

Sta. 4
MAY 09 1997

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 619143

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8. Originator Remarks: ETN-97-011 This document provides a record of the independent design review that was conducted for Core Sampler Truck #1 modifications to comply with Standing Order		9. Equip./Component No.: N/A
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1	HNF-SD-WM-DRR-064		0	Independent Design Review Report for Truck # 1 Modifications for Flammable Gas Tanks	N/A	1	1	

16. KEY					
Approval Designator (F)		Reason for Transmittal (G)			Disposition (H) & (I)
E, S, O, 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
3		Design Authority GP Janicek		S7-12		3		SESC Mgr. CE Hanson		S7-12	
1	1	Design Agent GW Wilson	<i>GW Wilson</i>	2/1/97	S7-12	1	1	Prog Mgr. RM Boger	<i>RM Boger</i>	5/8/97	S7-12
1	1	Cog.Eng. RD Freeman	<i>RD Freeman</i>	4/1/97	S7-12	3		BR Johns		S7-12	
1	1	Cog. Mgr. Schofield	<i>JM Schofield</i>	4/23/97	S7-12	3		PR Deichelbohrer		S7-12	
3		QA ML McElroy		S7-07		1	1	JC Ackers	<i>JC Ackers</i>	4/2/97	S7-12
3		Safety JA Ranschau		S7-07		3		AP Mousse		S7-12	
		Env.									

18. GW Wilson Signature of EDT Originator Date	19. RM Boger Authorized Representative Date for Receiving Organization	20. RM Boger Design Authority/ Cognizant Manager Date	21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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INDEPENDENT DESIGN REVIEW REPORT FOR TRUCK # 1 MODIFICATIONS FOR FLAMMABLE GAS TANKS

GW Wilson

SGN Eurisys Services Corp, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

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Key Words: CORE, SAMPLE, TRUCK # 1, FLAMMABLE GAS, RLU, Z PURGE

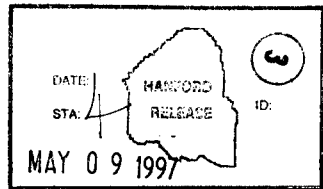
Abstract: This document records the independent design review that was conducted for Core Sampler Truck #1 modifications to comply with standing order.

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Kenn J. Briz
Release Approval

5/9/97
Date



Approved for Public Release

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1.0 SCOPE

This report documents the completion of the independent design review for modifications to the Push Mode Core Sample (PMST), Truck # 1, to comply with East and West Tank Farms Standing Orders 97-01, Compensatory Actions For Open Discovery Unreviewed Safety Questions (USQs). The PMST modifications are required to support push mode core sampling in waste tanks requiring flammable gas controls. This review includes the Engineering Change Notices (ECNs) for existing drawings which are listed in section 6.0.

This document and the independent design review are in support of design modifications to PMST used by Characterization Project Operations (CPO). The modifications are required to allow continued sampling operations in any tanks with flammable gas controls. The objective of this review was to provide a independent design verification consisting of a systematic overall review and evaluation of the modifications. Design verification was performed to insure equipment function, personnel safety, and compliance with WHC-CM-6-1, Standard Engineering Practices. Acceptance of the design is required prior to operational use on any waste tanks requiring flammable gas controls.

2.0 SUMMARY

The East and West Tank Farm Standing Order 97-01 requires that the PMST be modified to include purging of the enclosed space underneath the shielded receiver weather cover per National Fire Protection Association (NFPA) 496, Purged and Pressurized Enclosures for Electrical Equipment. The Standing Order also requires that the PMST also be modified by replacing the existing electrical remote latch (RLU) unit with a mechanical remote latch unit. As the mechanical remote latch unit was exactly like the RLU installed on the Rotary Mode Core Sampler Trucks (RMCST) and the design for the RMCST went through formal design review, replacing the RLU was done utilizing informal design verification and was completed per work package ES-97-0028. As the weather cover purge was similar to the design for the RMCSTs, this design was reviewed using the independent review method with multiple independent reviewers. A function design criteria (WHC-SD-WM-FDC-048, Functional Design Criteria for Core Sampling in Flammable Gas Watch List Tanks) provided the criteria for the modifications.

The review consisted of distributing the design review package to the reviewers and collecting and dispositioning the RCR comments. The review package included the ECNs for review, the Design Compliance Matrix, copies of all drawings affected, and copies of outstanding ECNs against these drawings. A final meeting was held

to ensure that all reviewers were aware of the changes to ECNs from incorporation of RCR comments.

