	0.000	0.000	0.003
	P1	0.000	0.000	-0.215	0.000	0.000	0.000
	SUM	0.000	0.000	-0.218	0.000	0.000	0.008

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A127	GR	0.000	0.000	0.000	0.000	0.000	0.005
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	-0.010	0.000	0.000	0.000
	SUM	0.000	0.000	0.436	0.000	0.001	0.015
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
A128	TOTAL	0.000	0.000	0.436	0.000	0.001	0.016
	GR	0.000	0.000	0.000	0.000	0.000	0.008
	P1	0.000	0.000	-0.658	0.000	0.002	0.015
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	-0.654	0.000	0.002	0.023
A129	RESP	0.000	0.000	0.000	0.000	0.002	0.000
	TOTAL	0.000	0.000	0.654	0.000	0.005	0.023
	GR	0.000	0.000	0.000	0.000	0.000	0.010
	P1	0.000	0.000	-0.851	0.000	-0.009	0.020
	SUM	0.000	0.000	-0.872	0.000	-0.001	0.031
A130	RESP	0.000	0.000	0.000	0.000	0.009	0.000
	TOTAL	0.000	0.000	0.872	0.001	0.018	0.031
	GR	0.000	0.000	0.000	0.002	0.000	0.013
	P1	0.000	0.000	-0.854	0.001	0.033	0.025
	SUM	0.000	0.000	-1.090	0.002	0.034	0.039
A131	RESP	0.000	0.000	0.000	0.000	0.033	0.000
	TOTAL	0.000	0.000	1.090	0.002	0.067	0.039
	GR	0.000	0.000	0.000	-0.006	0.000	0.016
	P1	0.000	0.000	-1.077	0.002	-0.195	0.030
	SUM	0.000	0.000	-1.077	0.000	-0.195	0.046
A132	RESP	0.000	0.000	-1.307	0.000	-0.200	0.046
	TOTAL	0.000	0.000	1.307	0.000	0.123	0.046
	GR	0.000	0.000	0.000	0.008	0.323	0.047
	P1	0.000	0.000	1.488	0.023	0.000	0.018
	SUM	0.000	0.000	-1.488	0.009	0.223	0.035

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A133M	GR	0.000	0.002	0.000	0.000	0.000	0.017
	P1	0.000	0.001	-1.496	0.011	0.006	0.005
	P1	0.000	0.000	-0.006	0.000	0.006	0.001
	SUM	0.000	0.000	-0.006	0.000	0.006	0.001
	RESP	0.488	0.003	-1.532	0.032	0.281	0.054
	TOTAL	0.488	0.003	-1.532	0.032	0.281	0.054
A133M	GR	1.173	0.003	1.532	0.032	0.505	0.055
	P1	0.007	0.000	0.000	0.014	0.000	0.017
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.262	0.011	-1.470	0.044	0.589	0.051
	TOTAL	0.785	0.000	0.039	0.000	0.175	0.000
A133F	GR	1.047	0.012	1.509	0.044	0.764	0.051
	P1	0.002	0.001	0.000	0.010	0.000	0.016
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.081	0.003	-1.117	0.064	0.868	0.039
	TOTAL	0.817	0.000	0.000	0.064	0.118	0.000
A134	GR	0.898	0.003	1.228	0.064	0.986	0.039
	P1	0.000	0.001	0.000	0.009	0.000	0.016
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.073	0.000	-1.021	0.067	0.911	0.036
	TOTAL	0.817	0.000	0.106	0.067	0.106	0.000
I134	GR	0.889	0.000	1.144	0.067	1.018	0.036
	P1	0.000	0.001	0.000	-0.009	0.000	-0.016
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.073	0.000	-1.021	0.067	0.911	0.036
	TOTAL	0.817	0.000	0.106	0.067	0.106	0.000
A135M	GR	0.893	0.000	1.146	0.069	1.018	0.036
	P1	0.000	0.001	0.000	-0.009	0.000	-0.016
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.073	0.000	-1.023	0.069	0.912	0.036
	TOTAL	0.817	0.000	0.123	0.069	0.106	0.000
A135M	GR	0.893	0.000	1.146	0.069	1.018	0.036
	P1	0.000	0.001	0.000	-0.009	0.000	-0.016
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	0.073	0.000	-1.023	0.069	0.912	0.036
	TOTAL	0.817	0.000	0.118	0.069	0.118	0.000

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A133M	GR	0.000	0.007	0.000	-0.014	0.000	-0.017
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	P1	0.000	0.000	-0.006	0.000	0.016	0.005
	SUM	-0.264	0.002	1.471	0.015	0.589	0.017
	RESP	0.785	0.000	0.039	0.000	0.175	0.000
	TOTAL	1.048	0.003	1.510	0.015	0.764	0.017
A133F	GR	0.000	0.002	0.000	-0.021	0.000	-0.018
	P1	-0.478	-0.001	1.496	0.011	0.275	0.035
	P1	-0.478	-0.001	1.496	0.011	0.275	0.035
	SUM	-0.956	0.001	1.532	-0.009	0.281	0.017
	RESP	0.685	0.000	0.000	0.000	0.223	0.000
	TOTAL	1.174	0.001	1.532	0.010	0.505	0.018
A136	GR	0.000	0.000	0.000	-0.023	0.000	-0.018
	P1	-0.504	0.000	1.488	0.009	0.223	0.035
	P1	-0.504	0.000	1.488	0.009	0.223	0.035
	SUM	-1.008	0.000	1.526	-0.013	0.228	0.017
	RESP	0.662	0.000	0.000	0.000	0.231	0.000
	TOTAL	1.177	0.000	1.524	0.014	0.459	0.018
A137	GR	0.000	0.000	0.000	0.006	0.000	-0.016
	P1	-0.068	0.000	1.277	-0.002	-0.195	0.030
	P1	-0.068	0.000	1.277	-0.002	-0.195	0.030
	SUM	-0.068	0.000	1.307	0.003	-0.200	0.015
	RESP	0.000	0.000	0.000	0.000	0.123	0.000
	TOTAL	0.068	0.000	1.307	0.003	0.323	0.015
A138	GR	0.000	0.000	0.000	-0.002	0.000	-0.013
	P1	0.000	0.000	1.064	0.001	0.033	0.025
	P1	0.000	0.000	1.064	0.001	0.033	0.025
	SUM	0.000	0.000	1.066	0.000	0.067	0.050
	RESP	0.000	0.000	0.000	0.000	0.033	0.000
	TOTAL	0.000	0.000	1.090	0.001	0.067	0.013
A139	GR	0.000	0.000	0.000	0.000	0.000	-0.011
	P1	0.000	0.000	0.851	0.000	-0.009	0.020
	P1	0.000	0.000	0.851	0.000	-0.009	0.020
	SUM	0.000	0.000	0.872	0.000	-0.009	0.040
	RESP	0.000	0.000	0.000	0.000	0.009	0.000
	TOTAL	0.000	0.000	0.872	0.000	0.018	0.010

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A140	GR	0.000	0.000	0.000	0.000	0.000	-0.008
	T1	0.000	0.000	0.638	0.000	0.002	0.015
	P1	0.000	0.000	0.015	0.000	0.000	0.007
	SUM	0.000	0.000	0.653	0.000	0.002	0.022
	TOTAL	0.000	0.000	0.654	0.000	0.002	0.008
A141	GR	0.000	0.000	0.000	0.000	0.000	-0.005
	T1	0.000	0.000	0.426	0.000	-0.001	0.010
	P1	0.000	0.000	0.010	0.000	0.000	0.000
	SUM	0.000	0.000	0.436	0.000	0.001	0.010
	TOTAL	0.000	0.000	0.436	0.000	0.001	0.005
A142	GR	0.000	0.000	0.000	0.000	0.000	-0.003
	T1	0.000	0.000	0.213	0.000	0.000	0.005
	P1	0.000	0.000	0.005	0.000	0.000	0.000
	SUM	0.000	0.000	0.218	0.000	0.000	0.005
	TOTAL	0.000	0.000	0.218	0.000	0.000	0.002
A143	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	TOTAL	0.000	0.000	0.000	0.000	0.000	0.000
A144	GR	0.000	0.000	0.000	0.000	0.000	0.004
	T1	0.000	0.000	-0.213	0.000	0.004	0.000
	P1	0.000	0.000	-0.005	0.000	0.000	0.000
	SUM	0.000	0.000	-0.218	0.000	0.004	0.000
	TOTAL	0.000	0.000	-0.218	0.000	0.004	0.004
A145	GR	0.000	0.000	0.000	0.000	0.000	0.008
	T1	0.000	0.000	-0.426	0.000	-0.017	0.000
	P1	0.000	0.000	-0.010	0.000	0.000	0.000
	SUM	0.000	0.000	-0.436	0.000	-0.017	0.008
	TOTAL	0.000	0.000	-0.437	0.000	0.018	0.008

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A146	GR	0.000	0.000	0.000	0.000	0.000	0.012
	T1	0.080	0.000	-0.632	0.000	-0.019	0.000
	P1	0.000	0.000	0.015	0.000	0.000	0.012
	SUM	0.080	0.000	-0.617	0.000	-0.019	0.012
	TOTAL	0.080	0.000	0.655	0.000	0.002	0.012
A147	GR	0.000	0.000	0.000	-0.001	0.000	0.016
	T1	0.107	0.000	-0.853	0.000	-0.019	0.000
	P1	0.000	0.000	-0.022	0.000	0.000	0.002
	SUM	0.107	0.000	-0.875	0.000	-0.019	0.002
	TOTAL	0.107	0.000	0.873	0.001	0.026	0.016
A148	GR	0.000	0.000	0.000	0.002	0.000	0.019
	T1	0.134	0.000	-1.066	0.000	-0.038	0.000
	P1	0.000	0.000	-0.022	0.000	0.000	0.019
	SUM	0.134	0.000	-1.088	0.002	-0.038	0.019
	TOTAL	0.134	0.000	1.091	0.002	0.065	0.019
A149	GR	0.000	0.000	0.000	-0.008	0.000	0.023
	T1	0.161	0.000	-1.279	0.000	-0.190	0.000
	P1	0.000	0.000	-0.022	0.000	0.000	0.023
	SUM	0.161	0.000	-1.301	0.000	-0.190	0.023
	TOTAL	0.161	0.000	1.310	0.008	0.289	0.023
A150	GR	0.000	0.000	0.000	0.030	0.000	0.027
	T1	0.899	0.000	-1.491	0.000	-0.075	0.000
	P1	0.021	0.000	-0.056	0.000	-0.002	0.027
	SUM	0.920	0.000	-1.547	0.030	-0.077	0.027
	TOTAL	1.399	0.000	1.527	0.030	0.226	0.027
A151N	GR	0.000	0.003	0.000	0.029	0.000	0.027
	T1	0.905	0.000	-1.498	0.000	-0.043	0.000
	P1	0.022	0.000	-0.056	0.000	-0.002	0.000
	SUM	0.927	0.003	-1.554	0.029	-0.045	0.000
	TOTAL	1.420	0.003	1.535	0.029	0.186	0.027

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A151M	GR	0.000	0.011	0.000	0.026	0.000	0.027
	P1	0.021	0.000	0.000	0.000	0.000	0.000
	SUM	0.021	0.011	0.000	0.026	0.000	0.027
	RESP	0.889	0.011	-1.555	0.026	0.151	0.027
	TOTAL	0.553	0.000	0.023	0.000	0.097	0.000
A151F	GR	1.442	0.011	-1.577	0.026	0.248	0.027
	P1	0.000	0.003	0.000	0.025	0.000	0.027
	SUM	0.718	0.000	-0.571	0.000	0.009	0.000
	RESP	0.807	0.003	-1.445	0.025	0.339	0.027
	TOTAL	0.569	0.000	0.058	0.000	0.052	0.000
A152	GR	1.376	0.003	1.503	0.025	0.391	0.027
	P1	0.000	0.000	0.000	0.024	0.000	0.028
	SUM	0.799	0.000	-1.408	0.024	0.348	0.028
	RESP	0.569	0.000	0.063	0.000	0.045	0.000
	TOTAL	1.368	0.000	1.472	0.024	0.413	0.028
A153	GR	0.000	0.000	0.000	0.014	0.000	-0.009
	P1	0.011	0.000	0.000	0.000	0.000	0.000
	SUM	0.594	0.000	-0.133	0.014	0.292	-0.009
	RESP	0.569	0.000	0.000	0.000	0.062	0.000
	TOTAL	1.163	0.000	0.133	0.014	0.354	0.009
A154	GR	0.000	-0.005	0.000	0.009	0.000	0.003
	P1	0.011	0.000	0.000	0.000	0.000	0.000
	SUM	0.501	-0.005	0.028	0.009	0.013	0.003
	RESP	0.569	0.000	0.066	0.000	0.029	0.000
	TOTAL	1.070	0.005	0.094	0.009	0.041	0.003
A155	GR	0.000	0.000	0.000	0.003	0.000	0.008
	P1	0.380	0.000	0.000	0.000	0.014	0.000
	SUM	0.389	0.000	0.000	0.003	0.013	0.008
	RESP	0.569	0.000	0.000	0.000	0.140	0.000
	TOTAL	0.958	0.000	0.000	0.003	0.153	0.008

DISPLACEMENTS

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A156	GR	0.000	0.000	0.000	-0.009	0.000	-0.013
	P1	0.184	0.000	0.000	0.000	-0.004	0.000
	SUM	0.086	0.000	0.000	-0.009	-0.004	-0.013
	RESP	0.569	0.000	0.199	0.000	0.000	0.000
	TOTAL	0.738	0.000	0.782	0.009	0.131	0.013
A157N	GR	0.000	0.001	0.000	-0.009	0.000	-0.010
	P1	0.053	0.000	0.000	0.000	-0.008	0.000
	SUM	0.053	0.000	0.000	-0.009	-0.018	-0.010
	RESP	0.569	0.000	0.198	0.000	0.126	0.000
	TOTAL	0.730	0.001	0.790	0.009	0.144	0.010
A157M	GR	0.000	0.001	0.000	-0.008	0.000	0.000
	P1	0.037	0.000	0.000	0.000	-0.101	0.000
	SUM	0.140	0.001	0.000	-0.008	-0.104	0.000
	RESP	0.542	0.000	0.606	0.000	0.194	0.000
	TOTAL	0.682	0.001	0.760	0.008	0.299	0.000
A157F	GR	0.000	-0.001	0.000	-0.001	0.000	0.001
	P1	0.004	0.000	0.001	0.000	-0.167	0.000
	SUM	0.195	-0.001	0.009	-0.001	-0.171	0.001
	RESP	0.433	0.000	0.595	0.000	0.276	0.001
	TOTAL	0.628	0.001	0.684	0.001	0.447	0.001
A159	GR	0.000	0.000	0.000	0.002	0.000	0.001
	P1	0.008	0.000	0.035	0.000	-0.177	0.000
	SUM	0.327	0.000	0.035	0.002	-0.182	0.001
	RESP	0.227	0.000	0.595	0.000	0.368	0.001
	TOTAL	0.555	0.000	0.631	0.002	0.490	0.001
A160N	GR	0.000	0.000	0.000	0.001	0.000	0.001
	P1	0.338	0.000	0.027	0.000	-0.171	0.000
	SUM	0.338	0.000	0.027	0.000	-0.171	0.000
	RESP	0.196	0.000	0.595	0.000	0.305	0.000
	TOTAL	0.542	0.000	0.623	0.001	0.481	0.001

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A160M	GR	0.000	0.000	0.000	0.001	0.000	0.001
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.395	0.000	-0.002	0.000	-0.003	0.000
	SUM	0.405	0.000	-0.039	0.001	-0.115	0.001
	RESP	0.055	0.000	0.549	0.000	0.275	0.000
TOTAL		0.460	0.000	0.588	0.001	0.389	0.001
A160F	GR	0.000	0.000	0.000	0.002	0.000	0.002
	T1	0.376	0.000	-0.087	0.000	-0.034	0.000
	P1	0.389	0.000	-0.090	0.000	-0.083	0.000
	SUM	0.765	0.000	-0.177	0.002	-0.117	0.002
	RESP	0.001	0.000	0.435	0.000	0.249	0.000
TOTAL		0.766	0.000	0.525	0.002	0.284	0.002
A161	GR	0.000	0.000	0.000	0.002	0.000	0.003
	T1	0.369	0.000	-0.089	0.000	-0.021	0.000
	P1	0.379	0.000	-0.093	0.000	-0.083	0.000
	SUM	0.748	0.000	-0.182	0.002	-0.104	0.003
	RESP	0.001	0.000	0.411	0.000	0.246	0.000
TOTAL		0.750	0.000	0.504	0.002	0.268	0.003
A162	GR	0.000	0.000	0.000	0.001	0.000	0.008
	T1	0.216	0.000	0.000	0.000	0.044	0.000
	P1	0.195	0.000	0.000	0.000	0.083	0.000
	SUM	0.411	0.000	0.000	0.001	0.127	0.000
	RESP	0.000	0.000	0.110	0.000	0.095	0.008
TOTAL		0.411	0.000	0.110	0.001	0.222	0.008
A163	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.000	0.000	0.000	0.000	0.000	0.000
A164	GR	0.000	0.000	0.000	0.007	0.000	-0.013
	T1	-0.215	0.000	-0.072	0.000	-0.145	0.000
	P1	-0.205	0.000	-0.072	0.000	-0.168	0.000
	SUM	-0.420	0.000	-0.144	0.007	-0.313	-0.013
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.220	0.000	0.072	0.007	0.151	0.013

*** Segment A end ***

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (in)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A165M	GR	0.000	0.002	0.000	0.007	0.000	-0.006
	T1	-0.110	0.000	0.000	0.000	0.000	0.000
	P1	-0.036	0.000	-0.001	0.000	-0.006	0.000
	SUM	-0.239	0.000	-0.112	0.007	-0.162	-0.006
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.239	0.002	0.112	0.007	0.162	0.006
A165M	GR	0.000	0.002	0.000	0.006	0.000	-0.001
	T1	-0.286	0.000	-0.149	0.000	-0.002	0.000
	P1	-0.083	0.000	-0.001	0.000	-0.001	0.000
	SUM	-0.293	0.002	-0.152	0.006	-0.021	-0.001
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.293	0.002	0.152	0.006	0.021	0.001
A165F	GR	0.000	0.000	0.000	0.003	0.000	-0.001
	T1	-0.256	0.000	-0.102	0.000	0.078	0.000
	P1	-0.083	0.000	-0.001	0.000	-0.001	0.000
	SUM	-0.263	0.000	-0.105	0.003	0.182	-0.001
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.263	0.000	0.105	0.003	0.182	0.001
A166	GR	0.000	0.000	0.000	0.003	0.000	-0.001
	T1	-0.207	0.000	-0.092	0.000	0.005	0.000
	P1	-0.083	0.000	-0.001	0.000	-0.001	0.000
	SUM	-0.263	0.000	-0.097	0.003	0.208	-0.001
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.263	0.000	0.097	0.003	0.208	0.001
A167	GR	0.000	0.000	0.000	0.000	0.000	0.000
	T1	0.000	0.000	0.000	0.000	0.000	0.000
	P1	0.000	0.000	0.000	0.000	0.000	0.000
	SUM	0.000	0.000	0.000	0.000	0.000	0.000
	RESP	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL		0.000	0.000	0.000	0.000	0.000	0.000

HYDRO-AB PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 43

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL		
						Dirn	Force	Deform
A01	GR	down	160	0.000	0.000	X	-160	0.000
A01	GR	left		0.000	0.000	Y		0.000
A01	GR	right		0.000	0.000	Z		0.000
A01	T1	down	183	0.000	0.000	X	-183	-0.102
A01	T1	right		0.000	0.000	Y		0.000
A01	T1	left		0.000	0.000	Z		-0.065
P1	down	right	11	0.000	0.000	X	-11	-0.002
P1	down	left		0.000	0.000	Y		0.000
P1	down	right		0.000	0.000	Z		0.000
SUM	down	right	160	0.000	0.000	X	-160	-0.104
SUM	down	left	194	0.000	0.000	Y	-194	-0.065
RESP	down	left	396	0.000	0.000	X	396	0.000
RESP	down	right		0.000	0.000	Y		0.000
RESP	down	left		0.000	0.000	Z		0.000
TOTAL	down	left	160	0.000	0.105	X	-160	0.105
TOTAL	down	right	590	0.000	0.006	Y	590	0.006
TOTAL	down	left	590	0.000	0.006	Z	590	0.006
GR	back	back	69	0.000	0.000	X	-69	0.000
GR	back	left		0.000	0.000	Y		0.000
GR	back	right		0.000	0.000	Z		0.000
T1	back	back		0.000	0.000	X		-0.235
T1	back	left		0.000	0.000	Y		-0.000
T1	back	right		0.000	0.000	Z		-0.258
P1	back	back		0.000	0.000	X		-0.006
P1	back	left		0.000	0.000	Y		0.000
P1	back	right		0.000	0.000	Z		-0.006
SUM	back	back	69	0.000	0.000	X	-69	-0.241
SUM	back	left		0.000	0.000	Y		-0.263
SUM	back	right		0.000	0.000	Z		0.001
RESP	back	back		0.000	0.000	X		0.000
RESP	back	left		0.000	0.000	Y		0.000
RESP	back	right		0.000	0.000	Z		0.232
TOTAL	back	back	69	0.000	0.242	X	69	0.242
TOTAL	back	left		0.000	0.000	Y		0.000
TOTAL	back	right		0.000	0.495	Z		0.495

HYDRO-AB PROJECT W-320 ES-320-M5, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 44

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL			GLOBAL		
						Dirn	Force	Deform	Dirn	Force	Deform
A04	GR	back	132	0.000	0.000	X	-132	0.000	X	-132	0.000
A04	GR	left		0.000	0.000	Y		0.000	Y		0.000
A04	GR	right		0.000	0.000	Z		0.000	Z		0.000
T1	back	back		0.000	0.000	X		-0.265	X		-0.265
T1	back	left		0.000	0.000	Y		0.000	Y		0.000
T1	back	right		0.000	0.000	Z		-0.230	Z		-0.230
P1	back	back		0.000	0.000	X		-0.007	X		-0.007
P1	back	left		0.000	0.000	Y		-0.006	Y		-0.006
P1	back	right		0.000	0.000	Z		-0.005	Z		-0.005
SUM	back	back	132	0.000	0.000	X	-132	-0.272	X	-132	-0.272
SUM	back	left		0.000	0.000	Y		-0.235	Y		-0.235
SUM	back	right		0.000	0.000	Z		0.000	Z		0.000
RESP	back	back		0.000	0.000	X		0.007	X		0.007
RESP	back	left		0.000	0.000	Y		0.000	Y		0.000
RESP	back	right		0.000	0.000	Z		0.260	Z		0.260
TOTAL	back	back	132	0.000	0.000	X	132	0.278	X	132	0.278
TOTAL	back	left		0.000	0.000	Y		0.000	Y		0.000
TOTAL	back	right		0.000	0.000	Z		0.496	Z		0.496
GR	down	down	208	0.000	0.000	X	0	0.000	X	0	0.000
GR	down	left	0	0.000	0.000	Y	-208	0.000	Y	-208	0.000
GR	down	right		0.000	0.000	Z	0	0.000	Z	0	0.000
T1	down	down	245	0.000	0.000	X	-173	-0.137	X	-173	-0.137
T1	down	left		0.000	0.000	Y		0.000	Y		0.000
T1	down	right		0.000	0.000	Z		-0.157	Z		-0.157
P1	down	down	7	0.000	0.000	X	-5	-0.004	X	-5	-0.004
P1	down	left		0.000	0.000	Y		0.000	Y		0.000
P1	down	right		0.000	0.000	Z		-0.004	Z		-0.004
SUM	down	down	208	0.000	0.000	X	-178	-0.141	X	-178	-0.141
SUM	down	left	232	0.000	0.000	Y	-208	0.000	Y	-208	0.000
SUM	down	right		0.000	0.000	Z		-0.141	Z		-0.141
RESP	down	down	180	0.000	0.000	X	127	0.127	X	127	0.127
RESP	down	left		0.000	0.000	Y		0.000	Y		0.000
RESP	down	right		0.000	0.000	Z		0.127	Z		0.127
TOTAL	down	down	208	0.000	0.000	X	306	0.368	X	306	0.368
TOTAL	down	left	432	0.000	0.000	Y	208	0.000	Y	208	0.000
TOTAL	down	right		0.000	0.000	Z		306	Z		306
GR	down	down	191	0.000	0.000	X	0	0.000	X	0	0.000

HYDRO-AB PROJECT U-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 45

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dim	Force	Dim	Force
A05 1 Stiff	:RIGID		left	0 0.000	Y	-191 0.000
T1	Guide		down	0.000	X	89 -0.257
			left	125 0.000	Y	0 0.000
P1			down	0.000	X	89 0.257
			left	5 0.000	Z	0 0.000
SUM			down	191 0.000	X	4 -0.006
			left	130 0.000	Z	4 0.006
RESP			down	92 -0.263	X	92 -0.263
			left	191 0.000	Z	-191 0.000
TOTAL			down	71 0.000	X	50 0.127
			left	0 0.000	Z	50 0.127
GR			down	191 0.000	X	142 0.391
			left	201 0.000	Z	191 0.000
T1	Guide		down	195 0.000	X	142 0.391
			right	0 0.000	Z	0 0.000
P1			down	129 0.377	X	-129 0.377
			right	0.000	Z	-129 0.377
SUM			down	9 0.000	X	-6 -0.009
			right	0 0.000	Z	-6 0.009
RESP			down	195 0.000	X	-135 -0.386
			right	191 0.000	Z	-195 0.000
TOTAL			down	5 0.000	X	-135 0.386
			left	3 0.127	Z	3 0.127
GR	Guide		down	195 0.000	X	139 0.513
			left	196 0.000	Z	195 0.000
A08 2 Stiff			down	196 0.000	X	139 0.513
			left	0 0.000	Z	-196 0.000

HYDRO-AB PROJECT U-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 46

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dim	Force	Dim	Force
A09 1 Stiff	:RIGID		down	0.000	Z	0 0.000
T1	Guide		down	469 0.000	X	331 -0.349
			left	0.000	Z	0 0.000
P1			down	18 0.000	X	331 0.643
			left	0.000	Z	0 0.000
SUM			down	196 0.000	X	13 -0.012
			left	486 0.000	Z	13 0.012
RESP			down	344 -0.352	X	344 -0.352
			left	196 0.000	Z	-196 0.000
TOTAL			down	40 0.000	X	344 0.656
			left	0.000	Z	0 0.000
GR	Inclined		down	196 0.000	X	28 0.128
			left	526 0.000	Z	28 0.128
A09 1 Stiff	:RIGID		down	146 0.000	X	372 0.489
			back	0.000	Z	196 0.000
T1	Guide		down	0.000	X	372 0.489
			back	0.000	Z	372 0.783
P1			down	0.000	X	0.000
			back	0.000	Z	-146 0.000
SUM			down	146 0.000	X	0.000
			back	0.000	Z	0.000
RESP			down	0.000	X	0.139
			back	0.000	Z	0.000
TOTAL			down	0.000	X	1.356
			back	0.000	Z	0.003
GR	Inclined		down	0.000	X	0.003
			back	0.000	Z	0.003
A11 1 Stiff	:RIGID		down	146 0.000	X	0.141
			back	0.000	Z	0.000
T1	Guide		down	0.000	X	1.388
			back	0.000	Z	0.000
P1			down	0.000	X	0.109
			back	0.000	Z	0.146
SUM			down	146 0.000	X	0.250
			back	0.000	Z	0.000
RESP			down	0.000	X	1.555
			back	0.000	Z	0.000
TOTAL			down	108 0.000	X	0.000
			back	0.000	Z	-108 0.000
A11 1 Stiff	Inclined		down	0.000	X	0.000
			back	0.000	Z	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 47

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
T1			back	0.000		X	0.155	
						Y	0.000	
						Z	1.340	
P1			back	0.000		X	0.004	
						Y	0.000	
						Z	0.032	
SUM			back	108	0.000	X	0.158	-108
						Y	0.000	
						Z	1.372	
RESP			back	0.000		X	0.097	
						Y	0.000	
						Z	0.097	
TOTAL			back	108	0.000	X	0.256	108
						Y	0.000	
						Z	1.470	
GR	A12 2 A12 2 Guide Stiff :RIGID		down left	195 0	0.000 0.000	X Y	0 -195	0 0.000
						Z	0	0.000
T1			down left	547	0.000	X Y	-387 0.517	387 0.789
						Z	387	0.789
P1			down left	18	0.000	X Y	-13 0.016	13 0.016
						Z	13	0.016
SUM			down left	195 564	0.000 0.000	X Y	-399 -195	0.533 0.000
						Z	399	0.805
RESP			down left	97	0.000	X Y	68 0.000	68 0.000
						Z	68	0.000
TOTAL			down left	195 661	0.000 0.000	X Y	467 195	0.533 0.000
						Z	467	0.805
GR	A13 1 A13 1 Guide Stiff :RIGID		down left	216 0	0.000 0.000	X Y	0 -216	0 0.000
						Z	0	0.000
T1			down	0.000		X	145	0.413

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 48

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
			right	205	0.000	Y	-145	0.000
						Z	0.631	
P1			down right	7	0.000	X Y	5 0.000	0.013 0.013
						Z	-5	0.013
SUM			down right	216 212	0.000 0.000	X Y	150 -216	0.426 0.000
						Z	-150	0.644
RESP			down left	45	0.000	X Y	32 0.000	0.000 0.000
						Z	32	0.000
TOTAL			down left	216 238	0.000 0.000	X Y	182 182	0.426 0.644
						Z	182	0.644
GR	A14 1 A14 1 Guide Stiff :RIGID		down left	211 0	0.000 0.000	X Y	0 -211	0.000 0.000
						Z	0	0.000
T1			down left	16	0.000	X Y	-11 0.311	0.000 0.000
						Z	11	0.473
P1			down left	2	0.000	X Y	-1 0.009	0.009 0.000
						Z	1	0.009
SUM			down left	211 18	0.000 0.000	X Y	-12 -211	0.320 0.000
						Z	12	0.482
RESP			down left	12	0.000	X Y	9 0.000	0.000 0.000
						Z	9	0.000
TOTAL			down left	211 30	0.000 0.000	X Y	21 211	0.320 0.000
						Z	21	0.482
GR	A15 1 A15 1 Guide Stiff :RIGID		down left	212 0	0.000 0.000	X Y	0 -212	0.000 0.000
						Z	0	0.000
T1			down left	33	0.000	X Y	-23 0.261	0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
A16 A16 1 Stiff :RIGID		P1	down	0.000	Z	23 0.261
			right	1 0.000	X	0 0.006
					Y	0 0.000
					Z	0 0.006
	SUM		down	212 0.000	X	-23 0.267
			left	33 0.000	Y	-212 0.000
					Z	23 0.267
	RESP		down	0.000	X	2 0.000
			left	3 0.000	Y	2 0.000
					Z	2 0.000
	TOTAL		down	212 0.000	X	25 0.268
			left	36 0.000	Y	212 0.000
					Z	23 0.268
	GR		down	212 0.000	X	0 0.000
			left	0 0.000	Y	-212 0.000
					Z	0 0.000
	T1		down	0.000	X	16 0.131
			right	23 0.000	Y	-16 0.131
					Z	0 0.000
	P1		down	0.000	X	0 0.003
			left	0 0.000	Y	0 0.003
					Z	0 0.003
	SUM		down	212 0.000	X	16 0.134
			right	23 0.000	Y	-212 0.000
					Z	-16 0.134
	RESP		down	0.000	X	1 0.000
			left	1 0.000	Y	1 0.000
					Z	1 0.000
	TOTAL		down	212 0.000	X	17 0.134
			left	24 0.000	Y	17 0.134
					Z	17 0.134
	GR		down	212 0.000	X	0 0.000
			right	1 0.000	Y	-212 0.000
					Z	0 0.000
	T1		up	0 0.000	X	8 -0.130
			right	11 0.000	Y	0 0.000
					Z	-8 -0.130

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
	P1		up	0 0.000	X	0 -0.003
			right	0 0.000	Y	0 0.000
					Z	0 -0.003
	SUM		down	212 0.000	X	9 -0.133
			right	12 0.000	Y	-212 0.000
					Z	-9 -0.133
	RESP		down	0 0.000	X	3 0.000
			left	5 0.000	Y	3 0.000
					Z	3 0.000
	TOTAL		down	212 0.000	X	12 0.133
			left	17 0.000	Y	212 0.000
					Z	12 0.133
	GR		down	210 0.000	X	-1 0.000
			left	2 0.000	Y	-210 0.000
					Z	1 0.000
	T1		down	0 0.000	X	-29 -0.260
			left	41 0.000	Y	0 0.000
					Z	29 -0.260
	P1		down	0 0.000	X	-1 -0.006
			left	1 0.000	Y	0 0.000
					Z	-1 -0.006
	SUM		down	211 0.000	X	-31 -0.266
			left	44 0.000	Y	-211 0.000
					Z	31 -0.266
	RESP		down	0 0.000	X	12 0.000
			left	17 0.000	Y	12 0.000
					Z	12 0.000
	TOTAL		down	211 0.000	X	43 0.267
			left	61 0.000	Y	211 0.000
					Z	43 0.267
	GR		down	218 0.000	X	5 0.000
			right	8 0.000	Y	-218 0.000
					Z	-5 0.000
	T1		up	2 0.000	X	106 -0.390
			right	151 0.000	Y	2 0.000
					Z	-106 -0.390
	P1		up	0 0.000	X	3 -0.009

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
SUM		back	61	0.000		X	-61
						Y	-0.110
						Z	-0.249
RESP		back	20	0.000		X	0.231
						Y	20
						Z	0.000
TOTAL		back	80	0.000		X	0.169
						Y	80
						Z	0.340
GR		down	190	0.000		X	-0.108
		right	26	0.000		Y	0.418
						Z	0.037
T1		down	31	0.000		X	-0.037
		right	507	0.000		Y	-34
						Z	0.037
P1		down	1	0.000		X	356
		right	13	0.000		Y	-192
						Z	-361
SUM		down	222	0.000		X	-0.192
		right	545	0.000		Y	9
						Z	-0.005
RESP		down	21	0.000		X	-0.005
		left	166	0.000		Y	-1
						Z	0.001
TOTAL		down	244	0.000		X	-9
		left	711	0.000		Y	-0.005
						Z	0.027
GR		down	240	0.000		X	367
		left	2	0.000		Y	-221
						Z	-404
T1		up	38	0.000		X	-0.160
		left	254	0.000		Y	117
						Z	0.155
P1		up	1	0.000		X	485
		left	6	0.000		Y	242
						Z	0.053
SUM		down	200	0.000		X	520
						Y	0.315
						Z	0.315
GR		down	240	0.000		X	-22
		left	2	0.000		Y	-258
						Z	-0.005
T1		up	38	0.000		X	-18
		left	254	0.000		Y	-0.037
						Z	0.037
P1		up	1	0.000		X	-176
		left	6	0.000		Y	-329
						Z	0.055
SUM		down	200	0.000		X	183
						Y	-0.329
						Z	0.055
GR		down	240	0.000		X	-4
		left	2	0.000		Y	-0.008
						Z	0.001
T1		up	38	0.000		X	1
		left	254	0.000		Y	-0.001
						Z	5
P1		up	1	0.000		X	-202
		left	6	0.000		Y	-0.300
						Z	0.008
SUM		down	200	0.000		X	-202
						Y	-0.300
						Z	0.008

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
SUM		back	262	0.000		Y	-199
						Z	-0.050
RESP		down	17	0.000		X	169
		left	95	0.000		Y	-0.300
						Z	68
TOTAL		down	218	0.000		X	17
		left	358	0.000		Y	0.026
						Z	0.026
GR		down	185	0.000		X	67
		left	16	0.000		Y	0.155
						Z	0.155
T1		down	76	0.000		X	270
		right	567	0.000		Y	0.456
						Z	216
P1		down	2	0.000		X	0.077
		right	14	0.000		Y	236
						Z	0.456
SUM		down	263	0.000		X	270
		right	564	0.000		Y	0.456
						Z	216
RESP		down	26	0.000		X	394
		left	157	0.000		Y	-0.166
						Z	-0.077
TOTAL		down	288	0.000		X	-0.407
		left	721	0.000		Y	-0.466
						Z	377
GR		back	125	0.000		X	-0.441
						Y	-0.441
T1		form	76	0.000		X	112
						Y	25
P1		form	2	0.000		X	110
						Y	0.026
SUM		back	48	0.000		X	-0.410
						Y	-0.716
						Z	76
GR		back	125	0.000		X	0.000
						Y	0.000
T1		form	76	0.000		X	-0.010
						Y	0.018
P1		form	2	0.000		X	-0.018
						Y	0.018
SUM		back	48	0.000		X	-0.388
						Y	-0.000
						Z	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 55

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
						Z	-0.692
	RESP	back	28	0.000		X	28
						Y	0.000
						Z	0.198
	TOTAL	back	75	0.000		X	75
						Y	0.000
						Z	0.890
A33, 1 A33 Inclined A33 Stiff	GR	back	83	0.000		X	0.028
						Y	0.000
						Z	-83
	T1	back	7	0.000		X	0.023
						Y	-0.365
						Z	-0.192
	P1	back	0	0.000		X	-0.009
						Y	0
						Z	-0.005
	SUM	back	90	0.000		X	-0.366
						Y	-0.000
						Z	-0.174
	RESP	back	29	0.000		X	0.248
						Y	29
						Z	0.257
	TOTAL	back	119	0.000		X	0.595
						Y	119
						Z	0.431
A34, 1 A34 Inclined A34 Stiff	GR	back	72	0.000		X	0.014
						Y	-72
						Z	0.009
	T1	forw	93	0.000		X	-0.022
						Y	0.222
						Z	-0.001
	P1	forw	2	0.000		X	-0.001
						Y	2
						Z	0.005
	SUM	forw	22	0.000		X	-0.009
						Y	0.000
						Z	22
	RESP						0.236

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 56

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL		GLOBAL	
								Dirn	Force
		RESP	back	32	0.000			X	0.224
								Y	-140
								Z	0.271
	TOTAL	back	55	0.000		X		X	0.233
						Y		Y	0.000
						Z		Z	0.507
A36, 1 A36 Inclined A36 Stiff	GR	back	142	0.000		X		X	0.009
						Y		Y	-142
						Z		Z	0.000
	T1	back	17	0.000		X		X	0.032
						Y		Y	0.000
						Z		Z	0.701
	P1	back	0	0.000		X		X	0.000
						Y		Y	0
						Z		Z	0.017
	SUM	back	159	0.000		X		X	0.042
						Y		Y	-159
						Z		Z	0.709
	RESP	back	5	0.000		X		X	0.199
						Y		Y	0.000
						Z		Z	0.199
	TOTAL	back	164	0.000		X		X	0.241
						Y		Y	0.000
						Z		Z	0.709
A37, 1 A37 Guide A37 Stiff	GR	down right	199 19	0.000 0.000		X		X	14
						Y		Y	-199
						Z		Z	-14
	T1	up left	0 601	0.000 0.000		X		X	-425
						Y		Y	0.260
						Z		Z	0.500
	P1	down left	15 0	0.000 0.000		X		X	-11
						Y		Y	0.006
						Z		Z	11
	SUM	down left	199 597	0.000 0.000		X		X	-422
						Y		Y	-199
						Z		Z	422
	RESP	down	0	0.000		X		X	123
									0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
			left	173	0.000	Z
		TOTAL	down left	199 770	0.000 0.000	X Y
A38 A39 A40 A41 A42 A43 A44 A45 A46 A47 A48 A49 A50 A51 A52 A53 A54 A55 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A73 A74 A75 A76 A77 A78 A79 A80 A81 A82 A83 A84 A85 A86 A87 A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide :RIGID	GR	down left	215 7	0.000 0.000	X Y
		T1	down right	0 217	0.000 0.000	X Y
		P1	up right	0 5	0.000 0.000	X Y
		SUM	down right	215 216	0.000 0.000	X Y
		RESP	down left	0 87	0.000 0.000	X Y
		TOTAL	down left	216 303	0.000 0.000	X Y
A40 A41 A42 A43 A44 A45 A46 A47 A48 A49 A50 A51 A52 A53 A54 A55 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A73 A74 A75 A76 A77 A78 A79 A80 A81 A82 A83 A84 A85 A86 A87 A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide :RIGID	GR	down left	62 0	0.000 0.000	X Y
		T1	down right	413	0.000	X
		P1	down right	13	0.000	X
		SUM	down right	62 426	0.000 0.000	X Y
		RESP	down left	42 0	0.000 0.000	X Y

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		TOTAL	down left	104 426	0.000 0.000	X Y
A41 A42 A43 A44 A45 A46 A47 A48 A49 A50 A51 A52 A53 A54 A55 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A73 A74 A75 A76 A77 A78 A79 A80 A81 A82 A83 A84 A85 A86 A87 A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide :RIGID	GR	down right	464 0	0.000 0.000	X Y
		T1	down left	934	0.000	X
		P1	down left	26	0.000	X
		SUM	down left	464 960	0.000 0.000	X Y
		RESP	down left	68 0	0.000 0.000	X Y
		TOTAL	down left	532 960	0.000 0.000	X Y
A45 A46 A47 A48 A49 A50 A51 A52 A53 A54 A55 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A73 A74 A75 A76 A77 A78 A79 A80 A81 A82 A83 A84 A85 A86 A87 A88 A89 A90 A91 A92 A93 A94 A95 A96 A97 A98 A99 A100	1 Guide :RIGID	GR	down left	450	0.000	X
		T1	down left	807	0.000	X
		P1	down left	22	0.000	X
		SUM	down left	450 828	0.000 0.000	X Y
		RESP	down left	56	0.000	X

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 59

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
A46 A46 1 Stiff	Guide :RIGID	TOTAL	down left	0.000 0.000	828 507	0.151 0.820
		GR	down left	0.000 0.000	129 -129	0.000 0.000
		T1	down right	0.000 0.000	336 -112	0.000 -0.112
		P1	down right	0.000 0.000	9 0.000	0.595 0.000
		SUM	down right	0.000 0.000	346 -129	0.112 -0.609
		RESP	down left	0.000 0.000	31 31	0.000 0.000
		TOTAL	down left	0.000 0.000	160 346	0.112 0.609
A47 A47 1 Stiff	Guide :RIGID	GR	down left	0.000 0.000	262 -262	0.000 0.000
		T1	down left	0.000 0.000	74 -74	0.000 -0.073
		P1	down left	0.000 0.000	3 -3	0.000 0.000
		SUM	down left	0.000 0.000	262 76	0.000 -0.073
		RESP	down left	0.000 0.000	8 8	0.000 0.000
		TOTAL	down	0.000	271	0.073

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 60

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirm Force	Deform	GLOBAL Dirm Force	Deform
A48 A48 1 Stiff	Guide :RIGID	GR	down left	0.000 0.000	214 -214	0.000 0.000
		T1	down right	0.000 0.000	1 1	0.000 0.195
		P1	down right	0.000 0.000	1 1	0.000 0.005
		SUM	down right	0.000 0.000	214 -214	0.000 0.000
		RESP	down left	0.000 0.000	3 3	0.000 0.000
		TOTAL	down left	0.000 0.000	217 2	0.000 0.199
A50 A50 1 Stiff	Guide :RIGID	GR	down left	0.000 0.000	225 -225	0.000 0.000
		T1	down right	0.000 0.000	3 3	0.000 -0.196
		P1	down right	0.000 0.000	0 0	0.000 -0.005
		SUM	down right	0.000 0.000	225 4	0.000 -0.201
		RESP	down left	0.000 0.000	2 2	0.000 0.000
		TOTAL	down left	0.000 0.000	225 5	0.000 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 61

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Down	Force	Deform	Dim	Force	Deform
A51 A51.1 Stiff	Guide :RIGID	GR	down left	225 0.000	0.000	Z	-225 0.000	0.000
		T1	down left	12 0.000	0.000	X Y Z	-12 0.000 0.000	0.000
		P1	down left	0 0.000	0.000	X Y Z	0 0.000 0.000	0.000
		SUM	down left	225 13	0.000 0.000	X Y Z	-13 -225 0.000	0.000
		RESP	down left	6 0.000	0.000	X Y Z	6 0.000 0.000	0.000
		TOTAL	down left	225 19	0.000 0.000	X Y Z	19 225 0.000	0.000
A52 A52.1 Stiff	Guide :RIGID	GR	down left	227 0.000	0.000	X Y Z	-227 0.000 0.000	0.000
		T1	down right	46 0.000	0.000	X Y Z	46 0.000 0.000	0.000
		P1	down right	1 0.000	0.000	X Y Z	1 0.000 0.000	0.000
		SUM	down right	227 47	0.000 0.000	X Y Z	47 -227 0.000	0.000
		RESP	down left	23 0.000	0.000	X Y Z	23 0.000 0.000	0.000
		TOTAL	down left	227 70	0.000 0.000	X Y Z	70 227 0.000	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 62

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Down	Force	Deform	Dim	Force	Deform
A53 A53.1 Stiff	Guide :RIGID	GR	down left	220 0.000	0.000	X Y Z	-220 0.000 0.000	0.000
		T1	down left	172 0.000	0.000	X Y Z	-172 0.000 0.000	0.000
		P1	down left	4 0.000	0.000	X Y Z	-4 0.000 0.000	0.000
		SUM	down left	220 176	0.000 0.000	X Y Z	-176 -220 0.000	0.000
		RESP	down left	87 0.000	0.000	X Y Z	87 0.000 0.000	0.000
		TOTAL	down left	220 262	0.000 0.000	X Y Z	262 220 0.000	0.000
I53 I53.1 Stiff	Guide :RIGID	GR	down left	244 0.000	0.000	X Y Z	-244 0.000 0.000	0.000
		T1	down right	465 0.000	0.000	X Y Z	465 0.000 0.000	0.000
		P1	down right	11 0.000	0.000	X Y Z	11 0.000 0.000	0.000
		SUM	down right	244 477	0.000 0.000	X Y Z	477 -244 0.000	0.000
		RESP	down left	147 0.000	0.000	X Y Z	147 0.000 0.000	0.000
		TOTAL	down left	244 624	0.000 0.000	X Y Z	624 244 0.000	0.000
A54		GR	back	176 0.000	0.000	X	0.000	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dirn	Force	Deform
A56 1 Stiff	Inclined :RIGID							
		T1	back	0.000		X	-176	0.000
						Y		0.495
						Z		0.000
		P1	back	0.000		X	-1.183	0.000
						Y		0.012
						Z		-0.028
		SUM	back	176	0.000	X	-176	0.507
						Y		0.000
						Z		-1.212
		RESP	back	0.000		X	0.536	0.000
						Y		-1.000
						Z		0.000
		TOTAL	back	176	0.000	X	1.044	0.000
						Y	176	0.000
						Z		1.212
A56 1 Stiff	Inclined :RIGID	GR	back	106	0.000	X	-106	0.000
						Y		0.000
						Z		0.000
		T1	back	0.000		X	0.024	0.000
						Y		-0.000
						Z		-0.625
		P1	back	0.000		X	0.001	0.000
						Y		0.000
						Z		-0.015
		SUM	back	106	0.000	X	0.024	0.000
						Y	-106	0.000
						Z		-0.638
		RESP	back	0.000		X	0.661	0.000
						Y		0.000
						Z		0.095
		TOTAL	back	106	0.000	X	0.436	0.000
						Y	106	0.000
						Z		0.733
I56 1 I56 1	Inclined	GR	back	105	0.000	X	-105	0.000
						Y		0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dirn	Force	Deform
		T1	back	0.000		X	-0.089	0.000
						Y		0.000
						Z		1.085
		P1	back	0.000		X	-0.002	0.000
						Y		0.000
						Z		0.026
		SUM	back	105	0.000	X	-0.091	0.000
						Y		0.000
						Z		1.111
		RESP	back	0.000		X	0.661	0.000
						Y		0.000
						Z		0.094
		TOTAL	back	105	0.000	X	0.753	0.000
						Y	105	0.000
						Z		1.205
A59 1 Stiff	Inclined :RIGID	GR	back	178	0.000	X	-178	0.000
						Y		0.000
						Z		0.000
		T1	back	0.000		X	-0.554	0.000
						Y		0.000
						Z		1.640
		P1	back	0.000		X	-0.014	0.000
						Y		0.000
						Z		0.039
		SUM	back	178	0.000	X	-0.568	0.000
						Y	-178	0.000
						Z		1.680
		RESP	back	0.000		X	0.538	0.000
						Y		0.000
						Z		0.000
		TOTAL	back	178	0.000	X	1.105	0.000
						Y	178	0.000
						Z		1.680
A59 1 Stiff	Guide	GR	down left	250	0.000	X	-250	0.000
						Y		0.000
						Z		0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn Force	Deform
T1			down left	463	0.000 0.000 0.000	X Y Z	-463 0.000 1.434
P1			down left	11	0.000 0.000 0.000	X Y Z	-11 0.000 0.034
SUM			down left	250 474	0.000 0.000 0.000	X Y Z	-474 -250 0.000
RESP			down left	138	0.000 0.000 0.000	X Y Z	138 0.000 0.000
TOTAL			down left	250 612	0.000 0.000 0.000	X Y Z	612 250 0.000
GR	A60 1 Guide Stiff :RIGID		down left	231	0.000 0.000 0.000	X Y Z	-231 0.000 0.000
T1			down right	168	0.000 0.000 0.000	X Y Z	168 0.000 1.229
P1			down right	4	0.000 0.000 0.000	X Y Z	4 0.000 0.029
SUM			down right	231 173	0.000 0.000 0.000	X Y Z	173 -231 0.000
RESP			down left	80	0.000 0.000 0.000	X Y Z	80 0.000 0.000
TOTAL			down left	231 252	0.000 0.000 0.000	X Y Z	252 231 0.000
GR	A61 1 Guide Stiff :RIGID		down left	237	0.000 0.000 0.000	X Y Z	-237 0.000 0.000
T1			down		0.000	X	-45 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn Force	Deform
P1			down left	45	0.000 0.000 0.000	X Y Z	1.024 0.000 0.000
SUM			down left	237 46	0.000 0.000 0.000	X Y Z	-46 -237 0.000
RESP			down left	21	0.000 0.000 0.000	X Y Z	21 0.000 0.000
TOTAL			down left	237 67	0.000 0.000 0.000	X Y Z	67 -237 0.000
GR	A62 1 Guide Stiff :RIGID		down left	235	0.000 0.000 0.000	X Y Z	-235 0.000 0.000
T1			down right	12	0.000 0.000 0.000	X Y Z	12 0.000 0.819
P1			down right	0	0.000 0.000 0.000	X Y Z	0 0.000 0.020
SUM			down right	235 12	0.000 0.000 0.000	X Y Z	-12 -235 0.000
RESP			down left	6	0.000 0.000 0.000	X Y Z	6 0.000 0.000
TOTAL			down left	235 18	0.000 0.000 0.000	X Y Z	18 235 0.000
GR	A63 1 Guide Stiff :RIGID		down left	236	0.000 0.000 0.000	X Y Z	-236 0.000 0.000
T1			down left	3	0.000 0.000 0.000	X Y Z	-3 0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
P1		down left	0	0.000	X	0
				0.000	Y	0
				0.000	Z	0.015
SUM		down left	235	0.000	X	-3
				0.000	Y	-235
				0.000	Z	0.629
RESP		down left	2	0.000	X	2
				0.000	Y	0
				0.000	Z	0.000
TOTAL		down left	235	0.000	X	5
				0.000	Y	235
				0.000	Z	0.629
GR		down left	235	0.000	X	0
				0.000	Y	-235
				0.000	Z	0.000
T1		down right	1	0.000	X	1
				0.000	Y	0
				0.000	Z	0.410
P1		down right	0	0.000	X	0
				0.000	Y	0
				0.010	Z	0.000
SUM		down right	235	0.000	X	1
				0.000	Y	-235
				0.000	Z	0.419
RESP		down left	0	0.000	X	0
				0.000	Y	0
				0.000	Z	0.000
TOTAL		down left	235	0.000	X	1
				0.000	Y	235
				0.000	Z	0.420
GR		down left	235	0.000	X	0
				0.000	Y	-235
				0.000	Z	0.000
T1		down left	0	0.000	X	0
				0.000	Y	0
				0.000	Z	0.205