3.0 DESIGN DESCRIPTION

The existing PMST is designed to sample liquid, sludge, and/or salt cake in waste tanks using the universal sampler. During sampling operations, the sampler is retrieved by connecting the shielded receiver to the drill string. The RLU is then used to retrieve the sampler and reinsert an empty sampler. The shielded receiver assembly includes of a sampler hoist box which uses electrical components for power and instrumentation which are located under the shielded receiver weather cover.

To maintain operational and procedural consistency, the decision was made to design the PMST modifications using a type Z-pressurization system for the weather cover that is similar to what is used on the RMCST.

The type Z-pressurization system which meets requirements of NFPA 496 will consist of a nitrogen purge of approximately 2 SCFM that will be supplied by the nitrogen trailer. The nitrogen will exhaust through two HEPA filters which are located on the bottom of the shielded receiver base plate. The HEPA filters will provide the back pressure to assure compliance with the requirement for a minimum of 0.1 inches water positive pressure in the weather cover. The positive pressure is monitored by two pressure switches which are also located under the shielded receiver base plate. These switches will provide an alarm signal which will activate both alarm lights and an audible alarm at the control console.

The PMST shielded receiver sampler hoist box is different from the RMCSTs in that the sampler hoist box load cell is located outside the sampler hoist box and therefore does not require intrinsic safety barriers for the load cell. The Z-pressurization system for the weather cover enclosed space will provide the required protection.

The pre-modification PMST sampler hoist box is vented to the weather cover through a High Efficiency Particulate Air (HEPA) filter. As part of these modifications, this vent was relocated to allow the weather cover enclosed space to be reclassified as a Class 1, Div 2, Group B space and allow the use of a Z-pressurization system per NFPA 496. The vent is relocated to outside the weather cover with at least 36 leak diameters away from any ignition source.

Also, as part of these modifications, administrative controls will be required in the operating procedures to provide direction for

equipment start-up, ie. sniffing requirements, and for manual shutdown of equipment after alarm activation.

4.0 LISTING OF REVIEW MATERIALS

The following ECNs were reviewed and approved as part of the design review:

ECN 636559

Relocates shielded receiver sampler hoist box vent

ECN 636566

Modifies shielded receiver base plate to provide connection for nitrogen inlet, HEPA outlets and pressure switch connection

ECN 636567

Modifies PMST to install connection for nitrogen trailer and required type Z-pressurization system piping

ECN 639172

Modifies PMST electrical drawing to install alarms and relays

5.0 DESIGN COMPLIANCE MATRIX

The design compliance matrix provided as an attachment is Section 10.0 was used as a tool for determining that the design met applicable requirements. This design compliance matrix is based on the requirements from the functional design criteria, standing order, and NFPA 496.

6.0 REVIEW COMMENT RECORDS

The following table is a listing of all RCR's received during the independent design review. All RCR's were dispositioned and signed off as closed. Copies of all dispositioned RCRs are included as attachments in section 10.0 of this report.

REVIEWER/DATE/NUMBER	RESP. ENG.	RCR STATUS
McElroy/0421/CP97-008	GW Wilson	closed/signed
McElroy/0421/CP97-009	GW Wilson	closed/signed
McElroy/0421/CP97-010	GW Wilson	closed/signed
McElroy/0421/CP97-011	JC Akers	closed/signed
Freeman/0424/TF-97-0296	GW Wilson	closed/signed
Freeman/0424/TF-97-0296	GW Wilson	closed/signed
Freeman/0424/TF-97-0296	GW Wilson	closed/signed
Freeman/0424/TF-97-0296	JC Akers	closed/signed
Ranschau/0424/UNNUMBERED	Wilson/Akers	closed/signed
Janicek/0421/GPJ-970320	Wilson/Akers	closed/signed
Deichelbohrer/0421/.1	GW Wilson	closed/signed
Johns/0421/1	JC Akers	closed/signed

7.0 FGEAB REVIEW

As part of this review, a presentation of these design modification was made to the Flammable Gas Equipment Advisory Board (FGEAB). Their review included reviewing the design for compliance with ignition controls as defined by standing orders. A copy of their report, FGEAB-97-032, is included in Section 10.0

8.0 CONCLUSIONS AND OPEN ITEMS

With the approval of this report, the independent review for the PMST modifications for complying with standing orders is completed. The following items were noted during the design review. These items are scheduled to be completed as part of the normal course of business for Acceptance for Beneficial Use (ABU) completion and are not action items for the design review. Therefore these items are NOT considered to be "open items" as described in WHC-CM-6-1, EP 4.1. The Interim classifications of Safety Significant (SS) has been assigned to the Pressure Switches (for Z purge) and Safety Class (SC) to the mechanical Remote Latch Unit (RLU) per WHC-IP-0842, TWRS Administration, Volume IV Engineering, Section 5.9, Identification of Safety Structures, Systems, and Components, Rev. 0a. The Safety Equipment List (SEL) for the PMST, WHC-SD-WM-SEL-023, Safety Classification of Special Equipment for core Sampling Hydrogen Gas and FeCN Watch List Tanks, has been updated (ECN 639152) with the new safety designated equipment.