A64
A64.1
Stiff :RIGID

A65
A65.1
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
P1			down left	0	0.000	X
				0.000	Y	0
				0.000	Z	0.005
SUM			down left	235	0.000	X
				0	0.000	Y
				0.000	Z	-235
RESP			down left	0	0.000	X
				0.000	Y	0
				0.000	Z	0.000
TOTAL			down left	235	0.000	X
				0	0.000	Y
				0.000	Z	235
GR			down left	235	0.000	X
				0.000	Y	-235
				0.000	Z	0.000
T1			down right	0	0.000	X
				0.000	Y	0
				0.000	Z	-0.205
P1			down right	0	0.000	X
				0.000	Y	0
				0.000	Z	0.000
SUM			down right	235	0.000	X
				0	0.000	Y
				0.000	Z	-235
RESP			down left	0	0.000	X
				0.000	Y	0
				0.000	Z	0.000
TOTAL			down left	235	0.000	X
				0	0.000	Y
				0.000	Z	235
GR			down left	235	0.000	X
				0	0.000	Y
				0.000	Z	-235
T1			up left	0	0.000	X
				1	0.000	Y
				0	0.000	Z
P1			up	0	0.000	X
				0	0.000	Y
				0	0.000	Z

A67
A67.1
Stiff :RIGID

A68
A68.1
Stiff :RIGID

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 69

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
A69 A70 1 A71 Guide Stiff :RIGID	SUM	down left	left	0	0.000	Z	0	0.000
			down	235	0.000	X	-1	0.000
			left	1	0.000	Y	-235	0.000
	RESP	down left	Z			Z		-0.419
			down	0	0.000	X	0	0.000
			left	0	0.000	Y	0	0.000
	TOTAL	down left	Z			Z		0.000
			down	235	0.000	X	1	0.000
			left	1	0.000	Y	235	0.000
			Z			Z		0.419
A69 A70 1 A71 Guide Stiff :RIGID	GR	down right	down	236	0.000	X	0	0.000
			right	0	0.000	Y	-236	0.000
			Z			Z		0.000
	T1	down right	down	0	0.000	X	4	0.000
			right	4	0.000	Y	0	0.000
			Z			Z		-0.614
	P1	down right	down	0	0.000	X	0	0.000
			right	0	0.000	Y	0	0.000
			Z			Z		-0.015
	SUM	down right	down	236	0.000	X	4	0.000
			right	4	0.000	Y	-236	0.000
			Z			Z		-0.629
A70 A71 Guide Stiff :RIGID	RESP	down left	down	0	0.000	X	2	0.000
			left	2	0.000	Y	0	0.000
			Z			Z		0.000
	TOTAL	down left	down	236	0.000	X	5	0.000
			left	5	0.000	Y	236	0.000
			Z			Z		0.629
	GR	down left	down	235	0.000	X	0	0.000
			left	0	0.000	Y	-235	0.000
			Z			Z		0.000
	T1	up left	up	0	0.000	X	-13	0.000
			left	13	0.000	Y	0	0.000
			Z			Z		-0.819
A70 A71 Guide Stiff :RIGID	P1	up left	up	0	0.000	X	0	0.000
			left	0	0.000	Y	0	0.000
			Z			Z		0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 70

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
A71 A71 Guide Stiff :RIGID	SUM	down left	down	235	0.000	X	-14	0.000
			left	14	0.000	Y	-235	0.000
			Z			Z		-0.838
	RESP	down left	down	0	0.000	X	6	0.000
			left	6	0.000	Y	0	0.000
			Z			Z		0.000
	TOTAL	down left	down	235	0.000	X	19	0.000
			left	19	0.000	Y	235	0.000
			Z			Z		0.838
	GR	down right	down	237	0.000	X	0	0.000
			right	0	0.000	Y	-237	0.000
			Z			Z		0.000
A71 A71 Guide Stiff :RIGID	T1	down right	down	1	0.000	X	50	0.000
			right	50	0.000	Y	-1	0.000
			Z			Z		-1.023
	P1	down right	down	0	0.000	X	1	0.000
			right	1	0.000	Y	0	0.000
			Z			Z		-0.025
	SUM	down right	down	237	0.000	X	51	0.000
			right	51	0.000	Y	-237	0.000
			Z			Z		-1.048
	RESP	down left	down	0	0.000	X	22	0.000
			left	22	0.000	Y	0	0.000
			Z			Z		0.000
A72 A72 Guide Stiff :RIGID	TOTAL	down left	down	237	0.000	X	73	0.000
			left	73	0.000	Y	237	0.000
			Z			Z		1.048
	GR	down left	down	231	0.000	X	0	0.000
			left	0	0.000	Y	-231	0.000
			Z			Z		0.000
	T1	up left	up	2	0.000	X	-186	0.000
			left	186	0.000	Y	2	0.000
			Z			Z		-1.228
	P1	up left	up	0	0.000	X	-5	0.000
			left	5	0.000	Y	0	0.000
			Z			Z		-0.029

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 71

SUPPORT FORCES

Point/ Supp. ID	Contract/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
	SUM		down left	229 191	0.000 0.000	X Z	-191 -229	0.000 -1.258
	RESP		down left	0 82	0.000 0.000	X Z	82 0	0.000 0.000
	TOTAL		down left	229 273	0.000 0.000	X Z	273 229	0.000 1.258
A73 A73 1 Guide Stiff	GR		down right	250 0	0.000 0.000	X Z	0 -250	0.000 0.000
	T1		down right	9 517	0.000 0.000	X Z	517 -9	0.000 -1.433
	P1		down right	0 13	0.000 0.000	X Z	13 0	0.000 -0.034
	SUM		down right	259 530	0.000 0.000	X Z	530 -259	0.000 -1.467
	RESP		down left	0 142	0.000 0.000	X Z	142 0	0.000 0.000
	TOTAL		down left	259 672	0.000 0.000	X Z	672 259	0.000 1.467
A74 A74 1 Inclined Stiff	GR		back	178	0.000	X	-178	0.000
	T1		back	101	0.000	X	-101	0.591
	P1		back	2	0.000	X	-2	-1.639
	SUM		back	281	0.000	X	-281	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 72

SUPPORT FORCES

Point/ Supp. ID	Contract/ Type	Load Combination	Dirn	LOCAL Force	Deform	GLOBAL Dirn	Force	Deform
	RESP		back	3	0.000	X	-3	0.553
	TOTAL		back	284	0.000	X	-284	0.000
A76 A76 1 Inclined Stiff	GR		back	106	0.000	X	-106	0.001
	T1		forw	143	0.000	X	143	0.057
	P1		forw	4	0.000	X	4	0.001
	SUM		forw	40	0.000	X	40	0.058
	RESP		back	3	0.000	X	-3	0.097
	TOTAL		back	43	0.000	X	-43	0.738
A76 A76 1 Inclined Stiff	GR		back	106	0.000	X	-106	0.001
	T1		back	143	0.000	X	-143	0.057
	P1		back	4	0.000	X	-4	0.001
	SUM		back	252	0.000	X	-252	0.059

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
		RESP	back	3 0.000	Z	1.009
		TOTAL	back	255 0.000	X Y Z	0.480 0.000 0.097
A78 A78 1	Inclined Stiff :RIGID	GR	back	178 0.000	X Y Z	0.739 0.000 0.000
		T1	forw	101 0.000	X Y Z	-0.591 0.000 1.639
		P1	forw	2 0.000	X Y Z	-0.015 0.000 0.039
		SUM	back	74 0.000	X Y Z	-0.405 0.000 -0.74
		RESP	back	3 0.000	X Y Z	0.553 0.000 0.000
		TOTAL	back	77 0.000	X Y Z	1.158 0.000 1.679
A79 A79 1	Guide Stiff :RIGID	GR	down right	250 0.000 0 0.000	X Y Z	0 0.000 -250 0.000 0.000
		T1	up left	9 0.000 517 0.000	X Y Z	-517 0.000 0.000 1.433
		P1	up left	0 0.000 13 0.000	X Y Z	-13 0.000 0.000 0.034
		SUM	down left	242 0.000 530 0.000	X Y Z	-530 0.000 -242 0.000 1.467

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
		RESP	down left	142 0.000	X Y Z	0 0.000 0.000 0.000
		TOTAL	down left	242 0.000 672 0.000	X Y Z	672 0.000 242 0.000 1.467
A80 A80 1	Guide Stiff :RIGID	GR	down left	231 0.000 0 0.000	X Y Z	0 0.000 -231 0.000 0.000
		T1	down right	2 0.000 186 0.000	X Y Z	186 0.000 -2 0.000 1.228
		P1	down right	0 0.000 5 0.000	X Y Z	5 0.000 0 0.000 0.029
		SUM	down right	234 0.000 191 0.000	X Y Z	191 0.000 -234 0.000 1.258
		RESP	down left	0 0.000 82 0.000	X Y Z	82 0.000 0 0.000 0.000
		TOTAL	down left	234 0.000 275 0.000	X Y Z	273 0.000 0.000 1.258
A81 A81 1	Guide Stiff :RIGID	GR	down right	237 0.000 0 0.000	X Y Z	0 0.000 -237 0.000 0.000
		T1	up left	1 0.000 50 0.000	X Y Z	-50 0.000 0.000 1.023
		P1	up left	0 0.000 1 0.000	X Y Z	-1 0.000 0.000 0.025
		SUM	down left	236 0.000 51 0.000	X Y Z	-51 0.000 -236 0.000 1.048
		RESP	down	0 0.000	X	22 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI AutoPIPE4.60 RESULT PAGE 75

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL	
						Dim	Force
			left	22	0.000	Y	0 0.000
		TOTAL	down	236	0.000	X	73 0.000
			left	73	0.000	Y	236 0.000
						Z	1.048
A82	1	GR	down	235	0.000	X	0 0.000
A82	1		left	0	0.000	Y	-235 0.000
Stiff	:RIGID					Z	0.000
		T1	down	0	0.000	X	13 0.000
			right	13	0.000	Y	0 0.000
						Z	0.819
		P1	down	0	0.000	X	0 0.000
			right	0	0.000	Y	0 0.000
						Z	0.020
		SUM	down	235	0.000	X	14 0.000
			right	14	0.000	Y	-235 0.000
						Z	0.838
		RESP	down	0	0.000	X	6 0.000
			left	6	0.000	Y	0 0.000
						Z	0.000
		TOTAL	down	235	0.000	X	19 0.000
			left	19	0.000	Y	235 0.000
						Z	0.838
A83	1	GR	down	236	0.000	X	0 0.000
A83	1		right	0	0.000	Y	-236 0.000
Stiff	:RIGID					Z	0.000
		T1	up	0	0.000	X	-4 0.000
			left	4	0.000	Y	0 0.000
						Z	0.614
		P1	up	0	0.000	X	0 0.000
			left	0	0.000	Y	0 0.000
						Z	0.015
		SUM	down	235	0.000	X	-4 0.000
			left	4	0.000	Y	-235 0.000
						Z	0.629
		RESP	down	0	0.000	X	2 0.000
			left	2	0.000	Y	0 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI AutoPIPE4.60 RESULT PAGE 76

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	Force	Deform	GLOBAL	
						Dim	Force
		TOTAL	down	235	0.000	X	5 0.000
			left	5	0.000	Y	235 0.000
						Z	0.629
A84	1	GR	down	235	0.000	X	0 0.000
A84	1		left	0	0.000	Y	-235 0.000
Stiff	:RIGID					Z	0.000
		T1	down	0	0.000	X	1 0.000
			right	1	0.000	Y	0 0.000
						Z	0.409
		P1	down	0	0.000	X	0 0.000
			right	0	0.000	Y	0 0.000
						Z	0.010
		SUM	down	235	0.000	X	1 0.000
			right	1	0.000	Y	-235 0.000
						Z	0.419
		RESP	down	0	0.000	X	0 0.000
			left	0	0.000	Y	0 0.000
						Z	0.000
		TOTAL	down	235	0.000	X	1 0.000
			left	1	0.000	Y	235 0.000
						Z	0.419
A85	1	GR	down	235	0.000	X	0 0.000
A85	1		left	0	0.000	Y	-235 0.000
Stiff	:RIGID					Z	0.000
		T1	up	0	0.000	X	0 0.000
			left	0	0.000	Y	0 0.000
						Z	0.205
		P1	down	0	0.000	X	0 0.000
			left	0	0.000	Y	0 0.000
						Z	0.005
		SUM	down	235	0.000	X	0 0.000
			left	0	0.000	Y	-235 0.000
						Z	0.210
		RESP	down	0	0.000	X	0 0.000
			left	0	0.000	Y	0 0.000
						Z	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
A87 A87 Stiff	1 Guide :RIGID	TOTAL	down left	235 0	X Y Z	0 0.000 0.210
		GR	down left	235 0	X Y Z	0.000 -235 0.000
		T1	down left	11 0	X Y Z	-11 0.000 -0.205
		P1	down right	0 0	X Y Z	0 0.000 -0.005
		SUM	down left	235 11	X Y Z	-11 -235 -0.210
		RESP	down left	0 0	X Y Z	0 0.000 0.000
		TOTAL	down left	235 11	X Y Z	11 235 0.210
A88 A88 Stiff	1 Guide :RIGID	GR	down left	235 0	X Y Z	0.000 -235 0.000
		T1	down right	20 0	X Y Z	20 0.000 -0.411
		P1	down left	0 0	X Y Z	0 0.000 -0.010
		SUM	down right	235 20	X Y Z	20 -235 -0.421
		RESP	down left	1 0	X Y Z	1 0.000 0.000
		TOTAL	down	235	X	20 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
A89 A89 Stiff	1 Guide :RIGID	GR	down left	236 0	X Y Z	0.000 -236 0.000
		T1	down left	17 0	X Y Z	-17 0.064 -0.616
		P1	down right	0 0	X Y Z	0 0.000 -0.015
		SUM	down left	236 16	X Y Z	-16 -236 -0.631
		RESP	down left	2 0	X Y Z	2 0.000 0.000
		TOTAL	down left	236 19	X Y Z	19 236 0.644
A90 A90 Stiff	1 Guide :RIGID	GR	down left	235 0	X Y Z	0.000 -235 0.000
		T1	down right	2 0	X Y Z	2 0.086 -0.821
		P1	down left	0 0	X Y Z	0 0.000 -0.020
		SUM	down right	235 2	X Y Z	2 -235 -0.841
		RESP	down left	9 0	X Y Z	9 0.000 0.001
		TOTAL	down left	235 11	X Y	11 0.086 235 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
A91	1	GR	down left	237 0.000	X Y	0.842 -0.000
A91	1	T1	down right	19 0.000	X Y	-237 0.000
A91	1	P1	down right	19 0.000	X Y	19 -1.027
A91	1	SUM	down right	1 0.000	X Y	1 -0.025
A91	1	RESP	down left	237 0.000	X Y	20 -237
A91	1	TOTAL	down left	20 0.000	X Y	20 -1.051
A92	1	GR	down left	34 0.000	X Y	34 0.000
A92	1	T1	down left	237 0.000	X Y	54 237
A92	1	P1	down left	230 0.000	X Y	230 -230
A92	1	SUM	down left	78 0.000	X Y	-78 -1.232
A92	1	RESP	down left	3 0.000	X Y	-3 0.000
A92	1	TOTAL	down left	230 0.000	X Y	-81 -230
A92	1	RESP	down left	127 0.000	X Y	127 0.000
A92	1	TOTAL	down left	230 0.000	X Y	208 230

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
A93	1	GR	down left	255 0.000	X Y	0.000 -255
A93	1	T1	down right	225 0.000	X Y	225 0.000
A93	1	P1	down right	7 0.000	X Y	7 0.000
A93	1	SUM	down right	255 0.000	X Y	232 -255
A93	1	RESP	down left	230 0.000	X Y	230 0.000
A93	1	TOTAL	down left	255 0.000	X Y	462 255
A94	1	GR	back	168 0.000	X Y	0.000 -168
A94	1	T1	back	0.000	X Y	0.000 0.400
A94	1	P1	back	0.000	X Y	0.010 -0.039
A94	1	SUM	back	168 0.000	X Y	0.410 -1.684
A94	1	RESP	back	0.000	X Y	0.818 0.000
A94	1	TOTAL	back	168 0.000	X Y	1.228 168
A96		GR	back	130 0.000	X	1.685 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 81

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
A96 1 Stiff :RIGID	Inclined					
T1	back		0.000		-130	0.000
					Y	0.124
					Z	0.000
P1	back		0.000		-1.381	0.003
					X	-0.003
					Y	-0.033
					Z	0.000
SUM	back	130	0.000		-130	0.127
					X	0.000
					Y	-1.414
					Z	0.000
RESP	back		0.000		0.970	0.000
					X	0.000
					Y	0.097
					Z	0.000
TOTAL	back	130	0.000		1.098	0.000
					X	1.511
					Y	0.000
GR	down left	221	0.000		-221	0.000
					X	0.000
					Y	0.000
					Z	0.000
T1	down right	597	0.000		-597	-0.049
					X	0.000
					Y	-0.133
					Z	0.000
P1	down right	19	0.000		-19	-0.001
					X	0.000
					Y	0.000
					Z	0.000
SUM	down right	221 617	0.000		-221 -617	-0.050
					X	0.000
					Y	-0.133
					Z	0.000
RESP	down left	85	0.000		85	0.971
					X	0.000
					Y	0.000
					Z	0.000
TOTAL	down left	221 702	0.000		221 702	1.021
					X	0.000
					Y	0.000
					Z	0.133
GR	down left	220	0.000		-220	0.000
					X	0.000
					Y	0.000

A98 1
A98 1 Guide

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 82

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
A99 1 Stiff :RIGID	Inclined					
T1	down left		0.000		-0.232	0.000
					Y	0.000
					Z	556
P1	down left		0.000		-0.005	0.000
					X	0.000
					Y	0.000
					Z	18
SUM	down left	220 574	0.000		-220 574	-0.237
					X	0.000
					Y	0.000
					Z	574
RESP	down left		0.000		0.971	0.000
					X	0.000
					Y	0.000
					Z	95
TOTAL	down left	220 669	0.000		1.208	0.000
					X	0.000
					Y	220
					Z	669
GR	back	132	0.000		-132	0.000
					X	0.000
					Y	0.000
					Z	0.000
T1	back		0.000		-0.405	0.000
					X	0.000
					Y	0.000
					Z	1.009
P1	back		0.000		-0.010	0.000
					X	0.000
					Y	0.000
					Z	0.024
SUM	back	132	0.000		-0.415	0.000
					X	0.000
					Y	0.000
					Z	1.033
RESP	back		0.000		0.970	0.000
					X	0.000
					Y	0.000
					Z	0.102
TOTAL	back	132	0.000		1.385	0.000
					X	0.000
					Y	1.135
					Z	132
GR	back	164	0.000		-164	0.000
					X	0.000
					Y	0.000
					Z	0.000

A101 1
A101 1 Guide

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 83

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L	
						Dirn	Force
T1		back		0.000		X	-0.565
						Y	0.000
						Z	1.144
P1		back		0.000		X	-0.014
						Y	0.000
						Z	0.027
SUM		back		164	0.000	X	-0.579
						Y	-164
						Z	1.172
RESP		back		0.000		X	0.810
						Y	0.000
						Z	0.001
TOTAL		back		164	0.000	X	1.388
						Y	0.000
						Z	1.173
GR		down		241	0.000	X	0.000
		left				Y	-241
						Z	0.000
T1		down		244	0.000	X	-0.140
		left				Y	-244
						Z	0.944
P1		down		0.000		X	-8
		left				Y	0.000
						Z	0.023
SUM		down		241	0.000	X	-0.140
		left		252	0.000	Y	-241
						Z	0.967
RESP		down		0.000		X	259
		left				Y	0.000
						Z	0.001
TOTAL		down		241	0.000	X	511
		left		511	0.000	Y	241
						Z	0.967
GR		down		209	0.000	X	0.000
		left				Y	-209
						Z	0.000
T1		down		0.000		X	93
							-0.112

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 84

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L	
						Dirn	Force
			right	93	0.000	Y	0.000
						Z	0.755
P1			down			X	4
			right	4	0.000	Y	0.000
						Z	0.018
SUM			down	209	0.000	X	96
			right	96	0.000	Y	-209
						Z	0.773
RESP			down			X	149
			left	149	0.000	Y	0.000
						Z	0.001
TOTAL			down	209	0.000	X	245
			left	245	0.000	Y	209
						Z	0.774
GR			down			X	0.000
			left	218	0.000	Y	-218
						Z	0.000
T1			down			X	3
			right	3	0.000	Y	-0.084
						Z	0.566
P1			down			X	-1
			left	1	0.000	Y	0.000
						Z	0.014
SUM			down	218	0.000	X	2
			right	2	0.000	Y	-218
						Z	0.580
RESP			down			X	40
			left	40	0.000	Y	0.000
						Z	0.000
TOTAL			down	218	0.000	X	41
			left	41	0.000	Y	218
						Z	0.580
GR			down			X	-216
			left	216	0.000	Y	0.000
						Z	0.000
T1			down			X	-27
			left	27	0.000	Y	0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 85

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dim Force	Deform	GLOBAL Dim Force	Deform
P1		down right	0 0	0.000 0.000	X Y	0 0
SUM		down left	216 26	0.000 0.000	X Y	-26 -216
RESP		down left	11	0.000	X	11
TOTAL		down left	216 37	0.000 0.000	X Y	37 216
GR	A106 1 Guide Stiff :RIGID	down left	217	0.000	X	-217
T1		down right	17	0.000	X	17
P1		down left	0	0.000	X	0
SUM		down right	217 17	0.000 0.000	X Y	17 -217
RESP		down left	3	0.000	X	3
TOTAL		down left	217 20	0.000 0.000	X Y	20 217
GR	A108 1 Guide Stiff :RIGID	down left	214	0.000	X	0
T1		up right	9 1	0.000 0.000	X Y	1 9

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 86

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dim Force	Deform	GLOBAL Dim Force	Deform
P1		up right	0 0	0.000 0.000	X Y	0 0
SUM		down right	204 1	0.000 0.000	X Y	1 -204
RESP		down left	0	0.000	X	0
TOTAL		down left	204 2	0.000 0.000	X Y	2 204
GR	A109 1 Guide Stiff :RIGID	down right	225	0.000	X	0
T1		down left	32 5	0.000 0.000	X Y	-5 -32
P1		down left	1 0	0.000 0.000	X Y	0 -1
SUM		down left	259 5	0.000 0.000	X Y	-5 -259
RESP		down left	0	0.000	X	0
TOTAL		down left	259 7	0.000 0.000	X Y	7 259
GR	A110 1 Guide Stiff :RIGID	down right	150	0.000	X	0
T1		up right	135 64	0.000 0.000	X Y	64 135
P1		up	3	0.000	X	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 87

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		right	0	0.000	Y	3
				-0.014	Z	0.000
	SUM		11	0.000	X	65
		down		0.000	Y	-11
		right	65	0.000	Z	-0.580
	RESP		0	0.000	X	24
		down		0.000	Y	0
		left	24	0.000	Z	0.000
	TOTAL		11	0.000	X	89
		down		0.000	Y	11
		left	89	0.000	Z	0.580
A112.1 Stiff	Guide :RIGID		124	0.000	X	0
		down		0.000	Y	-152
		left	0	0.000	Z	-8
T1		down	163	0.000	X	-108
		left	108	0.000	Y	-163
				0.042	Z	-11
P1		down	4	0.000	X	-1
		left	1	0.000	Y	-4
				0.001	Z	0
				-0.015		
SUM		down	291	0.000	X	-109
		left	109	0.000	Y	-290
				0.043	Z	-19
RESP		down	0	0.000	X	54
		left	54	0.000	Y	0
				0.000	Z	0
TOTAL		down	291	0.000	X	164
		left	164	0.000	Y	291
				0.043	Z	19
GR		down	198	0.000	X	0
		right	0	0.000	Y	-198
				0.000	Z	-13
T1		up	58	0.000	X	133
		right	133	0.000	Y	58
				0.053	Z	4
P1		up	1	0.000	X	3
		right	3	0.000	Y	1
				0.001	Z	0.001

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 88

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		SUM	down	138	0.000	X
			right	136	0.000	Y
				-0.823	Z	-9
	RESP		down	1	0.000	X
		left	138	0.000	Y	1
				0.000	Z	0
	TOTAL		down	139	0.000	X
		left	274	0.064	Y	274
				0.054	Z	9
	GR		down	213	0.000	X
		left	0	0.000	Y	-212
				0.000	Z	-14
T1		down	42	0.000	X	-303
		left	303	0.000	Y	-42
				0.064	Z	-3
P1		down	1	0.000	X	-8
		left	8	0.000	Y	-10
				0.000	Z	-0.023
SUM		down	256	0.000	X	-311
		left	311	0.000	Y	-255
				0.065	Z	-17
RESP		down	3	0.000	X	219
		left	219	0.000	Y	3
				0.000	Z	0
TOTAL		down	259	0.000	X	530
		left	530	0.000	Y	258
				0.065	Z	17
	GR		back	116	0.000	X
				0.000	Y	0
				0.000	Z	-116
T1		forw	27	0.000	X	-0.183
				0.000	Y	27
				-1.148	Z	-1
P1		forw	1	0.000	X	-0.004
				0.000	Y	1
				0.000	Z	-0.028

HYDRO-AB PROJECT U-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 89

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
SUM		back		89	0.000	X Y Z	-0.186 0.000 -1.175
RESP		back		9	0.000	X Y Z	0.537 0.000 0.000
TOTAL		back		98	0.000	X Y Z	0.723 0.000 1.175
GR		back		189	0.000	X Y Z	0.001 0.000 -189
T1		back		3	0.000	X Y Z	0.146 0.000 -0.806
P1		back		0	0.000	X Y Z	0.004 0.000 -0.020
SUM		back		192	0.000	X Y Z	0.151 0.000 -192
RESP		back		6	0.000	X Y Z	0.712 0.000 0.142
TOTAL		back		198	0.000	X Y Z	0.864 0.000 0.967
GR		back		165	0.000	X Y Z	0.001 0.000 -165
T1		forw		23	0.000	X Y Z	0.337 0.000 1.197
P1		forw		1	0.000	X Y Z	0.009 0.000 0.029
SUM		back		141	0.000	X	0.346

A115
A115.1
Inclined
Stiff

A116
A116.1
Inclined
Stiff

HYDRO-AB PROJECT U-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 90

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dim	LOCAL Force	Deform	GLOBAL Force	Deform
RESP		back		3	0.000	X Y Z	0.712 0.000 0.126
TOTAL		back		144	0.000	X Y Z	1.058 0.000 1.355
GR		back		154	0.000	X Y Z	0.001 0.000 -154
T1		back		11	0.000	X Y Z	0.406 0.000 -11
P1		back		0	0.000	X Y Z	0.015 0.000 0.036
SUM		back		165	0.000	X Y Z	0.622 0.000 1.526
RESP		back		1	0.000	X Y Z	0.564 0.000 0.000
TOTAL		back		167	0.000	X Y Z	1.186 0.000 1.526
GR		down right		265 0	0.000 0.000	X Y Z	0.000 0.000 0.000
T1		up right		1 320	0.000 0.000	X Y Z	0.078 0.000 1.278
P1		up right		0 8	0.000 0.000	X Y Z	0.000 0.000 0.031
SUM		down right		264 328	0.000 0.000	X Y	0.078 -264 0.000

A118
A118.1
Inclined
Stiff

A119
A119.1
Gurde
Stiff

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 91

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL	
						Dirn	Force
		RESP	down left	0 122	0.000 0.000	Z	1.309
		TOTAL	down left	264 450	0.000 0.000	X Y	122 0
		GR	down left	239 0	0.000 0.000	X Y	450 264
A120 A120.1 Stiff	Guide :RIGID		down left	0 138	0.000 0.000	X Y	0 1.309
		T1	down left	0 138	0.000 0.000	X Y	0 1.309
		P1	down left	0 3	0.000 0.000	X Y	-138 0
		SUM	down left	239 142	0.000 0.000	X Y	-3 0
		RESP	down left	0 74	0.000 0.000	X Y	0.065 0.000
		TOTAL	down left	239 215	0.000 0.000	X Y	0.065 0.026
		GR	down right	246 0	0.000 0.000	X Y	-142 -239
A121 A121.1 Stiff	Guide :RIGID		up right	0 51	0.000 0.000	X Y	0.065 1.091
		T1	up right	0 51	0.000 0.000	X Y	0.065 1.091
		P1	up right	0 1	0.000 0.000	X Y	0.000 0.000
		SUM	down right	246 52	0.000 0.000	X Y	0.000 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 92

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	LOCAL		GLOBAL	
						Dirn	Force	Dirn	Force
		RESP	down left	0 20	0.000 0.000				
		TOTAL	down left	246 72	0.000 0.000	X Y	20 0		
		GR	down left	246 0	0.000 0.000	X Y	0 0		
A122 A122.1 Stiff	Guide :RIGID		down left	0 18	0.000 0.000	X Y	-244 0		
		T1	down left	0 18	0.000 0.000	X Y	-18 0		
		P1	down left	0 0	0.000 0.000	X Y	0 0		
		SUM	down left	244 19	0.000 0.000	X Y	-19 -244		
		RESP	down left	0 5	0.000 0.000	X Y	5 0		
		TOTAL	down left	244 24	0.000 0.000	X Y	24 244		
		GR	down right	244 0	0.000 0.000	X Y	0 -244		
A123 A123.1 Stiff	Guide :RIGID		up right	0 5	0.000 0.000	X Y	5 0		
		T1	up right	0 5	0.000 0.000	X Y	0 0		
		P1	up right	0 0	0.000 0.000	X Y	0 0		
		SUM	down right	244 5	0.000 0.000	X Y	-244 5		
		RESP	down	0	0.000	X	1		

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe#4.60 RESULT PAGE 93

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		left	1	0.000	Y	0 0.000
		down	244	0.000	X	6 0.000
		left	6	0.000	Y	244 0.000
					Z	0.436
		TOTAL				
A124 A124.1 Stiff	Guide :RIGID	GR	244	0.000	X	0 0.000
		down	0	0.000	Y	-244 0.000
		left	0	0.000	Z	0.000
		T1	down	0 0.000	X	-1 0.000
		left	1	0.000	Y	0 0.000
					Z	0.213
		P1	down	0 0.000	X	0 0.000
		left	0	0.000	Y	0.005
					Z	0.005
		SUM	244	0.000	X	-1 0.000
		down	1	0.000	Y	-244 0.000
		left	1	0.000	Z	0.218
		RESP	down	0 0.000	X	0 0.000
		left	0	0.000	Y	0 0.000
					Z	0.000
		TOTAL	244	0.000	X	2 0.000
		down	2	0.000	Y	244 0.000
		left			Z	0.218
A126 A126.1 Stiff	Guide :RIGID	GR	244	0.000	X	0 0.000
		down	0	0.000	Y	-244 0.000
		left	0	0.000	Z	0.000
		T1	up	0 0.000	X	0 0.000
		left	0	0.000	Y	0 0.000
					Z	-0.213
		P1	up	0 0.000	X	0 0.000
		left	0	0.000	Y	0 0.000
					Z	-0.005
		SUM	244	0.000	X	-1 0.000
		down	1	0.000	Y	-244 0.000
		left			Z	-0.218
		RESP	down	0 0.000	X	0 0.000
		left	0	0.000	Y	0 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe#4.60 RESULT PAGE 94

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL Dirn Force	Deform	GLOBAL Dirn Force	Deform
		TOTAL	down	244 0.000	X	1 0.000
			left	1	Y	244 0.000
					Z	0.218
		GR	down	244 0.000	X	0 0.000
		right	0	0.000	Y	-244 0.000
					Z	0.000
		T1	down	0 0.000	X	2 0.000
		right	2	0.000	Y	0 0.000
					Z	-0.426
		P1	down	0 0.000	X	0 0.000
		right	0	0.000	Y	0 0.000
					Z	-0.010
		SUM	down	244 0.000	X	2 0.000
		right	2	0.000	Y	-244 0.000
					Z	-0.436
		RESP	down	0 0.000	X	2 0.000
		left	2	0.000	Y	0 0.000
					Z	0.000
		TOTAL	down	244 0.000	X	3 0.000
		left	3	0.000	Y	244 0.000
					Z	0.436
		GR	down	244 0.000	X	0 0.000
		left	0	0.000	Y	-244 0.000
					Z	0.000
		T1	up	0 0.000	X	-6 0.000
		left	6	0.000	Y	0 0.000
					Z	-0.638
		P1	up	0 0.000	X	0 0.000
		left	0	0.000	Y	0 0.000
					Z	-0.015
		SUM	down	244 0.000	X	-7 0.000
		left	7	0.000	Y	-244 0.000
					Z	-0.654
		RESP	down	0 0.000	X	6 0.000
		left	6	0.000	Y	0 0.000
					Z	0.000

16/14PRINT

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
		TOTAL	down left	244 13	0.000 0.000	X Z	244 0	0.000 0.654
A129 A129 1 Stiff :RIGID	GR	GR	down right	245 0	0.000 0.000	X Z	0 -245	0.000 0.000
	T1	T1	down right	0 24	0.000 0.000	X Z	24 0	0.000 -0.851
	P1	P1	down right	0 1	0.000 0.000	X Z	1 0	0.000 -0.020
	SUM	SUM	down right	246 25	0.000 0.000	X Z	25 -246	0.000 -0.872
	RESP	RESP	down left	0 24	0.000 0.000	X Z	24 0	0.000 0.000
	TOTAL	TOTAL	down left	246 49	0.000 0.000	X Z	49 246	0.000 0.872
A130 A130 1 Stiff :RIGID	GR	GR	down left	240 0	0.000 0.000	X Z	0 -240	0.000 0.000
	T1	T1	up left	2 108	0.000 0.000	X Z	-108 2	0.000 -1.064
	P1	P1	up left	0 3	0.000 0.000	X Z	-3 0	0.000 -0.026
	SUM	SUM	down left	238 111	0.000 0.000	X Z	-111 -238	0.000 -1.090
	RESP	RESP	down left	0 89	0.000 0.000	X Z	89 0	0.000 0.000
	TOTAL	TOTAL	down	238	0.000	X	200	0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	GLOBAL Dirn	Force	Deform
		TOTAL	left	200	0.000	Z	238	1.090
A131 A131 1 Stiff :RIGID	GR	GR	down right	260 0	0.000 0.000	X Z	0 -260	0.000 0.000
	T1	T1	down right	349 7	0.000 0.000	X Z	349 -7	0.068 -1.277
	P1	P1	down right	0 9	0.000 0.000	X Z	9 0	0.000 -0.031
	SUM	SUM	down right	267 359	0.000 0.000	X Z	359 -267	0.068 -1.307
	RESP	RESP	down left	0 153	0.000 0.000	X Z	153 0	0.000 0.000
	TOTAL	TOTAL	down left	267 512	0.000 0.000	X Z	512 267	0.068 1.307
A132 A132 1 Stiff :RIGID	GR	GR	back	171	0.000	X	-171	0.000
	T1	T1	back	70	0.000	X	-70	0.502
	P1	P1	back	2	0.000	X	-2	-0.038
	SUM	SUM	back	242	0.000	X	-242	0.514
	RESP	RESP	back	3	0.000	X	3	-1.524
	TOTAL	TOTAL	back	245	0.000	X	245	0.662

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 97

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirm Force	Deform	GLOBAL Dirm Force	Deform
A134 A134 1 Inclined Stiff :RIGID		GR	back	131 0.000	X Y Z	-1.524 -0.001 -131 0.000 0.001
		T1	forw	89 0.000	X Y Z	0.072 0.000 -0.998
		P1	forw	2 0.000	X Y Z	0.002 0.000 -0.024
		SUM	back	39 0.000	X Y Z	-0.073 0.000 -1.021
		RESP	back	3 0.000	X Y Z	0.817 0.000 0.123
		TOTAL	back	43 0.000	X Y Z	0.889 0.000 1.144
		GR	back	130 0.000	X Y Z	-0.001 0.000 -130 0.000 0.001
		T1	back	89 0.000	X Y Z	-0.074 0.000 -89 0.000 0.998
		P1	back	2 0.000	X Y Z	-0.002 0.000 0.024
		SUM	back	221 0.000	X Y Z	-0.076 0.000 -221 0.000 1.023
		RESP	back	3 0.000	X Y Z	0.817 0.000 0.123
		TOTAL	back	225 0.000	X Y Z	0.893 0.000 1.146

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 98

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirm Force	Deform	GLOBAL Dirm Force	Deform
A136 A136 1 Inclined Stiff :RIGID		GR	back	171 0.000	X Y Z	0.000 0.000 -171 0.000 0.000
		T1	forw	70 0.000	X Y Z	-0.504 0.000 70 0.000 1.488
		P1	forw	2 0.000	X Y Z	-0.012 0.000 2 0.000 0.036
		SUM	back	99 0.000	X Y Z	-0.515 0.000 -99 0.000 1.524
		RESP	back	3 0.000	X Y Z	0.662 0.000 3 0.000 0.000
		TOTAL	back	103 0.000	X Y Z	1.177 0.000 1.524
		GR	down right	260 0.000 0 0.000	X Y Z	0 0.000 -260 0.000 0.000
		T1	up left	7 0.000 349 0.000	X Y Z	-349 -0.068 7 0.000 1.277
		P1	up left	0 0.000 9 0.000	X Y Z	-9 0.000 0 0.000 0.031
		SUM	down left	253 0.000 359 0.000	X Y Z	-359 -0.068 -253 0.000 1.307
		RESP	down left	0 0.000 153 0.000	X Y Z	153 0.000 0 0.000 0.000
		TOTAL	down left	254 0.000 512 0.000	X Y Z	512 0.068 254 0.000 1.307
		GR	down	240 0.000	X	0 0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI AutoPIPE4.60 RESULT PAGE 99

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Force	Dirn	Force
A138.1 Stiff :RIGID	Guide		left	0 0.000	Z	-240 0.000
T1			down	2 0.000	X	108 0.000
			right	108 0.000	Y	-2 0.000
P1			down	0 0.000	X	3 0.000
			right	3 0.000	Y	0 0.000
SUM			down	242 0.000	X	112 0.000
			right	112 0.000	Y	-242 0.000
RESP			down	0 0.000	X	89 0.000
			left	89 0.000	Y	0 0.000
TOTAL			down	242 0.000	X	201 0.000
			left	201 0.000	Y	242 0.000
GR			down	245 0.000	X	0 0.000
			right	0 0.000	Y	-245 0.000
T1			up	0 0.000	X	-24 0.000
			left	24 0.000	Y	0 0.000
P1			up	0 0.000	X	-1 0.000
			left	1 0.000	Y	0 0.000
SUM			down	245 0.000	X	-25 0.000
			left	25 0.000	Y	-245 0.000
RESP			down	0 0.000	X	24 0.000
			left	24 0.000	Y	0 0.000
TOTAL			down	245 0.000	X	49 0.000
			left	49 0.000	Y	245 0.000
GR			down	244 0.000	X	0 0.000
			left	0 0.000	Y	-244 0.000

A140
A140.1 Guide

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI AutoPIPE4.60 RESULT PAGE 100

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Force	Dirn	Force
A141.1 Stiff :RIGID	Guide		down	0 0.000	Z	0 0.000
T1			right	6 0.000	X	6 0.000
					Y	0 0.000
P1			down	0 0.000	Z	0 0.000
			right	0 0.000	Y	0 0.000
SUM			down	244 0.000	X	7 0.000
			right	7 0.000	Y	-244 0.000
RESP			down	0 0.000	Z	0.000 0.654
			left	6 0.000	X	6 0.000
TOTAL			down	244 0.000	X	13 0.000
			left	13 0.000	Y	244 0.000
GR			down	244 0.000	Z	0 0.000
			right	0 0.000	X	-244 0.000
T1			up	0 0.000	X	-2 0.000
			left	2 0.000	Y	0 0.000
P1			up	0 0.000	Z	0.426 0.000
			left	0 0.000	X	0 0.000
SUM			down	244 0.000	X	-2 0.000
			left	2 0.000	Y	-244 0.000
RESP			down	0 0.000	Z	0.000 0.436
			left	2 0.000	X	2 0.000
TOTAL			down	244 0.000	X	3 0.000
			left	3 0.000	Y	244 0.000
GR			down	244 0.000	Z	0 0.000
			left	0 0.000	X	-244 0.000

A142
A142.1 Guide

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 101

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
T1			down	0	0.000	X	0	0.000
			right	0	0.000	Z	0	0.213
P1			down	0	0.000	X	0	0.000
			right	0	0.000	Z	0	0.005
SUM			down	244	0.000	X	1	0.000
			right	1	0.000	Z	-244	0.218
RESP			down	0	0.000	X	0	0.000
			left	0	0.000	Z	0	0.000
TOTAL			down	244	0.000	X	1	0.000
			left	1	0.000	Z	244	0.218
GR			down	244	0.000	X	-244	0.000
			left	0	0.000	Z	0	0.000
T1			down	13	0.000	X	-13	0.000
			left	0	0.000	Z	-0.213	0.000
P1			down	0	0.000	X	0	0.000
			left	0	0.000	Z	0	-0.005
SUM			down	244	0.000	X	-13	0.000
			left	13	0.000	Z	-244	-0.218
RESP			down	0	0.000	X	0	0.000
			left	0	0.000	Z	0	0.000
TOTAL			down	244	0.000	X	14	0.000
			left	14	0.000	Z	244	0.218
GR			down	244	0.000	X	-244	0.000
			left	0	0.000	Z	0	0.000
T1			down	0	0.000	X	25	0.000
			left	0	0.000	Z	0	0.000

A144
A144.1 Guide
Stiff :RIGID

A145
A145.1 Guide
Stiff :RIGID

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE+4.60 RESULT PAGE 102

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL			GLOBAL		
			Dirn	Force	Deform	Dirn	Force	Deform
P1			right	25	0.000	Y	0	-0.426
			down	0	0.000	X	0	0.000
SUM			down	244	0.000	X	-244	0.000
			right	25	0.000	Z	-0.436	-0.010
RESP			down	1	0.000	X	1	0.000
			left	0	0.000	Z	0	0.000
TOTAL			down	244	0.000	X	26	0.000
			left	26	0.000	Z	244	0.437
GR			down	244	0.000	X	-244	0.000
			left	0	0.000	Z	0	0.000
T1			down	30	0.000	X	-30	0.080
			left	0	0.000	Z	0	-0.639
P1			down	0	0.000	X	0	0.000
			left	0	0.000	Z	0	-0.015
SUM			down	244	0.000	X	-30	0.080
			left	30	0.000	Z	-244	-0.655
RESP			down	5	0.000	X	5	0.000
			left	0	0.000	Z	0	0.000
TOTAL			down	244	0.000	X	35	0.080
			left	35	0.000	Z	244	0.000
GR			down	246	0.000	X	-246	0.000
			left	0	0.000	Z	0	0.000
T1			down	44	0.000	X	44	0.107
			right	0	0.000	Z	0	0.000

A146
A146.1 Guide
Stiff :RIGID

A147
A147.1 Guide
Stiff :RIGID

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
P1		down right	1	0.000 0.000	X Y	1 Z
SUM		down right	266 45	0.000 0.000	X Y	45 -246
RESP		down left	18	0.000 0.000	X Y	18 Z
TOTAL		down left	266 63	0.000 0.000	X Y	63 246
GR	A148 1 Guide Stiff	down left	239	0.000 0.000	X Y	-239 Z
T1		down left	133	0.000 0.000	X Y	-133 Z
P1		down left	4	0.000 0.000	X Y	-4 Z
SUM		down left	239 137	0.000 0.000	X Y	-137 -239
RESP		down left	68	0.000 0.000	X Y	68 Z
TOTAL		down left	239 205	0.000 0.000	X Y	205 239
GR	A149 1 Guide Stiff	down left	266	0.000 0.000	X Y	-266 Z
T1		down right	299	0.000 0.000	X Y	299 Z

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Local Dirn Force	Deform	GLOBAL Dirn Force	Deform
P1		down right	9	0.000 0.000	X Y	9 Z
SUM		down right	266 307	0.000 0.000	X Y	307 -266
RESP		down left	124	0.000 0.000	X Y	124 Z
TOTAL		down left	266 431	0.000 0.000	X Y	431 266
GR	A150 1 Inclined Stiff	back	161	0.000 0.000	X Y	-161 Z
T1		back		0.000 0.000	X Y	
P1		back		0.000 0.000	X Y	
SUM		back	161	0.000 0.000	X Y	-161 Z
RESP		back		0.000 0.000	X Y	
TOTAL		back	161	0.000 0.000	X Y	161 Z
GR	A152 1 Inclined Stiff	back	151	0.000 0.000	X Y	-151 Z
T1		back		0.000 0.000	X Y	
P1		back		0.000 0.000	X Y	

HYDRO-AB PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe-4.60 RESULT PAGE 105

SUPPORT FORCES

Point/ Supp. ID		Connect/ Type	Load Combination	Dirn	LOCAL Force		Deform	GLOBAL Dirn Force		Deform		
A153 A153 1 Guide :RIGID	SUM		back		151	0.000	X	Y	-151	0.799 0.000 -1.408		
											Z	0.000
	RESP		back		0.000	X	Y	0.569 0.000 0.063				
									Z	0.000		
	TOTAL		back		151	0.000	X	Y	151	1.368 0.000 1.472		
											Z	0.000
	GR		down left		248	0.000 0.000	X	Y	-248	0.000 0.000 0.000		
Z											0.000	
T1		down right		413	0.000 0.000	X	Y	-413	0.580 0.000 -0.133			
										Z	0.000	
P1		down right		12	0.000 0.000	X	Y	-12	0.014 0.000 0.000			
										Z	0.000	
SUM		down right		248 425	0.000 0.000	X	Y	-248 -425	0.594 0.000 -0.133			
										Z	0.000	
RESP		down left		63	0.000 0.000	X	Y	63	0.569 0.000 0.000			
										Z	0.000	
TOTAL		down left		248 488	0.000 0.000	X	Y	248 488	1.163 0.000 0.133			
										Z	0.000	
GR		down left		241	0.000 0.000	X	Y	-241	0.000 0.000 0.000			
										Z	0.000	
T1		down left		273	0.000 0.000	X	Y	273	0.380 0.000 0.000			
										Z	0.000	
P1		down left		8	0.000 0.000	X	Y	0.009	0.009 0.000			
										Z	0.000	

HYDRO-AB PROJECT H-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe-4.60 RESULT PAGE 106

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	LOCAL		GLOBAL		
				Force	Deform	Dirn Force	Deform	
A156 A156.1 Inclined Stiff	GR	SUM	down left	241 281	0.000 0.000	X Y Z	0.389 -241 0.000	
		RESP	down left	205	0.000	X Y Z	0.569 0.000 0.000	
		TOTAL	down left	241 486	0.000 0.000	X Y Z	0.958 241 486	
		GR	back	212	0.000	X Y Z	0.000 0.000 -212	
		T1	back		0.000	X Y Z	0.166 0.000 0.194	
		P1	back		0.000	X Y Z	0.004 0.000 0.004	
	SUM	SUM	back	212	0.000	X Y Z	0.170 0.000 0.199	
		RESP	back		0.000	X Y Z	0.569 0.000 0.583	
		TOTAL	back	212	0.000	X Y Z	0.738 0.000 0.782	
		A159 A159.1 Inclined Stiff	GR	back	120	0.000	X Y Z	0.000 0.000 -120
			T1	back		0.000	X Y Z	0.320 0.000 0.035
			P1	back		0.000	X Y Z	0.008 0.000 0.000

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dirn	Force	Deform
		SUM	back	120	0.000	X	-120	0.227
						Y	0.000	0.035
						Z		
		RESP	back		0.000	X		0.227
						Y		0.000
						Z		0.595
		TOTAL	back	120	0.000	X	120	0.555
						Y		0.000
						Z		0.631
A161 A161 1 Inclined stiff		GR	back	129	0.000	X		0.000
						Y	-129	0.000
						Z		0.000
		T1	back		0.000	X		0.369
						Y		0.000
						Z		-0.089
		P1	back		0.000	X		0.009
						Y		0.000
						Z		-0.003
		SUM	back	129	0.000	X	-129	0.378
						Y		0.000
						Z		-0.093
		RESP	back		0.000	X		0.001
						Y		0.000
						Z		0.411
		TOTAL	back	129	0.000	X	129	0.378
						Y		0.000
						Z		0.504
A162 A162 1 Guide stiff		GR	down left	221	0.000	X	-221	0.000
						Y		0.000
						Z		0.000
		T1	down right		0.000	X		0.216
						Y		0.000
						Z		0.000
		P1	down right	4	0.000	X		0.005
						Y		0.000
						Z		-4
		SUM	down	221	0.000	X		0.221

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	Dirn	Force	Deform	G L O B A L		
						Dirn	Force	Deform
		RESP	down left		0.000	right	133	0.000
						down		0.000
						left	216	0.000
		TOTAL	down left	221 349	0.000 0.000	down left	221 349	0.221 0.000
A164 A164 1 Guide stiff		GR	down left	199	0.000	down left	199	0.000
						right		0.000
		T1	down right		0.000	down right	1019	0.000
						down		0.000
						right	38	0.000
		P1	down right		0.000	down right	199 1057	0.000 0.000
						down		0.220
						left		0.000
		SUM	down left	199 1057	0.000 0.000	down left	199 1057	0.220 0.072
		RESP	down left		0.000	down left	0	0.000
						down		0.220
						right		0.000
		TOTAL	down left	199 1057	0.000 0.000	down left	199 1057	0.220 0.072
A166 A166 1 Inclined stiff		GR	back	79	0.000	back	79	0.000
						back		0.000
		T1	back		0.000	back		-0.236
						back		0.000
		P1	back		0.000	back		-0.095
						back		-0.007
						back		0.000
		SUM	back	79	0.000	back	79	-0.243
						back		0.000

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 109

SUPPORT FORCES

Point/ Supp. ID	Connect/ Type	Load Combination	LOCAL		GLOBAL	
			Dirn	Force	Deform	Dirn
RESP		back		0.000	0.000	Z
TOTAL		back		79	0.000	Z

-0.097

79

0.000

0.000

0.000

0.243

0.000

0.097

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 110

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A00	Anchor	372	0	0	0	-294	0	36
A01	Guide	647	45	240	0	452	0	36
A02	Inclined	0	-69	0	0	69	0	0
A04	Inclined	0	-132	0	0	132	0	0
A05	Guide	0	-208	0	0	208	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 111

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A06	Guide							
	GR	0	-191	0	191	0	0	0
	T1	89	0	89	125	0	0	0
	P1	4	0	4	5	0	0	0
	SUM	92	-191	92	231	0	0	0
	RESP	50	0	50	71	0	0	0
A07	TOTAL	142	191	142	278	0	0	0
	Guide							
	GR	0	-195	0	195	0	0	0
	T1	-129	0	-129	182	0	0	0
	P1	-6	0	-6	9	0	0	0
	SUM	-135	-195	-135	273	0	0	0
A08	RESP	3	0	3	5	0	0	0
	TOTAL	139	195	139	278	0	0	0
	Guide							
	GR	0	-196	0	196	0	0	0
	T1	331	0	331	469	0	0	0
	P1	13	0	13	18	0	0	0
A09	SUM	344	-196	344	524	0	0	0
	RESP	43	0	43	60	0	0	0
	TOTAL	372	196	372	582	0	0	0
	Inclined							
	GR	0	-146	0	146	0	0	0
	T1	0	0	0	0	0	0	0
A11	P1	0	0	0	0	0	0	0
	SUM	0	-146	0	146	0	0	0
	RESP	0	0	0	0	0	0	0
	TOTAL	0	146	0	146	0	0	0
	Inclined							
	GR	0	-108	0	108	0	0	0
A12	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-108	0	108	0	0	0
	RESP	0	0	0	0	0	0	0
	TOTAL	0	108	0	108	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 112

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A12	Guide							
	GR	0	-195	0	195	0	0	0
	T1	-387	0	387	547	0	0	0
	P1	-13	0	13	18	0	0	0
	SUM	-399	-195	399	597	0	0	0
	RESP	68	0	68	97	0	0	0
A13	TOTAL	467	195	467	689	0	0	0
	Guide							
	GR	0	-216	0	216	0	0	0
	T1	145	0	-145	205	0	0	0
	P1	5	0	-5	7	0	0	0
	SUM	150	-216	-150	303	0	0	0
A14	RESP	32	0	32	45	0	0	0
	TOTAL	182	216	182	336	0	0	0
	Guide							
	GR	0	-211	0	211	0	0	0
	T1	-11	0	11	16	0	0	0
	P1	-1	0	1	2	0	0	0
A15	SUM	-12	-211	12	211	0	0	0
	RESP	9	0	9	12	0	0	0
	TOTAL	21	211	21	213	0	0	0
	Guide							
	GR	0	-212	0	212	0	0	0
	T1	-23	0	23	33	0	0	0
A16	P1	0	0	0	0	0	0	0
	SUM	-23	-212	23	215	0	0	0
	RESP	2	0	2	3	0	0	0
	TOTAL	25	212	25	215	0	0	0
	Guide							
	GR	0	-212	0	212	0	0	0
A17	T1	16	0	-16	23	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	16	-212	-16	213	0	0	0
	RESP	17	0	17	213	0	0	0
	TOTAL	17	212	17	213	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 113