Remaining Items:

- Operating procedure revision required
- New calibration procedure required
- Safety classification criteria needs to be documented
- SEL revision will be required
- ATP/OTP testing required
- ABU completion/approval required

The conclusion reached by the independent review is that the design of the PMST modifications is acceptable.

9.0 REFERENCES

1. WHC-IP-0842, TWRS Administration
2. WHC-SD-WM-6-1, Standard Engineering Practices
3. HNF-SD-WM-ETP-221, Engineering Task Plan For Modifying Core Sampler Truck # 1 & 2 for Operation in Flammable Gas Tank
4. WHC-SD-WM-FDC-048, Functional Design Criteria for Core Sampling in Flammable Gas Watch List Tanks
5. NFPA 496, Purged and Pressurized Enclosures for Electrical Equipment, 1993
6. East and West Tank Farms Standing Order 97-01, Compensatory Actions for Open Discovery Unreviewed Safety Questions (USQs),

(Previously East Tank Farms Standing Order 96-36, Compensatory Actions for Open Discovery Unreviewed Safety Questions (USQs) & West Tank Farms Standing Order 96-34, Compensatory Actions for Open Discovery Unreviewed Safety Questions (USQs))

10.0 DOCUMENTATION

The following items are provided as attachments to this report:

1. Design Compliance Matrix
2. Copies of RCR's
3. FGEAB Report
4. Final Review Meeting Minutes
5. Letter/fax from Scott (for use of filters with backwards flow, see Ranshau RCR, Item # 2)

ATTACHMENT 1 - Design Compliance Matrix

See the following pages.

Sheet1

DESIGN COMPLIANCE MATRIX - TRUCK #1 FLAMMABLE GAS MODES						
Item #	REQUIREMENTS		SOLUTION			Verified By?
	Class ?	Criteria	Source	Notes/Assumptions/Implications	Design Attribute	Engineering Evaluation Description
enter item no.	enter SC, SS, or, GS	enter functional or design criteria exactly as stated in the requirements source document.	enter source doc.	enter all additional information which amplifies, qualifies, justifies,...etc. the criteria statement.	describe the manner in which the design purports to fulfill the criteria statement - be as specific as possible.	provide discussion on method, evidence, reasoning used, ...etc., to verify that the design complies with requirements - be specific - include any qualifications, if appropriate.
1	N/A	Energized electrical equipment that can come into contact with flammable gases shall be protected in accordance with NFPA 496 for use in Class 1, Div 1, Group B as defined by NEC, Article 501.	FDC-048	Equipment in the Drill string, grapple and sampler hoist box are required to meet this criteria	Mechanical RLU has been installed in Truck #1. Truck #1 has load cell, electrical equipment outside of Sampler Hoist Box under weather cover. Truck #1 Grapple hoist does not have any internal electrical equipment.	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.
1.2	SC, (INT, ERM)	The RLU will be modified for use in flammable gas	FDC-048 & SO 97-01	Design Complies	Mech RLU installed per WP ES-97-0028 in Jan 1997	Design meets requirements as required by FDC-048 and Standing Order 97-01.
1.3	N/A	The Grapple Hoist load cell shall be protected by using an intrinsic safety barrier	FDC-048	Truck 1 grapple hoist assy does not have a load cell therefore requirement DOES NOT APPLY	N/A	N/A
2	GS	Electrical equipment that can, under abnormal conditions, come into contact with flammable gases shall be protected in accordance with Standing Order 97-01 and NFPA 496 for use in Class 1, Div 2, Group B as defined by NEC, Article 501.	FDC-048	The only space affected by this requirement is underneath the shielded receiver weather cover which has numerous and varied types of electrical equipment.	Sampler hoist box vent to be moved outside of weather cover to reclassify space. Z-purge system that complies to NFPA 496 to be installed with 2 CFM flow under weather cover	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.