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A17	Anchor								
	GR	32	-212	0	212	0	0	0	1
	T1	335	0	347	482	0	-11	0	11
	P1	6	0	6	9	0	0	0	0
	SUM	373	-212	353	577	0	-10	0	10
	TOTAL	142	0	142	201	1	5	1	5
A18	Guide								
	GR	0	-212	0	212	0	0	0	0
	T1	8	0	-8	11	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	9	-212	-9	213	0	0	0	0
	TOTAL	12	212	12	213	0	0	0	0
A19	Guide								
	GR	-29	-210	1	210	0	0	0	0
	T1	-29	0	29	41	0	0	0	0
	P1	-1	0	1	1	0	0	0	0
	SUM	-31	-211	31	215	0	0	0	0
	TOTAL	43	211	43	220	0	0	0	0
A20	Guide								
	GR	5	-218	-5	219	0	0	0	0
	T1	106	2	-106	151	0	0	0	0
	P1	-3	0	-3	4	0	0	0	0
	SUM	114	-217	-114	271	0	0	0	0
	TOTAL	160	218	160	335	0	0	0	0
A21	Guide								
	GR	-19	-182	19	184	0	0	0	0
	T1	-354	-8	354	501	0	0	0	0
	P1	-9	0	9	12	0	0	0	0
	SUM	-362	-191	362	575	0	0	0	0
	TOTAL	500	198	500	754	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 114

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z
		X	Y	Z	X	Y	Z		
A22	Inclined								
	GR	0	-143	0	143	0	0	0	0
	T1	0	29	0	29	0	0	0	0
	P1	0	1	0	1	0	0	0	0
	SUM	0	-113	0	113	0	0	0	0
	TOTAL	0	15	0	15	0	0	0	0
A25	Inclined								
	GR	0	-125	0	125	0	0	0	0
	T1	0	-149	0	149	0	0	0	0
	P1	0	-4	0	4	0	0	0	0
	SUM	0	-277	0	277	0	0	0	0
	TOTAL	0	287	0	287	0	0	0	0
A27	Inclined								
	GR	0	-113	0	113	0	0	0	0
	T1	0	51	0	51	0	0	0	0
	P1	0	1	0	1	0	0	0	0
	SUM	0	-61	0	61	0	0	0	0
	TOTAL	0	80	0	80	0	0	0	0
A28	Guide								
	GR	2	-189	-34	192	0	0	0	0
	T1	356	-31	-361	508	0	0	0	0
	P1	9	-1	-9	13	0	0	0	0
	SUM	367	-221	-404	589	0	0	0	0
	TOTAL	485	242	520	752	0	0	0	0
A29	Guide								
	GR	-22	-238	-18	240	0	0	0	0
	T1	-176	38	183	257	0	0	0	0
	P1	-4	1	5	6	0	0	0	0
	SUM	-202	-199	169	330	0	0	0	0
	TOTAL	270	216	236	419	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 115

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A30	Guide							
	GR	-27	-184	-4	186	0	0	0
	T1	394	-76	-407	572	0	0	0
	P1	-10	-2	-10	14	0	0	0
	SUM	377	-261	-421	622	0	0	0
	TOTAL	489	286	531	776	0	0	0
A31	Inclined							
	GR	0	-125	0	125	0	0	0
	T1	0	76	0	76	0	0	0
	P1	0	2	0	2	0	0	0
	SUM	0	-48	0	48	0	0	0
	TOTAL	0	75	0	75	0	0	0
A33	Inclined							
	GR	0	-83	0	83	0	0	0
	T1	0	-7	0	7	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-90	0	90	0	0	0
	TOTAL	0	119	0	119	0	0	0
A34	Inclined							
	GR	0	-72	0	72	0	0	0
	T1	0	93	0	93	0	0	0
	P1	0	2	0	2	0	0	0
	SUM	0	32	0	32	0	0	0
	TOTAL	0	55	0	55	0	0	0
A36	Inclined							
	GR	0	-142	0	142	0	0	0
	T1	0	-17	0	17	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-159	0	159	0	0	0
	TOTAL	0	164	0	164	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE4.60 RESULT PAGE 116

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A37	Guide							
	GR	14	-199	-14	200	0	0	0
	T1	-425	0	425	601	0	0	0
	P1	-11	0	11	15	0	0	0
	SUM	-422	-199	422	629	0	0	0
	TOTAL	545	199	545	796	0	0	0
A38	Guide							
	GR	-5	-215	5	215	0	0	0
	T1	154	0	-154	217	0	0	0
	P1	4	0	-4	5	0	0	0
	SUM	153	-215	-153	305	0	0	0
	TOTAL	214	216	214	372	0	0	0
A39	Anchor							
	GR	20	-248	18	250	63	7	278
	T1	306	0	505	590	-1	130	-1
	P1	9	0	15	18	0	8	0
	SUM	335	-248	538	681	62	144	277
	TOTAL	426	259	620	795	88	230	362
A40	Guide							
	GR	0	-62	0	62	0	0	0
	T1	292	0	-292	413	0	0	0
	P1	9	0	-9	13	0	0	0
	SUM	301	-62	-301	431	0	0	0
	TOTAL	301	104	301	439	0	0	0
A41	Guide							
	GR	0	-464	0	464	0	0	0
	T1	-660	0	660	934	0	0	0
	P1	-19	0	19	26	0	0	0
	SUM	-679	-464	679	1068	0	0	0
	TOTAL	679	532	679	1097	0	0	0

HYDRO-AB PROJECT U-320 ES-320-H3, W4, W5, W6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 117

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A45	Guide									
	GR	0	-450	0	450	0	0	0	0	0
	T1	-807	0	0	807	0	0	0	0	0
	SUM	-807	0	0	807	0	0	0	0	0
	RESP	-828	-450	0	945	0	0	0	0	0
	TOTAL	828	507	0	971	0	0	0	0	0
A46	Guide									
	GR	0	-129	0	129	0	0	0	0	0
	T1	336	0	0	336	0	0	0	0	0
	SUM	346	-129	0	369	0	0	0	0	0
	RESP	31	0	0	31	0	0	0	0	0
	TOTAL	346	160	0	381	0	0	0	0	0
A47	Guide									
	GR	0	-262	0	262	0	0	0	0	0
	T1	-73	0	0	73	0	0	0	0	0
	SUM	-76	-262	0	273	0	0	0	0	0
	RESP	0	8	0	8	0	0	0	0	0
	TOTAL	76	271	0	281	0	0	0	0	0
A48	Guide									
	GR	0	-214	0	214	0	0	0	0	0
	T1	1	0	0	1	0	0	0	0	0
	SUM	2	-214	0	214	0	0	0	0	0
	RESP	0	3	0	3	0	0	0	0	0
	TOTAL	2	217	0	217	0	0	0	0	0
A49	Anchor									
	GR	0	-228	0	228	12	0	144	145	145
	T1	5	0	-824	824	0	29	0	29	0
	SUM	0	0	-24	24	0	-1	0	0	0
	RESP	5	-228	-848	878	12	28	144	148	148
	TOTAL	0	1	3	3	2	45	45	45	45

HYDRO-AB PROJECT U-320 ES-320-H3, W4, W5, W6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 AutoPIPE-4.60 RESULT PAGE 118

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A50	Guide									
	GR	0	-225	0	225	0	0	0	0	0
	T1	3	0	0	3	0	0	0	0	0
	SUM	4	-225	0	225	0	0	0	0	0
	RESP	2	0	0	2	0	0	0	0	0
	TOTAL	2	225	0	225	0	0	0	0	0
A51	Guide									
	GR	0	-225	0	225	0	0	0	0	0
	T1	-12	0	0	12	0	0	0	0	0
	SUM	-13	-225	0	225	0	0	0	0	0
	RESP	19	225	0	225	0	0	0	0	0
	TOTAL	19	225	0	225	0	0	0	0	0
A52	Guide									
	GR	0	-227	0	227	0	0	0	0	0
	T1	46	0	0	46	0	0	0	0	0
	SUM	47	-227	0	231	0	0	0	0	0
	RESP	23	0	0	23	0	0	0	0	0
	TOTAL	70	227	0	237	0	0	0	0	0
A53	Guide									
	GR	0	-220	0	220	0	0	0	0	0
	T1	-172	0	0	172	0	0	0	0	0
	SUM	-176	-220	0	282	0	0	0	0	0
	RESP	87	0	0	87	0	0	0	0	0
	TOTAL	262	220	0	343	0	0	0	0	0
153	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	465	0	0	465	0	0	0	0	0
	SUM	477	-244	0	535	0	0	0	0	0
	RESP	147	0	0	147	0	0	0	0	0
	TOTAL	624	244	0	669	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A54	Inclined						
	GR	0	-176	0	176	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-176	0	176	0	0
	TOTAL	0	0	0	0	0	0
A56	Inclined						
	GR	0	-106	0	106	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-106	0	106	0	0
	TOTAL	0	0	0	0	0	0
I56	Inclined						
	GR	0	-105	0	105	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-105	0	105	0	0
	TOTAL	0	0	0	0	0	0
A58	Inclined						
	GR	0	-178	0	178	0	0
	T1	0	0	0	0	0	0
	P1	0	0	0	0	0	0
	SUM	0	-178	0	178	0	0
	TOTAL	0	0	0	0	0	0
A59	Inclined						
	GR	0	-250	0	250	0	0
	T1	-463	0	0	463	0	0
	P1	-11	0	0	11	0	0
	SUM	-474	0	0	475	0	0
	TOTAL	612	250	0	661	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A60	Guide						
	GR	0	-231	0	231	0	0
	T1	168	4	0	168	0	0
	P1	0	0	0	4	0	0
	SUM	173	-231	0	289	0	0
	TOTAL	252	231	0	342	0	0
A61	Guide						
	GR	0	-237	0	237	0	0
	T1	-45	0	0	45	0	0
	P1	-1	0	0	1	0	0
	SUM	-46	-237	0	241	0	0
	TOTAL	67	237	0	246	0	0
A62	Guide						
	GR	0	-235	0	235	0	0
	T1	12	0	0	12	0	0
	P1	0	0	0	0	0	0
	SUM	12	-235	0	235	0	0
	TOTAL	18	235	0	236	0	0
A63	Guide						
	GR	0	-236	0	236	0	0
	T1	-3	0	0	3	0	0
	P1	0	0	0	0	0	0
	SUM	-3	-236	0	236	0	0
	TOTAL	5	236	0	236	0	0
A64	Guide						
	GR	0	-235	0	235	0	0
	T1	1	0	0	1	0	0
	P1	0	0	0	0	0	0
	SUM	1	-235	0	235	0	0
	TOTAL	1	235	0	235	0	0

HYDRO-AB PROJECT N-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe#4.60 RESULT PAGE 121

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		MOMENTS (ft-lb)		Result	Z	Result	Z
		X	Y	X	Y				
A65	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
A66	RESP	0	0	0	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0
	Anchor								
	GR	0	-235	0	235	0	0	0	0
A67	T1	0	0	76	76	0	1	8	8
	P1	0	0	2	2	0	0	0	0
	SUM	0	-235	78	248	0	1	8	8
	RESP	0	0	8	8	0	0	0	0
	TOTAL	0	235	85	250	0	1	8	8
A68	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0
A69	RESP	0	0	0	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0
	Guide								
	GR	0	-235	0	235	0	0	0	0
A70	T1	-1	0	0	-1	0	0	0	0
	P1	-1	0	0	0	0	0	0	0
	SUM	-2	0	0	-1	0	0	0	0
	RESP	0	0	0	0	0	0	0	0
	TOTAL	1	235	0	235	0	0	0	0
A71	Guide								
	GR	0	-236	0	236	0	0	0	0
	T1	4	0	0	0	0	0	0	0
	P1	0	0	0	4	0	0	0	0
	SUM	4	-236	0	236	0	0	0	0
A72	RESP	2	0	0	2	0	0	0	0
	TOTAL	5	236	0	236	0	0	0	0
	Inclined								
	GR	0	-178	0	178	0	0	0	0
A73	T1	0	-101	0	101	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-101	0	101	0	0	0	0
	RESP	0	0	0	0	0	0	0	0
	TOTAL	0	284	0	284	0	0	0	0

HYDRO-AB PROJECT N-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe#4.60 RESULT PAGE 122

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)		MOMENTS (ft-lb)		Result	Z	Result	Z
		X	Y	X	Y				
A70	Guide								
	GR	0	-235	0	235	0	0	0	0
	T1	-13	0	13	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	-14	-235	13	0	0	0	0	0
A71	RESP	6	0	6	0	0	0	0	0
	TOTAL	19	235	19	236	0	0	0	0
	Guide								
	GR	0	-237	0	237	0	0	0	0
A72	T1	50	-1	50	0	0	0	0	0
	P1	1	0	1	0	0	0	0	0
	SUM	51	-237	51	0	0	0	0	0
	RESP	22	0	22	0	0	0	0	0
	TOTAL	73	237	73	248	0	0	0	0
A73	Guide								
	GR	0	-231	0	231	0	0	0	0
	T1	-186	2	186	0	0	0	0	0
	P1	-5	0	5	0	0	0	0	0
	SUM	-191	-229	191	0	0	0	0	0
A74	RESP	82	0	82	0	0	0	0	0
	TOTAL	275	229	275	356	0	0	0	0
	Guide								
	GR	0	-250	0	250	0	0	0	0
A75	T1	517	-9	517	0	0	0	0	0
	P1	513	0	513	0	0	0	0	0
	SUM	1030	-250	1030	0	0	0	0	0
	RESP	142	0	142	0	0	0	0	0
	TOTAL	672	259	672	720	0	0	0	0
A76	Inclined								
	GR	0	-178	0	178	0	0	0	0
	T1	0	-101	0	101	0	0	0	0
	P1	0	0	0	0	0	0	0	0
	SUM	0	-284	0	284	0	0	0	0
A77	RESP	0	3	0	3	0	0	0	0
	TOTAL	0	284	0	284	0	0	0	0

HYDRO-AB PROJECT U-320 ES-320-M3, W4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 123

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A76	Inclined										
	GR	0	-106	0	106	0	0	0	0	0	0
	T1	0	143	0	143	0	0	0	0	0	0
	P1	0	4	0	4	0	0	0	0	0	0
	SUM	0	40	0	40	0	0	0	0	0	0
	TOTAL	0	43	0	43	0	0	0	0	0	0
I76	Inclined										
	GR	0	-106	0	106	0	0	0	0	0	0
	T1	0	-143	0	143	0	0	0	0	0	0
	P1	0	-4	0	4	0	0	0	0	0	0
	SUM	0	-252	0	252	0	0	0	0	0	0
	TOTAL	0	255	0	255	0	0	0	0	0	0
A78	Inclined										
	GR	0	-178	0	178	0	0	0	0	0	0
	T1	0	101	0	101	0	0	0	0	0	0
	P1	0	12	0	12	0	0	0	0	0	0
	SUM	0	-76	0	76	0	0	0	0	0	0
	TOTAL	0	77	0	77	0	0	0	0	0	0
A79	Guide										
	GR	0	-250	0	250	0	0	0	0	0	0
	T1	-517	0	517	0	0	0	0	0	0	0
	P1	-113	0	113	0	0	0	0	0	0	0
	SUM	-530	-242	0	582	0	0	0	0	0	0
	TOTAL	672	242	0	714	0	0	0	0	0	0
A80	Guide										
	GR	0	-231	0	231	0	0	0	0	0	0
	T1	186	-2	0	186	0	0	0	0	0	0
	P1	5	0	5	0	0	0	0	0	0	0
	SUM	191	-234	0	302	0	0	0	0	0	0
	TOTAL	273	234	0	359	0	0	0	0	0	0

HYDRO-AB PROJECT U-320 ES-320-M3, W4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 124

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A81	Guide										
	GR	0	-237	0	237	0	0	0	0	0	0
	T1	-50	1	0	50	0	0	0	0	0	0
	P1	-1	0	1	1	0	0	0	0	0	0
	SUM	-51	-236	0	241	0	0	0	0	0	0
	TOTAL	73	236	0	247	0	0	0	0	0	0
A82	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	13	0	0	13	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	14	-235	0	236	0	0	0	0	0	0
	TOTAL	19	235	0	236	0	0	0	0	0	0
A83	Guide										
	GR	0	-236	0	236	0	0	0	0	0	0
	T1	-4	0	0	4	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	-4	-236	0	236	0	0	0	0	0	0
	TOTAL	5	235	0	236	0	0	0	0	0	0
A84	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	1	0	0	1	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	1	-235	0	235	0	0	0	0	0	0
	TOTAL	1	235	0	235	0	0	0	0	0	0
A85	Guide										
	GR	0	-235	0	235	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-235	0	235	0	0	0	0	0	0
	TOTAL	0	235	0	235	0	0	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M5, M4, M5, M6 CF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI Rev. 2 Autopipe-4.00 RESULT PAGE 125

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A86	Anchor							
	GR	0	-235	0	235	0	0	1
	T1	3	0	-366	366	0	-12	8
	P1	0	0	-7	7	0	0	0
	SUM	3	-235	-373	441	0	-12	9
	TOTAL	3	-235	-373	441	0	-12	9
A87	Guide							
	GR	0	-235	0	235	0	0	0
	T1	-11	0	0	11	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-11	-235	0	236	0	0	0
	TOTAL	11	235	0	236	0	0	0
A88	Guide							
	GR	0	-235	0	235	0	0	0
	T1	20	0	0	20	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	20	-235	0	236	0	0	0
	TOTAL	20	235	0	236	0	0	0
A89	Guide							
	GR	0	-236	0	236	0	0	0
	T1	-17	0	0	17	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	-16	-236	0	236	0	0	0
	TOTAL	16	236	0	236	0	0	0
A90	Guide							
	GR	0	-235	0	235	0	0	0
	T1	2	0	0	2	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	2	-235	0	235	0	0	0
	TOTAL	11	235	0	235	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M5, M4, M5, M6 CF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI Rev. 2 Autopipe-4.00 RESULT PAGE 126

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result
		X	Y	Z	X	Y	Z	
A91	Guide							
	GR	0	-237	0	237	0	0	0
	T1	19	0	0	19	0	0	0
	P1	1	0	0	1	0	0	0
	SUM	20	-237	0	238	0	0	0
	TOTAL	34	237	0	34	0	0	0
A92	Guide							
	GR	0	-230	0	230	0	0	0
	T1	-78	0	0	78	0	0	0
	P1	-3	0	0	3	0	0	0
	SUM	-81	-230	0	244	0	0	0
	TOTAL	127	230	0	127	0	0	0
A93	Guide							
	GR	0	-255	0	255	0	0	0
	T1	225	0	0	225	0	0	0
	P1	7	0	0	7	0	0	0
	SUM	232	-255	0	344	0	0	0
	TOTAL	462	255	0	230	0	0	0
A94	Inclined							
	GR	0	-168	0	168	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-168	0	168	0	0	0
	TOTAL	0	168	0	168	0	0	0
A96	Inclined							
	GR	0	-130	0	130	0	0	0
	T1	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0
	SUM	0	-130	0	130	0	0	0
	TOTAL	0	130	0	130	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A97	Guide	0	-221	0	221	0	0	0	0	0	0
	GR	0	0	-597	597	0	0	0	0	0	0
	T1	0	0	-19	19	0	0	0	0	0	0
	P1	0	0	-617	655	0	0	0	0	0	0
	SUM	0	-221	0	221	0	0	0	0	0	0
	TOTAL	0	-221	0	221	0	0	0	0	0	0
A98	Guide	0	-220	0	220	0	0	0	0	0	0
	GR	0	0	556	556	0	0	0	0	0	0
	T1	0	0	18	18	0	0	0	0	0	0
	P1	0	-220	574	614	0	0	0	0	0	0
	SUM	0	-220	574	614	0	0	0	0	0	0
	TOTAL	0	-220	574	614	0	0	0	0	0	0
A99	Inclined	0	-132	0	132	0	0	0	0	0	0
	GR	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	-132	0	132	0	0	0	0	0	0
	SUM	0	-132	0	132	0	0	0	0	0	0
	TOTAL	0	-132	0	132	0	0	0	0	0	0
A101	Inclined	0	-164	0	164	0	0	0	0	0	0
	GR	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	-164	0	164	0	0	0	0	0	0
	SUM	0	-164	0	164	0	0	0	0	0	0
	TOTAL	0	-164	0	164	0	0	0	0	0	0
A102	Guide	0	-241	0	241	0	0	0	0	0	0
	GR	0	0	244	244	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	-241	0	241	0	0	0	0	0	0
	SUM	0	-241	0	241	0	0	0	0	0	0
	TOTAL	0	-241	0	241	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	X	Y	Z	Result
		X	Y	Z	X	Y	Z					
A103	Guide	0	-209	0	209	0	0	0	0	0	0	0
	GR	0	0	93	93	0	0	0	0	0	0	0
	T1	0	0	4	4	0	0	0	0	0	0	0
	P1	0	-209	0	230	0	0	0	0	0	0	0
	SUM	0	-209	0	230	0	0	0	0	0	0	0
	TOTAL	0	-209	0	230	0	0	0	0	0	0	0
A104	Guide	0	-218	0	218	0	0	0	0	0	0	0
	GR	0	0	3	3	0	0	0	0	0	0	0
	T1	0	0	1	1	0	0	0	0	0	0	0
	P1	0	-218	0	218	0	0	0	0	0	0	0
	SUM	0	-218	0	218	0	0	0	0	0	0	0
	TOTAL	0	-218	0	218	0	0	0	0	0	0	0
A105	Guide	0	-216	0	216	0	0	0	0	0	0	0
	GR	0	0	27	27	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	-216	0	217	0	0	0	0	0	0	0
	SUM	0	-216	0	217	0	0	0	0	0	0	0
	TOTAL	0	-216	0	217	0	0	0	0	0	0	0
A106	Guide	0	-217	0	217	0	0	0	0	0	0	0
	GR	0	0	17	17	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	-217	0	217	0	0	0	0	0	0	0
	SUM	0	-217	0	217	0	0	0	0	0	0	0
	TOTAL	0	-217	0	217	0	0	0	0	0	0	0
A107	Anchor	0	-217	35	220	-3	0	-9	19	27	9	25
	GR	0	0	39	40	-16	0	0	0	0	0	0
	T1	0	0	1	1	0	0	0	0	0	0	0
	P1	0	-217	71	231	-12	0	11	23	30	11	25
	SUM	0	-217	71	231	-12	0	11	23	30	11	25
	TOTAL	0	-217	71	231	-12	0	11	23	30	11	25

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 129

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A108	Guide										
	GR	0	-214	0	214	0	0	0	0	0	0
	T1	1	9	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	1	-204	0	204	0	0	0	0	0	0
	TOTAL	2	204	0	204	0	0	0	0	0	0
A109	Guide										
	GR	0	-225	0	225	0	0	0	0	0	0
	T1	-5	-32	0	33	0	0	0	0	0	0
	P1	0	-1	0	0	0	0	0	0	0	0
	SUM	-5	-259	0	259	0	0	0	0	0	0
	TOTAL	7	259	0	259	0	0	0	0	0	0
A110	Guide										
	GR	0	-150	0	150	0	0	0	0	0	0
	T1	64	135	0	150	0	0	0	0	0	0
	P1	0	3	0	3	0	0	0	0	0	0
	SUM	64	138	0	153	0	0	0	0	0	0
	TOTAL	69	141	0	156	0	0	0	0	0	0
A112	Guide										
	GR	0	-124	-8	124	0	0	0	0	0	0
	T1	-108	-163	-11	196	0	0	0	0	0	0
	P1	-1	-4	0	0	0	0	0	0	0	0
	SUM	-109	-167	-11	196	0	0	0	0	0	0
	TOTAL	154	174	0	197	0	0	0	0	0	0
I112	Guide										
	GR	0	-198	-13	198	0	0	0	0	0	0
	T1	133	58	4	145	0	0	0	0	0	0
	P1	3	1	0	0	0	0	0	0	0	0
	SUM	136	59	4	145	0	0	0	0	0	0
	TOTAL	274	139	9	307	0	0	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 130

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
I113	Guide										
	GR	0	-212	-14	213	0	0	0	0	0	0
	T1	-303	-42	-3	306	0	0	0	0	0	0
	P1	-8	-1	0	8	0	0	0	0	0	0
	SUM	-311	-255	-3	403	0	0	0	0	0	0
	TOTAL	530	258	17	590	0	0	0	0	0	0
A113	Inclined										
	GR	0	-116	0	116	0	0	0	0	0	0
	T1	0	27	0	27	0	0	0	0	0	0
	P1	0	1	0	1	0	0	0	0	0	0
	SUM	0	-89	0	89	0	0	0	0	0	0
	TOTAL	0	98	0	98	0	0	0	0	0	0
A115	Inclined										
	GR	0	-189	0	189	0	0	0	0	0	0
	T1	0	-3	0	3	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-192	0	192	0	0	0	0	0	0
	TOTAL	0	198	0	198	0	0	0	0	0	0
A116	Inclined										
	GR	0	-165	0	165	0	0	0	0	0	0
	T1	0	23	0	23	0	0	0	0	0	0
	P1	0	-1	0	1	0	0	0	0	0	0
	SUM	0	-14	0	14	0	0	0	0	0	0
	TOTAL	0	144	0	144	0	0	0	0	0	0
A118	Inclined										
	GR	0	-154	0	154	0	0	0	0	0	0
	T1	0	-11	0	11	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-165	0	165	0	0	0	0	0	0
	TOTAL	0	167	0	167	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A119	Guide									
	GR	0	-265	0	265	0	0	0	0	0
	T1	320	1	0	320	0	0	0	0	0
	P1	328	0	0	8	0	0	0	0	0
	SUM	328	-264	0	431	0	0	0	0	0
	TOTAL	450	264	0	522	0	0	0	0	0
A120	Guide									
	GR	0	-239	0	239	0	0	0	0	0
	T1	-138	0	0	138	0	0	0	0	0
	P1	-142	-239	0	278	0	0	0	0	0
	SUM	74	0	0	74	0	0	0	0	0
	TOTAL	215	239	0	322	0	0	0	0	0
A121	Guide									
	GR	0	-246	0	246	0	0	0	0	0
	T1	51	0	0	0	0	0	0	0	0
	P1	52	0	0	1	0	0	0	0	0
	SUM	20	-246	0	251	0	0	0	0	0
	TOTAL	72	246	0	256	0	0	0	0	0
A122	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	-18	0	0	18	0	0	0	0	0
	P1	-19	0	0	0	0	0	0	0	0
	SUM	-5	-244	0	245	0	0	0	0	0
	TOTAL	24	244	0	245	0	0	0	0	0
A123	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	5	0	0	5	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	5	-244	0	244	0	0	0	0	0
	TOTAL	6	244	0	244	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result
		X	Y	Z	X	Y	Z			
A124	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	-1	0	0	1	0	0	0	0	0
	P1	-1	-244	0	244	0	0	0	0	0
	SUM	0	0	0	0	0	0	0	0	0
	TOTAL	2	244	0	244	0	0	0	0	0
A125	Anchor									
	GR	0	-244	0	244	0	0	0	9	9
	T1	0	0	148	148	0	1	7	7	7
	P1	0	0	4	4	0	0	0	0	0
	SUM	0	-244	151	287	0	1	16	16	16
	TOTAL	1	244	174	300	0	2	16	16	16
A126	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	-244	0	244	0	0	0	0	0
	SUM	-1	0	0	0	0	0	0	0	0
	TOTAL	1	244	0	244	0	0	0	0	0
A127	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0
	SUM	0	-244	0	244	0	0	0	0	0
	TOTAL	3	244	0	244	0	0	0	0	0
A128	Guide									
	GR	0	-244	0	244	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0
	P1	-7	-244	0	244	0	0	0	0	0
	SUM	6	0	0	6	0	0	0	0	0
	TOTAL	13	244	0	244	0	0	0	0	0