Page 1

Sheet1

DESIGN COMPLIANCE MATRIX - TRUCK # 1 FLAMMABLE GAS MODES						
Item #	REQUIREMENTS			SOLUTION		Verified By?
	Class ?	Criteria	Source	Notes/Assumptions/Implications	Design Attribute	Config, Control Ref.
2.1	SS, (INT-ERIM)	The protected enclosure shall be constantly maintained at a positive pressure of at least 25 Pa (0.1 in. water) during operation	NFPA 496 & SO 97-01	Shielded receiver weather cover Z- purge system pressure will be monitored by two pressure switches and alarms which will be set to alarm at less than 0.5 in water	Two pressure switches installed on underside of shielded receiver base to monitor pressure and provide alarm signal.	H-2-91701
2.2	GS	An alarm shall be provided to indicate failure of protective gas supply to maintain required pressure	NFPA 496 & SO 97-01	Shielded receiver weather cover Z- purge system will supply approximately 2 SCFM nitrogen to weather cover enclosed space and pressure will be monitored by two pressure switches connected to alarms	An alarm light and audible alarm (80 Db) with acknowledge button will be installed in control console.	H-2-91420 H-2-91421 H-2-91422
2.2.1	GS	The alarm and/or indicator shall meet requirements of NFPA 496 for type Z Pressurization	NFPA 496 & SO 97-01	Alarm will only need to be attended when shielded receiver is connected to drill string	The alarm and indicator will be installed in the control console which is where the operator is during sample retrieval. The alarm signal comes from pressure switches which monitor positive pressure under the shielded receiver weather cover.	H-2-91421 H-2-91422
2.2.2	GS	All controls and displays shall be located where they can be clearly seen and easily reached, all lights shall be visible in bright or hazy sunlight.	FDC-048	Control console is used for normal operation of sampler hoist and is easily accessible. Lights for shielded receiver weather cover Z Pressurization will be one green light for pressurization OK and one red light to indicate pressurization failure.	Lights and controls will be located in control console and will be equivalent to existing lights.	H-2-91421

Sheet1

DESIGN COMPLIANCE MATRIX - TRUCK # 1 FLAMMABLE GAS MODES								
REQUIREMENTS			SOLUTION			VERIFICATION		
Item #	Class ?	Criteria	Source	Notes/Assumptions/Implications	Design Attribute	Config. Control Ref.	Engineering Evaluation Description	Verified By?
2.3	GS	Instrument quality air, nitrogen, or other nonflammable gas shall be considered acceptable as a protective gas	NFPA 496 & SO 97-01	Design complies	Truck # 1 to be modified with addition of connection for the existing nitrogen purge trailers	H-2-91701	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.	PRD, BRJ
2.4	GS	A permanent label shall be mounted on the protected enclosure in prominent location to say : WARNING - PRESSURIZED ENCLOSURE	NFPA 496 & SO 97-01	Design Complies	Truck # 1 shielded receiver weather cover will be labeled per requirements	H-2-91651	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.	PRD
3	N/A	Motors shall not be energized until at least 10 volumes have passed through enclosure while maintaining internal pressure.	NFPA 496 & SO 97-01	EXCEPTION: Equipment shall be permitted to be energized immediately if required pressure exists and the atmosphere within the enclosure is known to be nonflammable (Quote from NFPA 496)	Normal operation only provides potential for flammable gas during sampler retrieval operations. Normal condition during all other operations results in known non flammable gas atmosphere under shielded receiver weather cover	TO-060-503	The procedure is being revised to require "sniffing" of enclosed space before initial start-up.	RDF
4	N/A	All ignition sources not normally in contact with waste or waste gases shall be placed at least 36 leak diameters from open leak sources	FDC-048	Requires that sampler hoist vent be located away from engine exhaust pipe	Sampler hoist vent to be located 36 inches from engine exhaust pipe	H-2-91651	Design meets requirements in FDC-048.	PRD
5	N/A	Acceptable safe shutdown of equipment not located in Class 1, Div 1 may be by manual actions	FDC-048, NFPA 496 & SO 97-01	Design Complies	Manual shutdown of sampler hoist electrical equipment will be addressed in operating procedure and will be verified at ASU signoff	H-2-91421 H-2-91422 H-2-91420 TO-060-503	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.	BRJ
6	N/A	Safe shutdown configuration shall prevent hydrogen accumulation in the piping system. All purge gas shall be routed back to the waste tank, or through approved filtration	FDC-048	During normal shutdown shielded receiver tube is disconnected from drill string therefore is not classified space.	Z-purge gases are exhausted through two assault mask HEPA filters	H-2-91701	Design meets requirements in FDC-048.	PRD

Sheet1

DESIGN COMPLIANCE MATRIX - TRUCK #1 FLAMMABLE GAS MODS						
Item #	REQUIREMENTS			SOLUTION		VERIFICATION
	Class ?	Criteria	Source	Notes/Assumptions/Implications	Design Attribute	Engineering Evaluation Description
7	N/A	The shielded receiver weather cover shall be modified to prevent hydrogen accumulation. Options include cover removal, venting provisions, and/or Z-purge	FDC-048, NFPA 496	Design Complies	Z-purge system being installed for shielded receiver weather cover that meets requirements of NFPA 496. Sampler hoist vent is relocation to remove potential flammable gases from the shielded receiver weather cover	Design meets requirements for NFPA 496, Type Z Pressurization as required by FDC-048 and Standing Order 97-01.
8	N/A	The load cell instrument associated with the shielded receiver shall be protected using intrinsic safety barriers	FDC-048	Truck 1 sampler hoist load cell is located outside sampler hoist box under shielded receiver weather cover which is a Class 1, Div 2 space	Z-purge system being installed for shielded receiver weather cover	Design meets requirements in FDC-048.
9	N/A	The acceptability of design to include features of performance alternatives (i.e., redundancy, by-pass administrative controls) shall be evaluated by considering single active failures of components.	FDC-048	Positive pressure is provided by Z-purge system which supplies approximately 2 SCFM nitrogen to shielded receiver weather cover and is exhausted through two mask HEPA filters which will provide required back pressure	Redundant pressure switches and alarms are used to ensure that positive pressure is maintained under shielded receiver weather cover	Design meets requirements in FDC-048.
10	N/A	The OSS shall be designed to provide for confinement barriers and air filtration systems for contamination control	FDC-048	Design Complies	Z-purge gas is exhausted through two assault mask HEPA filters	Design meets requirements in FDC-048.
11	N/A	The system shall ensure that a single failure does not result in the loss of capability of a safety class system to perform its safety function.	FDC-048	Pressure switch failure, cable failure, relay failure or power failure to pressure switches will cause alarms	Redundant pressure switches and alarms are provided to ensure that the Z-purge system functions	Design meets requirements in FDC-048.
12	N/A	All aluminum potentially in contact with tank waste shall be eliminated.	FDC-048	No aluminum parts inside sampler hoist box, grapple box, or RLU	No aluminum parts	Design meets requirements in FDC-048.

Sheet1

DESIGN COMPLIANCE MATRIX - TRUCK #1 FLAMMABLE GAS MODS							
Item #	REQUIREMENTS		SOLUTION			VERIFICATION	
	Class ?	Criteria	Source	Notes/Assumptions/Implications	Design Attribute	Config. Control Ref.	Engineering Evaluation Description Verified By?
13	GS	Operating temperature range from 10 to 100 degrees F. Non operating temperature range from -20 to 115 degrees F.	FDC-048	Switches, lights, alarms etc. being added are equivalent to existing equipment on Core Sampling Trucks	Control console is heated and cooled during operations.	H-2-92420 H-2-91663	Design meets requirements in FDC-048. BRJ
14	GS	Operating range in winds of up to 15 MPH in blowing dust, sand, rain, and snow.	FDC-048	Wind could cause bursting of burst disc. Other new equipment is equivalent to existing equipment.	Burst disc is located in shielded location (under base plate) and outlet is cover with sheet metal baffle.	H-2-91663	Design meets requirements in FDC-048. PRD

ATTACHMENT 2 - Copies of RCR's

See the following pages.

REVIEW COMMENT RECORD (RCR)

1. Date 3/21/97			2. Review No. CP97-008	
3. Project No. N/A			4. Page 1 of 1	

5. Document Number(s)/Title(s) ECN 636559, PUSH MODE CORE TRUCK MODIFICATION	6. Program/Project/ Building Number CHARACTERIZATION PROJECT	7. Reviewer M. L. MCELROY	8. Organization/Group CPQA/75820	9. Location/Phone 2704HW/B-122/ 373-5588
---	--	------------------------------	-------------------------------------	--

17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s)	11. CLOSED
---------------------------------	---	------------

Organization Manager (Optional)	Date	Reviewer/Point of Contact	Author/Originator
	3/25/97	M. L. MCELROY	M. L. MCELROY

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1.	Page 1--box 12b, need Work Package No. -- box 10, needs to list related ECNs.-- box 14b... needs USQ no.	MLM	ACCEPTED: ECN Changed	Closed
2.	Page 2--box 17, there won't be any additional costs?--box 19 & 20, need to list the SDD that will be changed.	MLM	REJECTED: This cost is for additional cost if done as construction project. Does not apply for these ECNs	
3.	Page 3--The "IS" and "WAS" both list the WELD AND INSPECT PER... as note #3, it should be note #10 as per the drawing.	MLM	ACCEPTED: ECN Changed	
4.	Page 4--Part number 122, should list the size of the "BAR"	MLM	ACCEPTED: ECN Changed	
5.	Page 9, right hand side of page--The note says to "MATCH DRILL TO PN 77." is this correct? Part 77 is a 1/4" X 18" CS SHAFT.	MLM	ACCEPTED: ECN Changed to reference pn 110	
6	Page 10, Part #110--Should the 4 X Ø.22 holes be match drilled or template from another part?		REJECTED: Pn 110 is the part that the gasket and other holes are matched to.	