HYDRO-AB PROJECT H-320 ES-320-43, M4, M5, M6 ICE Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 133

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A129	Guide						
	GR	0	-245	0	245	0	0
	T1	24	0	0	24	0	0
	P1	1	0	0	1	0	0
	SUM	25	-245	0	246	0	0
	TOTAL	49	246	0	251	0	0
A130	Guide						
	GR	0	-240	0	240	0	0
	T1	-108	2	0	108	0	0
	P1	-11	0	0	2	0	0
	SUM	-119	-238	0	262	0	0
	TOTAL	200	238	0	311	0	0
A131	Guide						
	GR	0	-260	0	260	0	0
	T1	349	0	0	349	0	0
	P1	9	0	0	9	0	0
	SUM	359	-267	0	447	0	0
	TOTAL	512	267	0	577	0	0
A132	Inclined						
	GR	0	-171	0	171	0	0
	T1	0	70	0	70	0	0
	P1	0	-2	0	2	0	0
	SUM	0	-242	0	242	0	0
	TOTAL	0	245	0	245	0	0
A134	Inclined						
	GR	0	-131	0	131	0	0
	T1	0	89	0	89	0	0
	P1	0	2	0	2	0	0
	SUM	0	-39	0	39	0	0
	TOTAL	0	43	0	43	0	0

HYDRO-AB PROJECT H-320 ES-320-43, M4, M5, M6 ICE Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe4.60 RESULT PAGE 134

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A134	Inclined						
	GR	0	-130	0	130	0	0
	T1	0	-89	0	89	0	0
	P1	0	-2	0	2	0	0
	SUM	0	-221	0	221	0	0
	TOTAL	0	225	0	225	0	0
A136	Inclined						
	GR	0	-171	0	171	0	0
	T1	0	70	0	70	0	0
	P1	0	2	0	2	0	0
	SUM	0	-92	0	99	0	0
	TOTAL	0	103	0	103	0	0
A137	Guide						
	GR	0	-260	0	260	0	0
	T1	-349	7	0	349	0	0
	P1	9	0	0	9	0	0
	SUM	-359	-253	0	433	0	0
	TOTAL	512	254	0	571	0	0
A138	Guide						
	GR	0	-240	0	240	0	0
	T1	108	-2	0	108	0	0
	P1	0	2	0	2	0	0
	SUM	112	-242	0	242	0	0
	TOTAL	201	242	0	314	0	0
A139	Guide						
	GR	0	-245	0	245	0	0
	T1	-24	0	0	24	0	0
	P1	0	0	0	0	0	0
	SUM	-25	-245	0	246	0	0
	TOTAL	49	245	0	250	0	0

RESTRAINT REACTIONS

Point name	Load combination	X	Y	Z	FORCES (lb)	X	Y	Z	MOMENTS (ft-lb)	X	Y	Z	Result
A140	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	6	0	0	0	0	0	0	0	0	0	0	0
	P1	7	0	0	0	0	0	0	0	0	0	0	0
	SUM	13	-244	0	244	0	244	0	0	0	0	0	0
	TOTAL	13	244	0	244	0	244	0	0	0	0	0	0
A141	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	-2	0	0	0	0	0	0	0	0	0	0	0
	P1	-2	0	0	0	0	0	0	0	0	0	0	0
	SUM	-2	-244	0	244	0	244	0	0	0	0	0	0
	TOTAL	3	244	0	244	0	244	0	0	0	0	0	0
A142	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0	0
	P1	1	-244	0	244	0	244	0	0	0	0	0	0
	SUM	1	-244	0	244	0	244	0	0	0	0	0	0
	TOTAL	1	244	0	244	0	244	0	0	0	0	0	0
A143	Anchor												
	GR	0	-244	0	244	0	244	0	0	2	17	2	0
	T1	3	0	-181	181	0	-16	7	0	0	0	0	0
	P1	3	0	-184	306	0	-16	9	0	0	0	0	0
	SUM	6	-244	-365	487	0	-32	16	0	0	0	0	0
	TOTAL	3	244	212	324	0	17	9	0	1	19	0	0
A144	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	-10	0	0	0	0	0	0	0	0	0	0	0
	P1	-13	0	0	0	0	0	0	0	0	0	0	0
	SUM	-23	-244	0	245	0	0	0	0	0	0	0	0
	TOTAL	14	244	0	245	0	0	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	X	Y	Z	FORCES (lb)	X	Y	Z	MOMENTS (ft-lb)	X	Y	Z	Result
A145	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	25	0	0	0	25	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	25	-244	0	246	25	0	0	0	0	0	0	0
	TOTAL	26	244	0	246	26	0	0	0	0	0	0	0
A146	Guide												
	GR	0	-244	0	244	0	244	0	0	0	0	0	0
	T1	-30	0	0	0	30	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	-30	-244	0	246	30	0	0	0	0	0	0	0
	TOTAL	35	244	0	246	35	0	0	0	0	0	0	0
A147	Guide												
	GR	0	-246	0	246	0	246	0	0	0	0	0	0
	T1	44	0	0	0	44	0	0	0	0	0	0	0
	P1	1	0	0	0	1	0	0	0	0	0	0	0
	SUM	45	-246	0	250	45	0	0	0	0	0	0	0
	TOTAL	63	246	0	254	63	0	0	0	0	0	0	0
A148	Guide												
	GR	0	-239	0	239	0	239	0	0	0	0	0	0
	T1	-133	0	0	133	0	0	0	0	0	0	0	0
	P1	4	0	0	4	0	0	0	0	0	0	0	0
	SUM	-129	-239	0	275	129	0	0	0	0	0	0	0
	TOTAL	205	239	0	315	205	0	0	0	0	0	0	0
A149	Guide												
	GR	0	-266	0	266	0	266	0	0	0	0	0	0
	T1	299	0	0	299	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0
	SUM	309	-266	0	406	309	0	0	0	0	0	0	0
	TOTAL	431	266	0	506	431	0	0	0	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 137

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	Z	Result	Z
		X	Y	Z	X	Y	Z				
A150	Inclined										
	GR	0	-161	0	161	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-161	0	161	0	0	0	0	0	0
A152	GR	0	0	0	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0
A153	Inclined										
	GR	0	-151	0	151	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-151	0	151	0	0	0	0	0	0
A155	GR	0	-248	0	248	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-248	0	248	0	0	0	0	0	0
	TOTAL	0	-248	0	248	0	0	0	0	0	0
A156	Inclined										
	GR	0	-212	0	212	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-212	0	212	0	0	0	0	0	0
A157	GR	0	-241	0	241	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0
	SUM	0	-241	0	241	0	0	0	0	0	0
	TOTAL	0	-241	0	241	0	0	0	0	0	0

HYDRO-AB PROJECT W-320 ES-320-M3, M4, M5, M6 ICF Kaiser Hanford Company
09/05/96 HYDRO TEST AT 600 PSI REV. 2 Autopipe+4.60 RESULT PAGE 138

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)			Result	X	Y	Z	Result
		X	Y	Z	X	Y	Z					
A159	Inclined											
	GR	0	-120	0	120	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-120	0	120	0	0	0	0	0	0	0
A161	GR	0	-129	0	129	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-129	0	129	0	0	0	0	0	0	0
	TOTAL	0	-129	0	129	0	0	0	0	0	0	0
A162	Inclined											
	GR	0	-221	0	221	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-221	0	221	0	0	0	0	0	0	0
A163	GR	0	-263	0	263	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-263	0	263	0	0	0	0	0	0	0
	TOTAL	0	-263	0	263	0	0	0	0	0	0	0
A164	Inclined											
	GR	0	-199	0	199	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-199	0	199	0	0	0	0	0	0	0
A165	GR	0	-212	0	212	0	0	0	0	0	0	0
	T1	0	0	0	0	0	0	0	0	0	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0
	SUM	0	-212	0	212	0	0	0	0	0	0	0
	TOTAL	0	-212	0	212	0	0	0	0	0	0	0

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			MOMENTS (ft-lb)		
		X	Y	Z	X	Y	Z
A166	Inclined	0	-79	0	79	0	0
	GR	0	0	0	0	0	0
	T1	0	0	0	0	0	0
	P1	0	-79	0	79	0	0
	SUM	0	0	0	0	0	0
A167	RESP	0	0	0	0	0	0
	TOTAL	0	79	0	79	0	0
A167	Anchor	0	-67	0	67	-81	0
	GR	-622	0	946	1132	0	2738
	T1	-20	0	34	40	83	0
	P1	-642	-67	980	1174	-81	2820
	SUM	0	0	0	0	0	0
A167	RESP	0	0	0	0	0	0
	TOTAL	642	67	980	1174	81	2820

ASME B31.3c (1992) CODE COMPLIANCE

Point name	Load combination	Moment	In-Pl. Output	(ft-lb)		S.I.F. Eq. Load no. type	(Stress in psi)	
				Moment	Moment		Code	Stress Allow.
*** Segment A begin ***								
A00	Max P	36	12	(3a) HOOP		1.00 1.00 (18)	8944	16700
	GR + Max P	0	294	(3a) HOOP		1.00 1.00 (17) DISP	3990	16700
	Cold to T1	0	326	(3a) HOOP		1.00 1.00 (18) OCC	1098	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	1565	22211
A01	Max P	123	24	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	472	(3a) HOOP		1.00 1.00 (17) DISP	4409	16700
	Cold to T1	0	663	(3a) HOOP		1.00 1.00 (18) OCC	1764	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	3183	22211
A02	Max P	18	24	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	880	(3a) HOOP		1.00 1.00 (17) DISP	3990	16700
	Cold to T1	0	519	(3a) HOOP		1.00 1.00 (18) OCC	3285	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	2491	22211
A03 N-	Max P	18	24	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	899	(3a) HOOP		1.00 1.00 (17) DISP	3993	16700
	Cold to T1	0	535	(3a) HOOP		1.00 1.00 (18) OCC	3355	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	2356	22211
A03 N+	Max P	24	18	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	899	(3a) HOOP		1.00 1.00 (17) DISP	3993	16700
	Cold to T1	0	533	(3a) HOOP		1.00 1.00 (18) OCC	3355	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	2356	22211
A03 M	Max P	29	37	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	1003	(3a) HOOP		1.00 1.00 (17) DISP	4033	16700
	Cold to T1	0	625	(3a) HOOP		1.00 1.00 (18) OCC	3746	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	3001	22211
A03 F-	Max P	26	81	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	904	(3a) HOOP		1.00 1.00 (17) DISP	4217	16700
	Cold to T1	0	599	(3a) HOOP		1.00 1.00 (18) OCC	3373	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	2876	22211
A03 F+	Max P	81	26	(3a) HOOP		1.00 1.00 (18) SUST	8944	16700
	GR + Max P	0	904	(3a) HOOP		1.00 1.00 (17) DISP	4217	16700
	Cold to T1	0	599	(3a) HOOP		1.00 1.00 (18) OCC	3373	25050
	SRSS	0	0	(3a) HOOP		1.00 1.00 (18) OCC	2876	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress Allow.
A04	Max P	86	26		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4240 16700
	Cold to T1	0	886	0	1.00	1.00 (17)	DISP	3306 25050
	SRSS	0	592		1.00	1.00 (18)	OC	2840 22211
A05	Max P	203	21		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4240 16700
	Cold to T1	0	792	0	1.00	1.00 (17)	DISP	2057 25050
	SRSS	0	371		1.00	1.00 (18)	OC	1779 22211
A06	Max P	172	9		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4635 16700
	Cold to T1	0	229	0	1.00	1.00 (17)	DISP	854 25050
	SRSS	0	94		1.00	1.00 (18)	OC	449 22211
A07	Max P	179	17		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4671 16700
	Cold to T1	0	128	0	1.00	1.00 (17)	DISP	479 25050
	SRSS	0	6		1.00	1.00 (18)	OC	29 22211
A08	Max P	181	58		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4722 16700
	Cold to T1	0	1518	0	1.00	1.00 (17)	DISP	5667 25050
	SRSS	0	69		1.00	1.00 (18)	OC	332 22211
A085	Max P	95	7		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4267 16700
	Cold to T1	0	300	0	1.00	1.00 (17)	DISP	1455 25050
	SRSS	0	68		1.00	1.00 (18)	OC	328 22211
A09	Max P	99	54		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4350 16700
	Cold to T1	0	1770	0	1.00	1.00 (17)	DISP	6608 25050
	SRSS	0	156		1.00	1.00 (18)	OC	751 22211
A10 N+	Max P	69	60		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4249 16700
	Cold to T1	0	1929	0	1.00	1.00 (17)	DISP	7202 25050
	SRSS	0	166		1.00	1.00 (18)	OC	797 22211
A10 N+	Max P	60	69		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4249 16700
	Cold to T1	1929	0		1.00	1.00 (17)	DISP	7202 25050
	SRSS	166	0		1.00	1.00 (18)	OC	797 22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress Allow.
A10 M	Max P	74	15		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4168 16700
	Cold to T1	2317	0		1.00	1.00 (17)	DISP	8649 25050
	SRSS	194	0		1.00	1.00 (18)	OC	930 22211
A10 F-	Max P	56	24		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4191 16700
	Cold to T1	1769	0		1.00	1.00 (17)	DISP	6518 25050
	SRSS	151	0		1.00	1.00 (18)	OC	728 22211
A10 F+	Max P	24	56		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4101 16700
	Cold to T1	0	1749	0	1.00	1.00 (17)	DISP	6528 25050
	SRSS	0	151		1.00	1.00 (18)	OC	728 22211
A11	Max P	45	50		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4133 16700
	Cold to T1	0	1563	0	1.00	1.00 (17)	DISP	5833 25050
	SRSS	0	136		1.00	1.00 (18)	OC	654 22211
A12	Max P	181	55		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4715 16700
	Cold to T1	0	1672	0	1.00	1.00 (17)	DISP	6241 25050
	SRSS	0	244		1.00	1.00 (18)	OC	1171 22211
A13	Max P	220	15		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4868 16700
	Cold to T1	0	410	0	1.00	1.00 (17)	DISP	1531 25050
	SRSS	0	65		1.00	1.00 (18)	OC	312 22211
A14	Max P	209	4		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4814 16700
	Cold to T1	0	31	0	1.00	1.00 (17)	DISP	115 25050
	SRSS	0	17		1.00	1.00 (18)	OC	83 22211
A15	Max P	212	1		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4838 16700
	Cold to T1	0	161	0	1.00	1.00 (17)	DISP	600 25050
	SRSS	0	5		1.00	1.00 (18)	OC	22 22211
A16	Max P	212	0		1.00	1.00 (18)	HOOP	8944 16700
	GR + Max P				1.00	1.00 (17)	SUST	4825 16700
	Cold to T1	0	46	0	1.00	1.00 (17)	DISP	170 25050
	SRSS	0	1		1.00	1.00 (18)	OC	6 22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	In Out no. type	Stress	Code Allow.
A17	GR + Max P Cold to T1 SRSS	212 0 0	23 0 0	0	1.00 1.00 1.00	1.00 1.00 1.00	(18) (18) (18)	SUST DISP OCC	8944 4826 83
A17	GR + Max P	211	0	1	1.00	1.00	(18)	SUST	8944
	GR + Max P	0	11	1	1.00	1.00	(17)	DISP	4820
	Cold to T1	0	3	3	1.00	1.00	(18)	OCC	43
A18	Max P	213	0	2	1.00	1.00	(18)	SUST	8944
	GR + Max P	0	23	7	1.00	1.00	(17)	DISP	4827
	Cold to T1	0	7	86	1.00	1.00	(18)	OCC	36
A19	Max P	208	6	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	1	80	486	1.00	1.00	(17)	DISP	4826
	Cold to T1	0	24	300	1.00	1.00	(18)	OCC	115
A20	Max P	225	23	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	3	300	1120	1.00	1.00	(17)	DISP	4890
	Cold to T1	2	89	429	1.00	1.00	(18)	OCC	429
A21	Max P	164	85	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	12	1126	4204	1.00	1.00	(17)	DISP	4691
	Cold to T1	7	336	1611	1.00	1.00	(18)	OCC	1611
A22	Max P	120	180	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	20	2180	4842	1.00	1.00	(17)	DISP	4842
	Cold to T1	30	410	8157	1.00	1.00	(18)	OCC	1972
A23 N-	Max P	87	195	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	41	2375	4830	1.00	1.00	(17)	DISP	4830
	Cold to T1	27	443	8867	1.00	1.00	(18)	OCC	2130
A23 M	Max P	195	87	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	2375	41	4830	1.00	1.00	(17)	DISP	4830
	Cold to T1	443	27	8867	1.00	1.00	(18)	OCC	2130

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	In Out no. type	Stress	Code Allow.
A23 M	GR + Max P Cold to T1 SRSS	203 2683 473	28 23 5	0	1.00 1.00 1.00	1.00 1.00 1.00	(18) (18) (18)	SUST DISP OCC	8944 9700 2271
A23 F-	Max P	79	11	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	977	73	32	1.00	1.00	(17)	DISP	4192
	Cold to T1	296	20	1425	1.00	1.00	(18)	OCC	3660
A23 F+	Max P	11	79	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	73	977	32	1.00	1.00	(17)	DISP	4192
	Cold to T1	20	296	1423	1.00	1.00	(18)	OCC	3660
A25	Max P	76	42	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	113	499	32	1.00	1.00	(17)	DISP	4224
	Cold to T1	30	281	1357	1.00	1.00	(18)	OCC	1914
A26 N-	Max P	45	74	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	30	894	32	1.00	1.00	(17)	DISP	4227
	Cold to T1	36	311	1502	1.00	1.00	(18)	OCC	1502
A26 N+	Max P	68	54	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	887	157	32	1.00	1.00	(17)	DISP	4227
	Cold to T1	312	26	1502	1.00	1.00	(18)	OCC	3363
A26 M	Max P	201	25	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	2424	62	58	1.00	1.00	(17)	DISP	4778
	Cold to T1	481	7	2308	1.00	1.00	(18)	OCC	9056
A26 F-	Max P	192	26	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	2316	27	56	1.00	1.00	(17)	DISP	4735
	Cold to T1	430	27	2069	1.00	1.00	(18)	OCC	2069
A26 F+	Max P	26	192	0	1.00	1.00	(18)	SUST	8944
	GR + Max P	69	2316	56	1.00	1.00	(17)	DISP	4735
	Cold to T1	27	430	2069	1.00	1.00	(18)	OCC	8651

ASME B31.3c (1992) CODE COMPLIANCE (stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load Code
Point name Load combination Moment Moment In Out no. type Stress Allow.

A27	GR + Max P	51	176	1.00	1.00	1.00	(18)	HOOP	8944	16700
	GR + Max P	58	2116	54	1.00	1.00	(17)	D1SP	4468	16700
	SRSS	30	395	1.00	1.00	1.00	(18)	OC	1900	22211
A28	Max P	171	78	1.00	1.00	1.00	(18)	SUST	4706	16700
	GR + Max P	76	1054	54	1.00	1.00	(17)	D1SP	3952	25050
	SRSS	49	333	1.00	1.00	1.00	(18)	OC	1614	22211
A29	Max P	270	19	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	81	536	54	1.00	1.00	(17)	D1SP	5103	16700
	SRSS	26	138	1.00	1.00	1.00	(18)	OC	2034	25050
A30	Max P	168	3	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	269	1099	54	1.00	1.00	(17)	D1SP	4213	25050
	SRSS	53	425	1.00	1.00	1.00	(18)	OC	2054	22211
A31	Max P	83	27	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	164	2538	56	1.00	1.00	(17)	D1SP	4225	16700
	SRSS	47	239	1.00	1.00	1.00	(18)	OC	1454	22211
A32 N-	Max P	54	29	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	151	2768	56	1.00	1.00	(17)	D1SP	4099	16700
	SRSS	42	330	1.00	1.00	1.00	(18)	OC	10351	25050
A32 N+	Max P	29	54	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	2768	151	56	1.00	1.00	(17)	D1SP	4099	16700
	SRSS	330	42	1.00	1.00	1.00	(18)	OC	10351	25050
A32 M	Max P	33	27	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	3024	59	41	1.00	1.00	(17)	D1SP	1129	25050
	SRSS	420	7	1.00	1.00	1.00	(18)	OC	2016	22211
A32 F-	Max P	13	22	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	1378	31	63	1.00	1.00	(17)	D1SP	3931	16700
	SRSS	373	40	1.00	1.00	1.00	(18)	OC	5895	25050

ASME B31.3c (1992) CODE COMPLIANCE (stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion S.I.F. Eq. Load Code
Point name Load combination Moment Moment In Out no. type Stress Allow.

A32 F+	Max P	20	16	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	219	1563	63	1.00	1.00	(17)	D1SP	3931	16700
	SRSS	51	372	1.00	1.00	1.00	(18)	OC	5895	25050
A33	Max P	43	12	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	185	1168	63	1.00	1.00	(17)	D1SP	4024	16700
	SRSS	51	358	1.00	1.00	1.00	(18)	OC	4252	25050
A34	Max P	31	12	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	62	1411	63	1.00	1.00	(17)	D1SP	3967	16700
	SRSS	12	359	1.00	1.00	1.00	(18)	OC	5277	25050
A35 N-	Max P	10	16	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	54	1807	63	1.00	1.00	(17)	D1SP	3899	16700
	SRSS	10	375	1.00	1.00	1.00	(18)	OC	4752	25050
A35 N+	Max P	16	10	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	1807	54	63	1.00	1.00	(17)	D1SP	3899	16700
	SRSS	375	10	1.00	1.00	1.00	(18)	OC	4752	25050
A35 M	Max P	29	25	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	3248	43	23	1.00	1.00	(17)	D1SP	3989	16700
	SRSS	451	8	1.00	1.00	1.00	(18)	OC	12126	25050
A35 F-	Max P	28	70	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	2990	8	2	1.00	1.00	(17)	D1SP	4168	16700
	SRSS	395	1	1.00	1.00	1.00	(18)	OC	11160	25050
A35 F+	Max P	70	28	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	2990	8	2	1.00	1.00	(17)	D1SP	4168	16700
	SRSS	395	1	1.00	1.00	1.00	(18)	OC	11160	25050
A36	Max P	100	26	1.00	1.00	1.00	(18)	SUST	8944	16700
	GR + Max P	2772	2	2	1.00	1.00	(17)	D1SP	4302	16700
	SRSS	368	1	1.00	1.00	1.00	(18)	OC	10349	25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)					(Stress in psi)				
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.		
A37	Max P GR + Max P Cold to T1	188 0 0	9 1526 418	0	1.00 1.00 (18) 2 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A38	Max P GR + Max P Cold to T1	219 0 0	3 433 119	0	1.00 1.00 (18) 2 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A39	Max P GR + Max P Cold to T1	209 0 0	1 215 59	0	1.00 1.00 (18) 2 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A39	Max P GR + Max P Cold to T1	360 0 42	13 345 0	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A40	Max P GR + Max P Cold to T1	87 0 84	26 694 0	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A41	Max P GR + Max P Cold to T1	1264 0 294	92 3226 0	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A42	Max P GR + Max P Cold to T1	412 0 134	106 3989 0	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A43	Max P GR + Max P Cold to T1	416 0 135	108 4062 0	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			
A43	Max P GR + Max P Cold to T1	108 4062 0	416 0 135	0	1.00 1.00 (18) 0 1.00 1.00 (17) 1.00 1.00 (18)	(3a) HOOP	8944	16700			