REVIEW COMMENT RECORD (RCR)

				1. Date 3/21/97	2. Review No. CP97-009
				3. Project No. N/A	4. Page 1 of 1

5. Document Number(s)/Title(s) ECN 636566. PUSH MODE CORE TRUCK MODIFICATIONS	6. Program/Project/ Building Number CHARACTERIZATION PROJECT	7. Reviewer M.L. MCELROY	8. Organization/Group CPQA/75820	9. Location/Phone 2704HW/B-122/ 373-5588
--	--	-----------------------------	-------------------------------------	--

17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s) 11. CLOSED
---------------------------------	---

Organization Manager (Optional)	Reviewer/Point of Contact M.L. McElroy	Reviewer/Point of Contact M.L. McElroy
	Date 3/25/97	Date 3/25/97
	Author/Originator M.L. McElroy	Author/Originator M.L. McElroy

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1.	Page 1--Box 10. need to list the related ECNs --Box 12b. Need to list the Work Package No.--Box 14b. Need to list USQ no.	MLM	ACCEPTED: ECN Changed	Closed
2.	Page 2--Box 17. there won't be any additional costs?--Box 19 & 20. need to list the SDD that will be changed.	MLM	REJECTED: Cost impact applies to construction projects only. Truck #1 does not have SDD to change	
3.	Page 3--The 3rd and 4th bullets have TYPPOS and needs clarification.		ACCEPTED: ECN Changed	
4.	Page 5--NOTE: THERE ARE 2 PAGE 5'S--The 2nd "GENERAL NOTE" should be "NOTE 12" not 11. Need to designate the drawing number for the two items listed at bottom of page. after the "WAS".	MLM	ACCEPTED: ECN Changed	
5.	Page 6--an additional balloon should be drawn around "delta" 6 in the lower right corner.	MLM	ACCEPTED: Holes deleted from view. They are added by previous ECN	
6.	Page 8--an additional balloon should be drawn around the weld symbols changes in the "IS."		ACCEPTED: ECN changed	

REVIEW COMMENT RECORD (RCR)

1. Date 3/21/97		2. Review No. CP97-010	
3. Project No. N/A		4. Page 1 of 1	

5. Document Number(s)/Title(s) ECN 636567. PUSH MODE CORE TRUCK MODIFICATIONS	6. Program/Project/ Building Number CHARACTERIZATION PROJECT	7. Reviewer M. L. MCELROY	8. Organization/Group CPQA/75820	9. Location/Phone 2704HW/B-122/ 373-5588
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17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s) 3/25/97 Date	11. CLOSED
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Organization Manager (Optional) M. L. MCELROY Reviewer/Point of Contact Author/Originator	
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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1.	Page 1--Box 10, need to list the related ECNs--Box 12b, Need to list the Work Package No.--Box 14b. Need to list USQ no.	MLM	ACCEPTED: ECN Changed	Closed
2.	Page 2--Box 17, there won't be any additional costs?--Box 19 & 20, need to list the SDD that will be changed.	MLM	REJECTED: Cost impact applies to construction projects only. Truck # 1 does not have SDD	
3.	Page 4--Part 239, need to list the "grade" for the reducer, ie. "commercial grade"	MLM	ACCEPTED: ECN Changed	
4.	Page 5--Part 271 should read, "SEE NOTE 21" not 11.	MLM	ACCEPTED: ECN Changed	
5.	Page 6--The "IS" note 13, should indicate the part number for the sealant, ie. PN 246.--The "WAS" note 12, the word "OUTLET" is misspelled.	MLM	ACCEPTED: ECN Changed	
6.	Page 7--The two GENERAL NOTES should be notes 21 and 22 respectively, not 20 and 21. (NOTE 20 already exists on the drawing.)	MLM	ACCEPTED: ECN Changed	

REVIEW COMMENT RECORD (RCR)

1. Date 03/25/97		2. Review No. TF-97-0296	
3. Project No. NAJ2C		4. Page 1 of 1	

5. Document Number(s)/Title(s) ECN 636566	6. Program/Project/ Building Number Characterization Project	7. Reviewer Rick Freeman	8. Organization/Group Field Equipment Engineering/8C440	9. Location/Phone 2704HW/373-1130
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17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s) 3/27/97 Date	11. CLOSED 3/27/97 Date	15. Disposition (Provide justification if NOT accepted.) ACCEPTED: ECN changed. ACCEPTED: ECN changed.	16. Status Closed
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Organization Manager (Optional)	Reviewer/Point of Contact Rick Freeman Date	Author/Originator Rick Freeman Date
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12. Item	13. Comment(s)/discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1	Page 1 - Block 10, add See Block 14b.		ACCEPTED: ECN changed.	
2	Page 1 - Block 14a, add a check mark for "Criteria Change".		ACCEPTED: ECN changed.	
3	Page 1 - Block 14b, the note for see page 3 should be consistent between all three ECN's (636559, 636566, 636567).		ACCEPTED: ECN changed.	
4	Page 4 - Part no. 16, thread size should be 1-12 vs. 1-16.		ACCEPTED: ECN changed.	
5	Page 5 - Two new note 11. Align the notes. Two page 5's.		ACCEPTED: ECN changed.	
6	Page 6 - Lower right hand corner of the assembly, should the revision 6 triangle be in the revision cloud?		ACCEPTED: ECN changed.	
7	Page 11 - Add part no. 28 to assembly 18.		ACCEPTED: ECN changed.	
8	Page 12 - Discrepancy between thread type on part no. 25 and part no. 27 (the .631 end) UNC vs. UNF.		ACCEPTED: ECN changed.	

REVIEW COMMENT RECORD (RCR)

1. Date 03/25/97		2. Review No. TF-97-0296	
3. Project No. NAJ2C		4. Page 1 of 1	

5. Document Number(s)/Title(s) ECN 636567	6. Program/Project/ Building Number Characterization Project	7. Reviewer Rick Freeman	8. Organization/Group Field Equipment Engineering/8C440	9. Location/Phone 2704HV/373-1130
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17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s) 3/27/97 Date	11. CLOSED 3/27/97 Date	16. Status CLOSED
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Organization Manager (Optional)	Reviewed/Point of Contact Rick Freeman Date	Author/Originator Rick Freeman Date
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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1	Page 1 - Block 9, change Block 12 to 13a.		ACCEPTED: ECN changed.	
2	Page 1 - Block 10, delete the N/A and add "See Block 14b."		ACCEPTED: ECN changed.	
3	Page 1 - Block 14a... add a check mark for "Criteria Change."		ACCEPTED: ECN changed.	
4	Page 1 - Block 14b... the note for see page 3 should be consistent between all three ECN's (636559, 636566, 636567).		ACCEPTED: ECN changed.	
5	Page 4 - The description for part no. 239, 260, and 267 is not consistent.		ACCEPTED: ECN changed.	
6	Page 4 - Part no. 239, should we add "any grade SST"?		ACCEPTED: ECN changed.	

REVIEW COMMENT RECORD (RCR)					
1. Date		2. Review No.		3. Project No.	
03/25/97		TF-97-0296		1 of 2	
3. Project No.		4. Page		5. Document Number(s)/Title(s)	
N4J2C				ECN 639172	
6. Program/Project/ Building Number		7. Reviewer		8. Organization/Group	
Characterization Project		Rick Freeman		Field Equipment Engineering/8C440	
9. Location/Phone		10. Agreement with indicated comment disposition(s)		11. CLOSED	
2704HV/078-1130					
12. Comment Number(s) / Title(s)		13. Comment(s) / Discrepancy(s) (Provide technical justification for the comment. Detailed description of the action required to correct/resolve the discrepancy/problem indicated.)		14. Hold Point	
17. Comment Submittal Approval:		10. Agreement with indicated comment disposition(s)		11. CLOSED	
Organization Manager (Optional)		3/27/97		3/27/97	
		Rick Freeman		Rick Freeman	
		Reviewer/Point of Contact		Reviewer/Point of Contact	
		Date		Date	
		Author/Originator		Author/Originator	
		15. Disposition (Provide justification if NOT accepted.)		16. Status	
		Accepted, sketch updated to show part.		Accepted	
		Accepted, duplicate part deleted.		Accepted	
		Accepted, ECN updated to show modification to DR Box.		Accepted	
		Accepted, part locations clarified. Both part K and L are needed.		Accepted	
		Accepted, part no. AA added to sketch.		Accepted	
		Accepted, sketch updated.		Accepted	
		Accepted, sketch and cloud clarified.		Accepted	
		Accepted, sketch and cloud clarified.		Accepted	
		Accepted, wire deletion changed to move.		Accepted	
13. Comment(s) / Discrepancy(s) (Provide technical justification for the comment. Detailed description of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status		
Page 3 - Where is part #F shown and is 2 the correct quantity?		Accepted, sketch updated to show part.	Accepted		
Page 3 - There are two part #H shown in the parts list.		Accepted, duplicate part deleted.	Accepted		
Page 6 - The note "To DR Box", is this existing or new? and is this where part #F is located? Should the DR Box be added to parts list?		Accepted, ECN updated to show modification to DR Box.	Accepted		
Page 7 - I am confused on part # I, K, and L on how they are shown on page 8. Do we both K and L or is one optional?		Accepted, part locations clarified. Both part K and L are needed.	Accepted		
Page 8 - Maybe hidden lines in the front view or a side view would clarify the above confusion. Add part no. AA to terminal block label SRP-TB1.		Accepted, part no. AA added to sketch.	Accepted		
Page 9 - Refer to a part or assembly number vs. "SEE SHEET 4"		Accepted, sketch updated.	Accepted		
Page 10 - Make revision cloud smaller.		Accepted, sketch and cloud clarified.	Accepted		
Page 11 - Make revision cloud smaller.		Accepted, sketch and cloud clarified.	Accepted		
Page 12 - Recheck deletion of wire J7-T (61).		Accepted, wire deletion changed to move.	Accepted		