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Code	Stress	Allow.
A43 H	Max P	120	506	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	4489	0	0 1.00 1.00 (17) DISP		6290	16700	
	Cold to T1	0	164	0	1.00 1.00 (18) OCC		16759	25050	
A43 F-	Max P	111	488	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	4160	0	0 1.00 1.00 (17) DISP		6200	16700	
	Cold to T1	0	159	0	1.00 1.00 (18) OCC		15528	25050	
A43 F+	Max P	488	111	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	4160	0	0 1.00 1.00 (17) DISP		6200	16700	
	Cold to T1	159	0	0	1.00 1.00 (18) OCC		15528	25050	
A44	Max P	486	109	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	4094	0	0 1.00 1.00 (17) DISP		51285	25050	
	Cold to T1	159	0	0	1.00 1.00 (18) OCC		762	22211	
A45	Max P	1197	78	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	2890	0	0 1.00 1.00 (17) DISP		9556	16700	
	Cold to T1	258	0	0	1.00 1.00 (18) OCC		10788	25050	
A46	Max P	23	21	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	735	0	0 1.00 1.00 (17) DISP		3948	16700	
	Cold to T1	69	0	0	1.00 1.00 (18) OCC		331	22211	
A47	Max P	323	6	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	143	0	0 1.00 1.00 (17) DISP		5346	16700	
	Cold to T1	19	0	0	1.00 1.00 (18) OCC		532	25050	
A48	Max P	216	2	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	51	0	0 1.00 1.00 (17) DISP		4833	16700	
	Cold to T1	5	0	0	1.00 1.00 (18) OCC		190	25050	
A49 -	Max P	251	1	0	1.00 1.00 (18)	(3a) HOOP	8944	16700	
	GR + Max P	0	25	0	0 1.00 1.00 (17) DISP		5003	16700	
	Cold to T1	3	0	0	1.00 1.00 (18) OCC		94	25050	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F. In Out no. type	Eq. Load	Code	Stress Allow.
A49 + Max P	GR + Max P	239	0	0	1.00 1.00 (18) SUST	8944	16700	
	Cold to T1	0	4	0	0 1.00 1.00 (17) DISP	4955	16700	
	SRSS	0	2	0	1.00 1.00 (18) OCC	8	22211	
A50	Max P	239	0	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	7	0	0 1.00 1.00 (17) DISP	4957	16700	
	Cold to T1	0	4	0	1.00 1.00 (18) OCC	26	22211	
A51	Max P	239	1	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	26	0	0 1.00 1.00 (17) DISP	4953	16700	
	Cold to T1	0	12	0	1.00 1.00 (18) OCC	97	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	59	22211	
A52	Max P	242	2	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	97	0	0 1.00 1.00 (17) DISP	4970	16700	
	Cold to T1	0	46	0	1.00 1.00 (18) OCC	362	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	222	22211	
A53	Max P	228	9	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	343	0	0 1.00 1.00 (17) DISP	4964	16700	
	Cold to T1	0	174	0	1.00 1.00 (18) OCC	1357	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	833	22211	
153	Max P	280	33	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	1364	0	0 1.00 1.00 (17) DISP	5160	16700	
	Cold to T1	0	651	0	1.00 1.00 (18) OCC	5091	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	3126	22211	
A54	Max P	148	73	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	3005	0	0 1.00 1.00 (17) DISP	4598	16700	
	Cold to T1	0	334	0	1.00 1.00 (18) OCC	11220	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	1601	22211	
A55 N-	Max P	115	77	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	3160	0	0 1.00 1.00 (17) DISP	4963	16700	
	Cold to T1	0	357	0	1.00 1.00 (18) OCC	11831	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	1714	22211	
A55 N+	Max P	77	115	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	3169	0	0	0 1.00 1.00 (17) DISP	4473	16700	
	Cold to T1	357	0	0	1.00 1.00 (18) OCC	11831	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	1714	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F. In Out no. type	Eq. Load	Code	Stress Allow.
A55 M	Max P	82	1	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	3389	0	0	0 1.00 1.00 (17) DISP	4202	16700	
	Cold to T1	456	0	0	1.00 1.00 (18) OCC	12652	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2189	22211	
A55 F-	Max P	57	2	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	2325	0	0	0 1.00 1.00 (17) DISP	4205	16700	
	Cold to T1	489	0	0	1.00 1.00 (18) OCC	8830	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2349	22211	
A55 F+	Max P	2	57	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	2365	0	0 1.00 1.00 (17) DISP	4086	16700	
	Cold to T1	0	489	0	1.00 1.00 (18) OCC	8830	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2349	22211	
A56	Max P	16	51	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	2082	0	0 1.00 1.00 (17) DISP	4065	16700	
	Cold to T1	0	490	0	1.00 1.00 (18) OCC	7771	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2352	22211	
156	Max P	13	51	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	2109	0	0 1.00 1.00 (17) DISP	4064	16700	
	Cold to T1	0	479	0	1.00 1.00 (18) OCC	7872	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2300	22211	
A57 N-	Max P	5	58	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	0	2392	0	0 1.00 1.00 (17) DISP	4090	16700	
	Cold to T1	0	477	0	1.00 1.00 (18) OCC	8931	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2290	22211	
A57 N+	Max P	58	5	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	2392	0	0	0 1.00 1.00 (17) DISP	4090	16700	
	Cold to T1	477	0	0	1.00 1.00 (18) OCC	8931	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2290	22211	
A57 M	Max P	83	2	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	3416	0	0	0 1.00 1.00 (17) DISP	4205	16700	
	Cold to T1	441	0	0	1.00 1.00 (18) OCC	12752	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	2116	22211	
A57 F-	Max P	78	117	0	1.00 1.00 (18) SUST	8944	16700	
	GR + Max P	3168	0	0	0 1.00 1.00 (17) DISP	4483	16700	
	Cold to T1	348	0	0	1.00 1.00 (18) OCC	11831	25050	
	SRSS	0	0	0	1.00 1.00 (18) OCC	1671	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	Code	Stress Allow.
A57 ++	Max P	117	78		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	3196		0.100	1.00 (17) DI SP	4483	16700
	Cold to T1	0	348		1.00	1.00 (18) OCC	11932	25050
A58	Max P	150	74		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	3032		0.100	1.00 (17) DI SP	4609	16700
	Cold to T1	0	327		1.00	1.00 (18) OCC	11520	25050
A59	Max P	295	34		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	1399		0.100	1.00 (17) DI SP	5233	16700
	Cold to T1	0	627		1.00	1.00 (18) OCC	5224	25050
A60	Max P	253	9		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	373		0.100	1.00 (17) DI SP	5021	16700
	Cold to T1	0	167		1.00	1.00 (18) OCC	1395	25050
A61	Max P	264	2		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	100		0.100	1.00 (17) DI SP	5975	16700
	Cold to T1	0	45		1.00	1.00 (18) OCC	214	22211
A62	Max P	261	1		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	27		0.100	1.00 (17) DI SP	5060	16700
	Cold to T1	0	12		1.00	1.00 (18) OCC	99	25050
A63	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	7		0.100	1.00 (17) DI SP	5064	16700
	Cold to T1	0	3		1.00	1.00 (18) OCC	26	25050
A64	Max P	261	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	2		0.100	1.00 (17) DI SP	5062	16700
	Cold to T1	0	1		1.00	1.00 (18) OCC	4	22211
A65	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	1		0.100	1.00 (17) DI SP	5063	16700
	Cold to T1	0	0		1.00	1.00 (18) OCC	5062	25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)		
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	Code	Stress Allow.
A66 -	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	0		0.100	1.00 (17) DI SP	5063	16700
	Cold to T1	0	0		1.00	1.00 (18) OCC	21	22211
A66 +	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	0		0.100	1.00 (17) DI SP	5062	16700
	Cold to T1	0	0		1.00	1.00 (18) OCC	30	22211
A67	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	1		0.100	1.00 (17) DI SP	5063	16700
	Cold to T1	0	0		1.00	1.00 (18) OCC	30	22211
A68	Max P	261	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	2		0.100	1.00 (17) DI SP	5062	16700
	Cold to T1	0	0		1.00	1.00 (18) OCC	31	25050
A69	Max P	262	0		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	0		0.100	1.00 (17) DI SP	5063	16700
	Cold to T1	0	3		1.00	1.00 (18) OCC	16	22211
A70	Max P	261	1		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	0	29		0.100	1.00 (17) DI SP	5059	16700
	Cold to T1	0	12		1.00	1.00 (18) OCC	113	25050
A71	Max P	264	3		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	1	110		0.100	1.00 (17) DI SP	5074	16700
	Cold to T1	0	46		1.00	1.00 (18) OCC	220	22211
A72	Max P	253	10		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	5	412		0.100	1.00 (17) DI SP	5059	16700
	Cold to T1	0	172		1.00	1.00 (18) OCC	826	22211
A73	Max P	295	38		1.00	1.00 (18) SUST	8944	16700
	GR + Max P	19	1546		0.100	1.00 (17) DI SP	5237	16700
	Cold to T1	0	645		1.00	1.00 (18) OCC	5770	25050

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion
Point Load combination Moment Moment In Out no. type Stress Allow.

A74 Max P 148 83 114 87 8944 16700
GR + Max P 126 3616 4498 16700
Cold to T1 1 1 1,00 1,00 (17) D1SP 13507 25050
SRSS 72 336 359 1722 22211

A75 N- Max P 114 87 8944 16700
GR + Max P 126 3616 4498 16700
Cold to T1 1 1 1,00 1,00 (17) D1SP 13507 25050
SRSS 72 336 359 1722 22211

A75 M Max P 76 122 8944 16700
GR + Max P 3611 235 4498 16700
Cold to T1 357 35 13507 25050
SRSS 357 35 1722 22211

A75 F- Max P 91 1 8944 16700
GR + Max P 3873 6 4244 16700
Cold to T1 454 28 14463 25050
SRSS 454 28 2181 22211

A75 F- Max P 63 10 8944 16700
GR + Max P 2743 227 4498 16700
Cold to T1 489 1 10186 25050
SRSS 489 1 2345 22211

A75 F+ Max P 10 63 8944 16700
GR + Max P 227 2719 4116 16700
Cold to T1 1 489 10186 25050
SRSS 1 489 2345 22211

A76 Max P 8 55 8944 16700
GR + Max P 263 2385 4076 16700
Cold to T1 1 490 8959 25050
SRSS 1 490 2352 22211

176 Max P 20 61 8944 16700
GR + Max P 263 2385 4116 16700
Cold to T1 1 490 8959 25050
SRSS 1 490 2352 22211

A77 N- Max P 1 69 8944 16700
GR + Max P 227 2719 4140 16700
Cold to T1 1 489 10186 25050
SRSS 1 489 2345 22211

ASME B31.3c (1992) CODE COMPLIANCE (Stress in psi)
(Moments in ft-lb)
In-Pl. Out-Pl. Torsion
Point Load combination Moment Moment In Out no. type Stress Allow.

A77 N+ Max P 69 1 8944 16700
GR + Max P 2719 227 4140 16700
Cold to T1 489 1 10186 25050
SRSS 2345 22211

A77 M Max P 97 2 8944 16700
GR + Max P 3873 6 4498 16700
Cold to T1 454 28 14463 25050
SRSS 454 28 2181 22211

A77 F- Max P 99 111 8944 16700
GR + Max P 3611 235 4498 16700
Cold to T1 357 35 13507 25050
SRSS 357 35 1722 22211

A77 F+ Max P 120 88 8944 16700
GR + Max P 126 3616 4498 16700
Cold to T1 1 359 13507 25050
SRSS 1 359 1722 22211

A78 Max P 151 83 8944 16700
GR + Max P 72 3432 4498 16700
Cold to T1 1 356 12815 25050
SRSS 1 356 1614 22211

A79 Max P 295 37 8944 16700
GR + Max P 19 1546 5232 16700
Cold to T1 0 645 3770 25050
SRSS 0 645 3096 22211

A80 Max P 253 10 8944 16700
GR + Max P 5 412 5021 16700
Cold to T1 0 172 1539 25050
SRSS 0 172 826 22211

A81 Max P 264 3 8944 16700
GR + Max P 1 110 5071 16700
Cold to T1 0 46 411 25050
SRSS 0 46 220 22211

A82 Max P 261 1 8944 16700
GR + Max P 0 29 5059 16700
Cold to T1 0 12 113 25050
SRSS 0 12 59 22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	For. Moment	S.I.F.	Eq. Load	Stress	Code	
A83	Max P	262	0	8	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	8	1.00	1.00 (17)	DISP	5063	16700	
	Cold to T1	0	3	1.00	1.00 (18)	OC	42	25050	
	SRSS	0	3	1.00	1.00 (18)	OC	16	22211	
A84	Max P	261	0	8	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	2	8	1.00	1.00 (17)	DISP	5063	16700
	Cold to T1	0	1	1.00	1.00 (18)	OC	31	25050	
	SRSS	0	1	1.00	1.00 (18)	OC	4	22211	
A85	Max P	262	0	8	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	1	8	1.00	1.00 (17)	DISP	5063	16700
	Cold to T1	0	0	1.00	1.00 (18)	OC	30	25050	
	SRSS	0	0	1.00	1.00 (18)	OC	1	22211	
A86	Max P	262	0	8	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	0	8	1.00	1.00 (17)	DISP	5062	16700
	Cold to T1	0	0	1.00	1.00 (18)	OC	30	25050	
	SRSS	0	0	1.00	1.00 (18)	OC	1	22211	
A86	Max P	262	0	12	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	5065	16700
	Cold to T1	0	0	1.00	1.00 (18)	OC	46	25050	
	SRSS	0	0	1.00	1.00 (18)	OC	1	22211	
A87	Max P	262	0	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	25	0	1.00	1.00 (17)	DISP	5065	16700
	Cold to T1	0	0	1.00	1.00 (18)	OC	92	25050	
	SRSS	0	0	1.00	1.00 (18)	OC	2	22211	
A88	Max P	261	0	86	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	0	0	1.00	1.00 (17)	DISP	5065	16700
	Cold to T1	0	0	1.00	1.00 (18)	OC	323	25050	
	SRSS	0	1	1.00	1.00 (18)	OC	7	22211	
A89	Max P	262	0	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	65	0	1.00	1.00 (17)	DISP	5066	16700
	Cold to T1	0	5	1.00	1.00 (18)	OC	25	22211	
	SRSS	0	5	1.00	1.00 (18)	OC	25	22211	
A90	Max P	261	0	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	4	0	1.00	1.00 (17)	DISP	5064	16700
	Cold to T1	0	19	1.00	1.00 (18)	OC	16	25050	
	SRSS	0	19	1.00	1.00 (18)	OC	93	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pt. Moment	Out-Pt. Moment	For. Moment	S.I.F.	Eq. Load	Stress	Code	
A91	Max P	265	2	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	43	0	1.00	1.00 (17)	DISP	5080	16700
	Cold to T1	0	73	1.00	1.00 (18)	OC	162	25050	
	SRSS	0	73	1.00	1.00 (18)	OC	350	22211	
A92	Max P	250	6	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	174	0	1.00	1.00 (17)	DISP	5081	16700
	Cold to T1	0	273	1.00	1.00 (18)	OC	351	25050	
	SRSS	0	273	1.00	1.00 (18)	OC	1313	22211	
A93	Max P	304	23	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	653	0	1.00	1.00 (17)	DISP	5275	16700
	Cold to T1	0	1026	1.00	1.00 (18)	OC	2438	25050	
	SRSS	0	1026	1.00	1.00 (18)	OC	4923	22211	
A94	Max P	115	45	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	1532	0	1.00	1.00 (17)	DISP	4403	16700
	Cold to T1	0	679	1.00	1.00 (18)	OC	5718	25050	
	SRSS	0	679	1.00	1.00 (18)	OC	3258	22211	
A95	Max P	86	48	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	0	1612	0	1.00	1.00 (17)	DISP	4281	16700
	Cold to T1	0	728	1.00	1.00 (18)	OC	6019	25050	
	SRSS	0	728	1.00	1.00 (18)	OC	3496	22211	
A95	Max P	48	86	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	1632	728	0	1.00	1.00 (17)	DISP	4281	16700
	Cold to T1	0	728	1.00	1.00 (18)	OC	3496	22211	
	SRSS	0	728	1.00	1.00 (18)	OC	3496	22211	
A95	Max P	51	7	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	1722	0	0	1.00	1.00 (17)	DISP	4058	16700
	Cold to T1	869	0	1.00	1.00 (18)	OC	6427	25050	
	SRSS	869	0	1.00	1.00 (18)	OC	4173	22211	
A95	Max P	36	19	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	1219	0	0	1.00	1.00 (17)	DISP	4055	16700
	Cold to T1	757	0	1.00	1.00 (18)	OC	4551	25050	
	SRSS	757	0	1.00	1.00 (18)	OC	3635	22211	
A95	Max P	19	36	0	1.00	1.00 (18)	HOOP	8944	16700
	GR + Max P	1219	0	0	1.00	1.00 (17)	DISP	4055	16700
	Cold to T1	757	0	1.00	1.00 (18)	OC	4551	25050	
	SRSS	757	0	1.00	1.00 (18)	OC	3635	22211	

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) (Stress in psi)
In-Pt. Out-Pt. Torsion Eq. Load Code
Moment Moment In Out no. type Stress Allow.

A96 Max P 40 31 0 1080 1.00 1.00 (18) SUST 8944 16700
GR + Max P 4031 25050
Cold to T1 0 717 1.00 1.00 (18) OCC 3440 22211
SRSS 0

A97 Max P 227 67 0 206 1.00 1.00 (18) SUST 8944 16700
GR + Max P 206 25050
Cold to T1 0 236 1.00 1.00 (18) OCC 1135 22211
SRSS 0

A98 Max P 225 57 0 1675 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1675 25050
Cold to T1 0 260 1.00 1.00 (17) DISP 6253 25050
SRSS 0 1246 22211

A99 Max P 47 29 0 1012 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1012 25050
Cold to T1 0 758 1.00 1.00 (18) OCC 3638 22211
SRSS 0

A100N- Max P 25 33 0 1131 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1131 25050
Cold to T1 0 801 1.00 1.00 (17) DISP 4221 25050
SRSS 0 3847 22211

A100N+ Max P 33 25 0 1131 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1131 25050
Cold to T1 0 801 1.00 1.00 (18) OCC 3847 22211
SRSS 0

A100M Max P 46 6 0 1535 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1535 25050
Cold to T1 914 1.00 1.00 (18) OCC 4389 22211
SRSS 0

A100F- Max P 42 81 0 1385 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1385 25050
Cold to T1 749 1.00 1.00 (17) DISP 5171 25050
SRSS 0 3595 22211

A100F+ Max P 81 42 0 1385 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1385 25050
Cold to T1 0 749 1.00 1.00 (18) OCC 3595 22211
SRSS 0

ASME B31.3c (1992) CODE COMPLIANCE
(Moments in ft-lb) (Stress in psi)
In-Pt. Out-Pt. Torsion Eq. Load Code
Moment Moment In Out no. type Stress Allow.

A101 Max P 109 39 0 1304 1.00 1.00 (18) SUST 8944 16700
GR + Max P 1304 25050
Cold to T1 0 693 1.00 1.00 (18) OCC 3327 22211
SRSS 0

A102 Max P 274 37 0 869 1.00 1.00 (18) SUST 8944 16700
GR + Max P 869 25050
Cold to T1 0 1104 1.00 1.00 (18) OCC 5299 22211
SRSS 0

A103 Max P 207 7 0 189 1.00 1.00 (18) SUST 8944 16700
GR + Max P 189 25050
Cold to T1 0 294 1.00 1.00 (18) OCC 1472 22211
SRSS 0

A104 Max P 225 2 0 49 1.00 1.00 (18) SUST 8944 16700
GR + Max P 49 25050
Cold to T1 0 78 1.00 1.00 (18) OCC 376 22211
SRSS 0

A105 Max P 220 1 0 121 1.00 1.00 (18) SUST 8944 16700
GR + Max P 121 25050
Cold to T1 0 21 1.00 1.00 (17) DISP 450 25050
SRSS 0 101 22211

A106 Max P 221 0 0 34 1.00 1.00 (18) SUST 8944 16700
GR + Max P 34 25050
Cold to T1 0 6 1.00 1.00 (17) DISP 128 25050
SRSS 0 29 22211

A107 - Max P 221 0 0 17 1.00 1.00 (18) SUST 8944 16700
GR + Max P 17 25050
Cold to T1 0 3 1.00 1.00 (18) OCC 14 22211
SRSS 0

A107 + Max P 224 0 0 19 1.00 1.00 (18) SUST 8944 16700
GR + Max P 19 25050
Cold to T1 0 0 1.00 1.00 (17) DISP 80 25050
SRSS 0 2 22211

A108 Max P 215 0 0 19 1.00 1.00 (18) SUST 8944 16700
GR + Max P 19 25050
Cold to T1 0 1 1.00 1.00 (18) OCC 10 22211
SRSS 0

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F	Eq. Load	Code	Stress	Allow.	
A109	Max P	241	0	19	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	66	10	19	1.00	1.00	(17) DISP	4967	16700	
	Cold to T1	0	3	1.00	1.00	1.00	(18) OCC	258	25050	
	SRSS	0	3	1.00	1.00	1.00	(18) OCC	15	22211	
A110	Max P	146	0	19	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	245	38	19	1.00	1.00	(17) DISP	4510	16700	
	Cold to T1	0	12	1.00	1.00	1.00	(18) OCC	929	25050	
	SRSS	0	12	1.00	1.00	1.00	(18) OCC	57	22211	
A111	Max P	87	2	11	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	72	126	11	1.00	1.00	(17) DISP	4228	16700	
	Cold to T1	1	49	1.00	1.00	1.00	(18) OCC	575	25050	
	SRSS	1	49	1.00	1.00	1.00	(18) OCC	235	22211	
A112	Max P	123	3	11	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	280	233	11	1.00	1.00	(17) DISP	4399	16700	
	Cold to T1	0	83	1.00	1.00	1.00	(18) OCC	1360	25050	
	SRSS	0	83	1.00	1.00	1.00	(18) OCC	400	22211	
1112	Max P	183	5	11	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	107	293	11	1.00	1.00	(17) DISP	4600	16700	
	Cold to T1	1	231	1.00	1.00	1.00	(18) OCC	1111	22211	
	SRSS	1	231	1.00	1.00	1.00	(18) OCC	1111	22211	
1113	Max P	216	17	11	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	150	646	11	1.00	1.00	(17) DISP	4849	16700	
	Cold to T1	5	848	1.00	1.00	1.00	(18) OCC	2476	25050	
	SRSS	5	848	1.00	1.00	1.00	(18) OCC	4070	22211	
A113	Max P	35	45	3	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	55	1760	3	1.00	1.00	(17) DISP	4086	16700	
	Cold to T1	20	284	1.00	1.00	1.00	(18) OCC	6574	25050	
	SRSS	20	284	1.00	1.00	1.00	(18) OCC	1366	22211	
A114N-	Max P	20	48	3	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	52	1870	3	1.00	1.00	(17) DISP	4983	16700	
	Cold to T1	17	325	1.00	1.00	1.00	(18) OCC	1562	22211	
	SRSS	17	325	1.00	1.00	1.00	(18) OCC	1562	22211	
A114N+	Max P	48	20	3	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	1870	52	3	1.00	1.00	(17) DISP	4061	16700	
	Cold to T1	325	17	1.00	1.00	1.00	(18) OCC	6983	25050	
	SRSS	325	17	1.00	1.00	1.00	(18) OCC	1562	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE					(Stress in psi)		
		(Moments in ft-lb)				Eq. Load	Code	Stress Allow.	
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F				
A114M	Max P GR + Max P Cold to T1 SRSS	55 2122 499	13 20 1	33 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4082 16700 7923 25050 2394 22211		
A114F-	Max P GR + Max P Cold to T1 SRSS	51 1702 547	114 23 15	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4409 16700 6354 25050 2629 22211		
A114F+	Max P GR + Max P Cold to T1 SRSS	116 122 16	44 1697 547	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4409 16700 6354 25050 2629 22211		
A115	Max P GR + Max P Cold to T1 SRSS	151 117 13	40 1564 544	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4564 16700 5856 25050 2613 22211		
A116	Max P GR + Max P Cold to T1 SRSS	92 40 5	45 1751 385	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4303 16700 6541 25050 1849 22211		
A117N-	Max P GR + Max P Cold to T1 SRSS	64 35 4	48 1895 376	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4197 16700 7038 25050 1805 22211		
A117N+	Max P GR + Max P Cold to T1 SRSS	48 1895 376	64 35 4	31 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4197 16700 7038 25050 1805 22211		
A117N	Max P GR + Max P Cold to T1 SRSS	59 2307 317	14 42 3	8 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4197 16700 7038 25050 1523 22211		
A117F-	Max P GR + Max P Cold to T1 SRSS	52 2053 238	70 4 0	0 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	(3s) HOOP (1s) DISP (1s) OCC	8944 16700 4231 16700 7663 25050 1144 22211		

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				Eq. Load no. type	S.I.F.	(Stress in psi)		Code
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In Out			Eq. Load	Stress Allow.	
A117F+	Max P GR + Max P Cold to T1 SRSS	70 52 4 0	2053 238	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 4231 7663 1144	16700 16700 25050 22211	
A118	Max P GR + Max P Cold to T1 SRSS	93 49 9 1	194 223	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 4231 7663 1070	16700 16700 25050 22211	
A119	Max P GR + Max P Cold to T1 SRSS	329 29 2 0	1055 1055	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5395 3937 2785	16700 16700 25050 22211	
A120	Max P GR + Max P Cold to T1 SRSS	269 8 1 0	351 155	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5102 1309 742	16700 16700 25050 22211	
A121	Max P GR + Max P Cold to T1 SRSS	285 2 0 0	158 41	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5178 591 198	16700 16700 25050 22211	
A122	Max P GR + Max P Cold to T1 SRSS	281 0 0 0	1 42 11	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5158 153 53	16700 16700 25050 22211	
A123	Max P GR + Max P Cold to T1 SRSS	282 0 0 0	0 11 3	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5163 42 14	16700 16700 25050 22211	
A124	Max P GR + Max P Cold to T1 SRSS	281 0 0 0	0 3 1	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5162 12 4	16700 16700 25050 22211	
A125	Max P GR + Max P Cold to T1 SRSS	282 0 0 0	0 2 0	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5162 12 5	16700 16700 25050 22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				Eq. Load no. type	S.I.F.	(Stress in psi)		Code
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In Out			Eq. Load	Stress Allow.	
A125 +	Max P GR + Max P Cold to T1 SRSS	282 0 0 0	0 1 1	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5161 26 26	16700 16700 25050 22211	
A126	Max P GR + Max P Cold to T1 SRSS	281 0 0 0	0 1 1	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5100 26 5	16700 16700 25050 22211	
A127	Max P GR + Max P Cold to T1 SRSS	282 0 0 0	0 4 4	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5161 30 18	16700 16700 25050 22211	
A128	Max P GR + Max P Cold to T1 SRSS	281 0 0 0	1 15 14	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5157 61 66	16700 16700 25050 22211	
A129	Max P GR + Max P Cold to T1 SRSS	284 1 0 0	2 55 51	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5177 207 246	16700 16700 25050 22211	
A130	Max P GR + Max P Cold to T1 SRSS	272 4 0 0	8 26 192	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5114 160 922	16700 16700 25050 22211	
A131	Max P GR + Max P Cold to T1 SRSS	318 16 0 0	29 1027 720	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 5343 3836 3455	16700 16700 25050 22211	
A132	Max P GR + Max P Cold to T1 SRSS	132 63 58 1	43 2544 352	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 4513 9500 1689	16700 16700 25050 22211	
A133H-	Max P GR + Max P Cold to T1 SRSS	102 66 96 0	66 243 377	0	1.00 1.00 1.00 1.00	(18) (17) (18) (18)	HOOP SUST DISP OCC	8944 4395 1809	16700 16700 22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)				Code
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Stress	Stress	Stress	
A133M	Max P	56	108	7	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2670	165	7	1.00	1.00	(17) DISP	9986	25050	
	Cold to T1	375	37		1.00	1.00	(18) OCC	1809	22211	
A133M	Max P	69	7	63	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2890	5	63	1.00	1.00	(17) DISP	10792	25050	
	Cold to T1	483	29		1.00	1.00	(18) OCC	2325	22211	
A133F-	Max P	51	16	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2168	198	0	1.00	1.00	(17) DISP	9986	25050	
	Cold to T1	325	2		1.00	1.00	(18) OCC	2321	22211	
A133F+	Max P	16	51	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	158	2168	0	1.00	1.00	(17) DISP	8116	25050	
	Cold to T1	2	525		1.00	1.00	(18) OCC	2521	22211	
A134	Max P	37	45	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	183	1954	0	1.00	1.00	(17) DISP	4093	25050	
	Cold to T1	1	527		1.00	1.00	(18) OCC	2520	22211	
A134	Max P	46	53	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	181	1954	0	1.00	1.00	(17) DISP	7328	25050	
	Cold to T1	1	527		1.00	1.00	(18) OCC	2528	22211	
A135M-	Max P	24	59	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	158	2169	0	1.00	1.00	(17) DISP	8118	25050	
	Cold to T1	2	525		1.00	1.00	(18) OCC	2519	22211	
A135M+	Max P	59	24	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2169	158	0	1.00	1.00	(17) DISP	8118	25050	
	Cold to T1	525	2		1.00	1.00	(18) OCC	2519	22211	
A135M	Max P	76	7	63	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2890	5	63	1.00	1.00	(17) DISP	10792	25050	
	Cold to T1	483	29		1.00	1.00	(18) OCC	2322	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)				Code
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	Stress	Stress	Stress	
A135F-	Max P	77	100	7	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	2671	165	7	1.00	1.00	(17) DISP	9988	25050	
	Cold to T1	375	36		1.00	1.00	(18) OCC	1807	22211	
A135F+	Max P	107	67	0	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	96	2674	7	1.00	1.00	(17) DISP	9988	25050	
	Cold to T1	0	376		1.00	1.00	(18) OCC	1807	22211	
A136	Max P	135	64	7	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	58	2655	7	1.00	1.00	(17) DISP	9502	25050	
	Cold to T1	1	332		1.00	1.00	(18) OCC	1808	22211	
A137	Max P	318	29	7	1.00	1.00	(18) SUST	5341	16700	
	GR + Max P	16	1029	7	1.00	1.00	(17) DISP	3643	25050	
	Cold to T1	0	719		1.00	1.00	(18) OCC	3452	22211	
A138	Max P	272	8	7	1.00	1.00	(18) SUST	5115	16700	
	GR + Max P	4	207	7	1.00	1.00	(17) DISP	772	25050	
	Cold to T1	0	192		1.00	1.00	(18) OCC	921	22211	
A139	Max P	284	2	7	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	1	52	7	1.00	1.00	(17) DISP	513	25050	
	Cold to T1	0	51		1.00	1.00	(18) OCC	246	22211	
A140	Max P	281	1	7	1.00	1.00	(18) SUST	5157	16700	
	GR + Max P	0	15	7	1.00	1.00	(17) DISP	61	25050	
	Cold to T1	0	14		1.00	1.00	(18) OCC	66	22211	
A141	Max P	282	0	7	1.00	1.00	(18) SUST	5161	16700	
	GR + Max P	0	4	7	1.00	1.00	(17) DISP	30	25050	
	Cold to T1	0	4		1.00	1.00	(18) OCC	18	22211	
A142	Max P	281	0	7	1.00	1.00	(18) SUST	8944	16700	
	GR + Max P	0	1	7	1.00	1.00	(17) DISP	5150	25050	
	Cold to T1	0	1		1.00	1.00	(18) OCC	5	22211	

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)				
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F. no.	Eq. Load no.	Stress Type	Code Allow.		
A143	Max P	282	0	1	1.00	1.00	(3a)	HOOP	8944	16700
	GR + Max P	0	1	7	1.00	1.00	(18)	SUST	5163	16700
	Cold to T1	0	1	1.00	1.00	(17)	DISP	26	25050	
A143	Max P	282	0	1	1.00	1.00	(18)	OCC	2	22211
	GR + Max P	0	15	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	0	1.00	1.00	(17)	DISP	57	25050	
A144	Max P	281	0	1	1.00	1.00	(18)	OCC	2	22211
	GR + Max P	0	31	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	0	1.00	1.00	(17)	DISP	114	25050	
A145	Max P	282	0	2	1.00	1.00	(18)	OCC	3	22211
	GR + Max P	0	107	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	0	1.00	1.00	(17)	DISP	401	25050	
A146	Max P	281	1	1	1.00	1.00	(18)	OCC	11	22211
	GR + Max P	0	101	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	9	0	1.00	1.00	(17)	DISP	379	25050
A147	Max P	285	2	2	1.00	1.00	(18)	OCC	42	22211
	GR + Max P	0	102	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	33	0	1.00	1.00	(17)	DISP	379	25050
A148	Max P	269	9	9	1.00	1.00	(18)	OCC	156	22211
	GR + Max P	0	307	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	122	0	1.00	1.00	(17)	DISP	5101	16700
A149	Max P	330	33	33	1.00	1.00	(18)	OCC	1145	25050
	GR + Max P	0	1130	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	458	0	1.00	1.00	(17)	DISP	4218	25050
A150	Max P	89	43	43	1.00	1.00	(18)	OCC	2198	22211
	GR + Max P	0	1549	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	298	0	1.00	1.00	(17)	DISP	4287	16700
A150	Max P	89	43	43	1.00	1.00	(18)	OCC	1429	22211
	GR + Max P	0	1549	0	1.00	1.00	(18)	SUST	8944	16700
	Cold to T1	0	298	0	1.00	1.00	(17)	DISP	5783	25050

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion	S.I.F.	Eq. Load	no. type	Stress	Code Allow.
A151N-	Max P	63	46				(3a) HOOP	8944	16700
	GR + Max P	0	1646	1.00	1.00 (18)	SUST	4187	16700	
	Cold to T1	0	312	0	1.00 1.00 (17) DISP	6144	25050		
A151N+	Max P	46	63				(3a) HOOP	8944	16700
	GR + Max P	1646	0	1.00	1.00 (18)	SUST	4187	16700	
	Cold to T1	312	0	0	1.00 1.00 (17) DISP	6144	25050		
A151H	Max P	53	7				(3a) HOOP	8944	16700
	GR + Max P	1875	0	1.00	1.00 (18)	SUST	4064	16700	
	Cold to T1	350	0	0	1.00 1.00 (17) DISP	6999	25050		
A151F-	Max P	42	42				(3a) HOOP	8944	16700
	GR + Max P	1509	0	1.00	1.00 (18)	SUST	4097	16700	
	Cold to T1	317	0	0	1.00 1.00 (17) DISP	5634	25050		
A151F+	Max P	42	42				(3a) HOOP	8944	16700
	GR + Max P	0	1509	1.00	1.00 (18)	SUST	4097	16700	
	Cold to T1	0	317	0	1.00 1.00 (17) DISP	5634	25050		
A152	Max P	67	39				(3a) HOOP	8944	16700
	GR + Max P	0	1332	1.00	1.00 (18)	SUST	4181	16700	
	Cold to T1	0	307	0	1.00 1.00 (17) DISP	5197	25050		
A153	Max P	288	49				(3a) HOOP	8944	16700
	GR + Max P	0	1673	1.00	1.00 (18)	SUST	5212	16700	
	Cold to T1	0	83	0	1.00 1.00 (17) DISP	6246	25050		
A154	Max P	88	18				(3a) HOOP	8944	16700
	GR + Max P	0	631	1.00	1.00 (18)	SUST	4242	16700	
	Cold to T1	0	271	0	1.00 1.00 (17) DISP	2355	25050		
A155	Max P	275	21				(3a) HOOP	8944	16700
	GR + Max P	0	651	1.00	1.00 (18)	SUST	4134	16700	
	Cold to T1	0	630	0	1.00 1.00 (17) DISP	2357	25050		
	Max P						(3a) HOOP	8944	16700
	GR + Max P						(3a) HOOP	8944	16700
	Cold to T1						(3a) HOOP	8944	16700

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F	Eq. Load	Code	psi	Code
		Moment	Moment	Moment	In	Out	no. type	Stress	Allow.
A156	Max P	216	19	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P				1.00	1.00	(18) SUST	4852	16700
	Cold to T1		694	0	1.00	1.00	(17) DISP	2589	25050
	SRSS	0	904		1.00	1.00	(18) OCC	4341	22211
A157N-	Max P	172	20	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		741	0	1.00	1.00	(18) SUST	4641	16700
	Cold to T1		945	0	1.00	1.00	(17) DISP	2766	25050
	SRSS	0	945		1.00	1.00	(18) OCC	4558	22211
A157N+	Max P	20	172	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		741	0	1.00	1.00	(18) SUST	4641	16700
	Cold to T1		945	0	1.00	1.00	(17) DISP	2766	25050
	SRSS	0	945		1.00	1.00	(18) OCC	4558	22211
A157M	Max P	21	10	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		776	0	1.00	1.00	(18) SUST	3924	16700
	Cold to T1		975	0	1.00	1.00	(17) DISP	2896	25050
	SRSS	0	975		1.00	1.00	(18) OCC	4680	22211
A157F-	Max P	11	70	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		410	0	1.00	1.00	(18) SUST	4135	16700
	Cold to T1		671	0	1.00	1.00	(17) DISP	1337	25050
	SRSS	0	671		1.00	1.00	(18) OCC	3219	22211
A157F+	Max P	70	11	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		410	0	1.00	1.00	(18) SUST	4135	16700
	Cold to T1		671	0	1.00	1.00	(17) DISP	1337	25050
	SRSS	0	671		1.00	1.00	(18) OCC	3219	22211
A159	Max P	59	8	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		256	0	1.00	1.00	(18) SUST	4097	16700
	Cold to T1		428	0	1.00	1.00	(17) DISP	956	25050
	SRSS	0	428		1.00	1.00	(18) OCC	2052	22211
A160N-	Max P	35	11	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		353	0	1.00	1.00	(18) SUST	3988	16700
	Cold to T1		464	0	1.00	1.00	(17) DISP	1317	25050
	SRSS	0	464		1.00	1.00	(18) OCC	2226	22211
A160N+	Max P	11	35	0	1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P		353	0	1.00	1.00	(18) SUST	3988	16700
	Cold to T1		464	0	1.00	1.00	(17) DISP	1317	25050
	SRSS	0	464		1.00	1.00	(18) OCC	2226	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE (Moments in ft-lb)				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F	Eq. Load	Code	Stress	Allow.
A160N	Max P	21	20		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	719			1.00	1.00	(18) SUST	3953	16700
	Cold to T1				1.00	1.00	(17) DISP	2683	25050
	SRSS	717	0		1.00	1.00	(18) OCC	3442	22211
A160F-	Max P	20	52		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	684	0		1.00	1.00	(18) SUST	4077	16700
	Cold to T1	697	0		1.00	1.00	(17) DISP	2553	25050
	SRSS				1.00	1.00	(18) OCC	3346	22211
A160F+	Max P	52	20		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	684		1.00	1.00	(18) SUST	4077	16700
	Cold to T1	0	697		1.00	1.00	(17) DISP	2553	25050
	SRSS	0			1.00	1.00	(18) OCC	3346	22211
A161	Max P	78	18		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	637		1.00	1.00	(18) SUST	4196	16700
	Cold to T1	0			1.00	1.00	(17) DISP	2376	25050
	SRSS	0	657		1.00	1.00	(18) OCC	3151	22211
A162	Max P	235	10		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	310		1.00	1.00	(18) SUST	4939	16700
	Cold to T1	0			1.00	1.00	(17) DISP	1158	25050
	SRSS	0	557		1.00	1.00	(18) OCC	2674	22211
A163 -	Max P	315	5		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	125		1.00	1.00	(18) SUST	5325	16700
	Cold to T1	0	277		1.00	1.00	(17) DISP	377	25050
	SRSS	0			1.00	1.00	(18) OCC	1332	22211
A163 +	Max P	335	19		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	253		1.00	1.00	(18) SUST	5418	16700
	Cold to T1	0			1.00	1.00	(17) DISP	944	25050
	SRSS	0			1.00	1.00	(18) OCC	0	22211
A164	Max P	194	38		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0			1.00	1.00	(18) SUST	4756	16700
	Cold to T1	0			1.00	1.00	(17) DISP	2677	25050
	SRSS	0	771		1.00	1.00	(18) OCC	0	22211
A165N-	Max P	107	2		1.00	1.00	(3a) HOOP	8944	16700
	GR + Max P	0	353		1.00	1.00	(18) SUST	4318	16700
	Cold to T1	0			1.00	1.00	(17) DISP	1242	25050
	SRSS	0			1.00	1.00	(18) OCC	0	22211

Point name	Load combination	ASME B31.3c (1992) CODE COMPLIANCE				(Stress in psi)			
		In-Pl. Moment	Out-Pl. Moment	S.I.F. in	Eq. Load no. type	Code Stress Allow.			
A165M+	Max P	2	107	1.00	1.00 (18) HOOP	8944	16700		
	GR + Max P	333	0	0	1.00 1.00 (17) DISP	4318	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	1242	25050		
	SRSS	0	0			0	22211		
A165M	Max P	63	13	1.00	1.00 (3a) HOOP	8944	16700		
	GR + Max P	195	0	0	1.00 1.00 (17) DISP	4318	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	7295	25050		
	SRSS	0	0			0	22211		
A165F-	Max P	50	11	1.00	1.00 (3a) HOOP	8944	16700		
	GR + Max P	1411	0	0	1.00 1.00 (17) DISP	4044	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	5267	25050		
	SRSS	0	0			0	22211		
A165F+	Max P	11	50	1.00	1.00 (3a) HOOP	8944	16700		
	GR + Max P	0	1411	0	1.00 1.00 (17) DISP	4044	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	5267	25050		
	SRSS	0	0			0	22211		
A166	Max P	5	40	1.00	1.00 (3a) HOOP	8944	16700		
	GR + Max P	1102	0	0	1.00 1.00 (17) DISP	3995	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	4113	25050		
	SRSS	0	0			0	22211		
A167	Max P	81	83	1.00	1.00 (3a) HOOP	8944	16700		
	GR + Max P	0	2738	0	1.00 1.00 (17) DISP	4354	16700		
	Cold to T1	0	0	1.00	1.00 (18) OCC	10221	25050		
	SRSS	0	0			0	22211		

*** Segment A end ***

SYSTEM SUMMARY

Maximum displacements (in)

Maximum X : -1.882
Maximum Y : 0.908
Maximum Z : 1.708
Max. total: 2.536

Point: A43 M
Point: A43 M
Point: A45 M
Point: A45 M

Load Comb.: SUM
Load Comb.: TOTAL
Load Comb.: TOTAL
Load Comb.: TOTAL

Maximum rotations (deg)

Maximum X : 0.268
Maximum Y : 1.259
Maximum Z : 1.565
Max. total: 1.882

Point: A44
Point: A44
Point: A46
Point: A46

Load Comb.: TOTAL
Load Comb.: TOTAL
Load Comb.: TOTAL
Load Comb.: TOTAL

Maximum restraint forces(lb)

Maximum X : -828
Maximum Y : 532
Maximum Z : 1057
Max. total: 1174

Point: A45
Point: A41
Point: A164
Point: A167

Load Comb.: SUM
Load Comb.: TOTAL
Load Comb.: TOTAL
Load Comb.: TOTAL

Maximum restraint moments(ft-lb)

Maximum X : 88
Maximum Y : 2820
Maximum Z : 362
Max. total: 2822

Point: A39
Point: A167
Point: A39
Point: A167

Load Comb.: TOTAL
Load Comb.: SUM
Load Comb.: TOTAL
Load Comb.: SUM

SYSTEM SUMMARY

Maximum sustained stress

Point : A41
Stress : 9880 psi
Allowable psi : 16700
Ratio : 0.59
Load combination : GR + Max P

Maximum displacement stress

Point : A43 M
Stress : 16759 psi
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

Maximum occasional stress

Point : A102
Stress : 5299 psi
Allowable psi : 22211
Ratio : 0.24
Load combination : SRSS

Maximum hoop stress

Point : A00
Stress : 8944 psi
Allowable psi : 16700
Ratio : 0.54
Load combination : Max P

Maximum sustained stress ratio

Point : A41
Stress : 9880 psi
Allowable psi : 16700
Ratio : 0.59
Load combination : GR + Max P

Maximum displacement stress ratio

Point : A43 M
Stress : 16759 psi
Allowable psi : 25050
Ratio : 0.67
Load combination : Cold to T1

SYSTEM SUMMARY

Maximum occasional stress ratio

Point : A102
Stress : 5299 psi
Allowable psi : 22211
Ratio : 0.24
Load combination : SRSS

Maximum hoop stress ratio

Point : A00
Stress : 8944 psi
Allowable psi : 16700
Ratio : 0.54
Load combination : Max P

*** The system satisfies ASME B31.3 code requirements ***
*** for the selected options ***

Max occasional stress

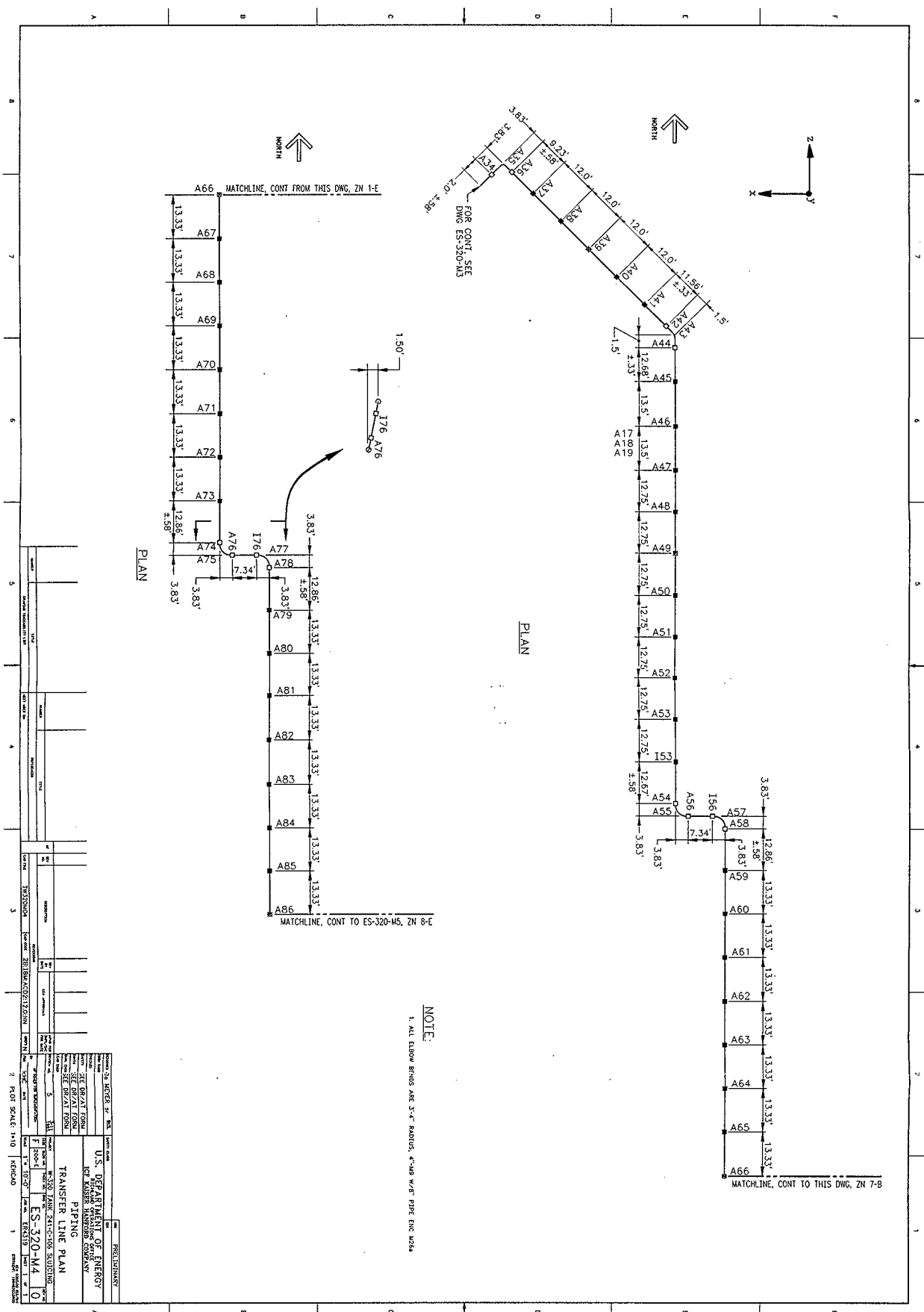
9280 psi + 5299 psi = 15179 psi

Ratio = 0.62

Rev. 3
KH 11/13/97

APPENDIX D

PIPING SKETCHES



NOTES:

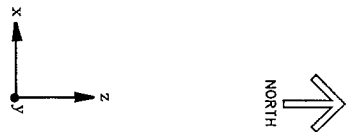
1. ALL ELBOW FITTINGS ARE 3'-4" RADIUS, 4"-M9 W/8" PIPE ENC M26a

[illegible]



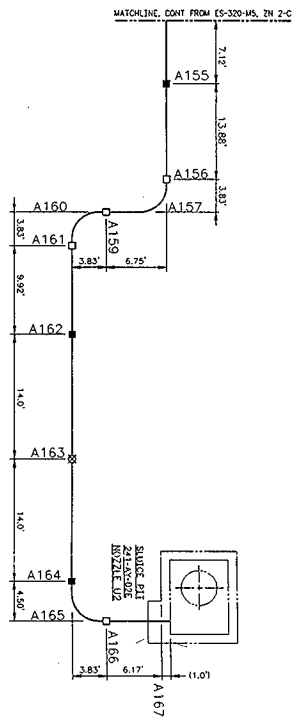
1. ALL ELBOW BEND ARE 3'-4" RADIUS, 4" M9 W/8" PIPE ENC M26a

HNF-2472, Rev. 0



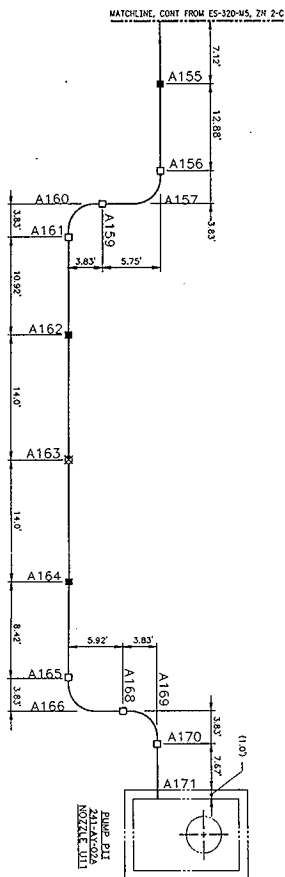
SUPERNATE PIPING FROM C106 TO A102

PLAN



SLURRY PIPING FROM C106 TO A102

PLAN



NOTE:

1. ALL ELBOW BENDS ARE 3'-4" RADIUS, 4" M9 W/8" PIPE END M28.

NO.	DESCRIPTION	QTY	UNIT
1	3" SCH 40S	100	FT
2	4" SCH 40S	100	FT
3	6" SCH 40S	100	FT
4	8" SCH 40S	100	FT
5	10" SCH 40S	100	FT
6	12" SCH 40S	100	FT
7	14" SCH 40S	100	FT
8	16" SCH 40S	100	FT
9	18" SCH 40S	100	FT
10	20" SCH 40S	100	FT
11	22" SCH 40S	100	FT
12	24" SCH 40S	100	FT
13	26" SCH 40S	100	FT
14	28" SCH 40S	100	FT
15	30" SCH 40S	100	FT
16	32" SCH 40S	100	FT
17	34" SCH 40S	100	FT
18	36" SCH 40S	100	FT
19	38" SCH 40S	100	FT
20	40" SCH 40S	100	FT
21	42" SCH 40S	100	FT
22	44" SCH 40S	100	FT
23	46" SCH 40S	100	FT
24	48" SCH 40S	100	FT
25	50" SCH 40S	100	FT
26	52" SCH 40S	100	FT
27	54" SCH 40S	100	FT
28	56" SCH 40S	100	FT
29	58" SCH 40S	100	FT
30	60" SCH 40S	100	FT

U.S. DEPARTMENT OF ENERGY NATIONAL LABORATORY TANK 241-A1-102 PIPING PLAN ES-320-M6 10/1/79	U.S. DEPARTMENT OF ENERGY NATIONAL LABORATORY TANK 241-A1-102 PIPING PLAN ES-320-M6 10/1/79

APPENDIX E

OFFICE MEMO

[20] From: C D (Dean) Jones at ~WHC61 3/28/94 2:28PM (864 bytes: 9 ln)
To: Mohammed M Ahmed at ~KEH8, Dianna L Stone at ~KEH13, Donald J Jr
Macisaac,

Danny L Evans at ~KEH10, C D (Dean) Jones
Subject: DESIGN PRESSURE FOR SLURRY AND SLUICE PUMPS
----- Message Contents

WE WILL USE 750' SHUTOFF HEAD AS THE INTERNAL DESIGN
PRESSURE FOR PURPOSES OF STRESS ANALYSIS. WHILE IT IS TRUE
THAT THE PRIMARY PIPE WOULD EXPERIENCE A PRESSURE OF 1.5
TIMES THIS DURING TESTING, THERE WOULD BE NO OTHER STRESSES
ENCOUNTERED AT THAT TIME AND THE PRESSURE WOULD BE BOTH
INTERNAL AND EXTERNAL. YOU MIGHT RUN A SINGLE CASE OR DO A
HAND CALC FOR THE EXTERNAL TEST PRESSURE TO ASSURE DAN THAT
THE PIPE WILL TAKE IT. AND LET ME SAY, "IT'S BEEN GOOD
TYPING TO YOU".

DISTRIBUTION SHEET

To	From	Page 1 of 1			
Distribution	JW Bailey	Date 23 July 1998			
Project Title/Work Order		EDT No. 622230			
Project W-320 Tank 106-C, HNF-2472, Piping Calculations, Vol. 2		ECN No. n/a			
Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
JW Bailey	S2-48				
W-320 Project Files	RI-29				