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REVIEW COMMENT RECORD (RCR)					1. Date 3-24-97	2. Review No.
					3. Project No. TRUCK #1	4. Page 1 of 1
5. Document Number(s)/Title(s) ECN 636559, ECN 636566, ECN 636567, and ECN 639172/ Core Sample Truck #1	6. Program/Project/ Building Number Core Sample Truck #1	7. Reviewer Jeff Ranschau	8. Organization/Group CPS/NS	9. Location/Phone 2704HW/373-4462		
17. Comment Submittal Approval:		11. CLOSED				
Organization Manager (Optional)		10. Agreement with indicated comment disposition(s) Date <u>3/31/97</u> Reviewer/Point of Contact <u>Jeff Ranschau</u> Author/Originator <u>Jeff Ranschau</u>				
		Date <u>3/31/97</u> Reviewer/Point of Contact <u>Jeff Ranschau</u> Author/Originator <u>Jeff Ranschau</u>				
12. Item	13. Comment(s)/Discrepancy(ies) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status		
1	Please provide the USQ screenings for each of the four ECNs.		ACCEPTED: USQ submitted.	Accepted		
2	ECN 636559, pages 4 and 9: As shown on page 9, part number 114 is a Scott assault mask filter cartridge (listed on page 4). Has the manufacturer of this cartridge verified that the cartridge will function properly in the configuration shown? Please provide the manufacturers verification. Note: Cartridges to be used in this system must be controlled (i.e., labeled or appropriately marked) to ensure that contaminated cartridges are not accidentally installed on personnel respiratory protective equipment.		ACCEPTED: Letter from Scott document acceptance ACCEPTED: Note added to paint warning on filters			

REVIEW COMMENT RECORD (RCR)				1. Date 03/20/97	2. Review No. GPJ - 970320
				3. Project No. CPO	4. Page 1 of 2
5. Document Number(s)/Title(s) Installation of Z-Purge on Truck #1, ECNs: 636559, 636566, 636567, 639172	6. Program/Project/ Building Number CHARACTERIZATION PROJECT	7. Reviewer GP JANICEK	8. Organization/Group TWRS DESIGN AUTHORITY	9. Location/Phone 2704HW/A-104 376-2225	
17. Comment Submittal Approval:			10. Agreement with indicated comment disposition(s) Date <u>3/31/97</u>	11. CLOSED Date <u>3/31/97</u>	Reviewer/Point of Contact <u>[Signature]</u> Author/Originator <u>[Signature]</u>
Organization Manager (Optional) Date <u>3/31/97</u>					
12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status	
1	All ECNs - Ensure block 12b is filled in.		ACCEPTED: Ecn revised	Closed	
2	All ECNs - Ensure USQ is indicated in block 14b.		ACCEPTED: Ecn revised		
3	All ECNs - Need USQ completed and submitted for review prior to approval of these ECNs.		USQ completed.		
4	All ECNs - Include GP Janicek on distribution, block 15.		ACCEPTED: Ecn revised		
5	All ECNs - Revise block 21 to indicate "Independent Review". Need someone to signoff for all independent reviewers - probably Boger.		ACCEPTED: Ecn revised		
6	All ECNs - Revise block 21 to indicate proper individuals required for approval.		ACCEPTED: Ecn revised		
7	All ECNs - In block 21 include MS Hendrix for Environmental approval.		ACCEPTED: Completed for ECNs 636559 and 636567. Showed Michelle other two and she said she didn't need to approve		
8	General - On those ECNs where the Safety Equipment List (SEL) is an impacted document, as indicated in block 19, indicate which PKs the SEL has to address.		ACCEPTED: Changed ECNs 636657 and 639172 to include statement that pressure switches may need to be added to SEL		

REVIEW COMMENT RECORD (RCR)

1. Date March 21, 1997			2. Review No. 1		
3. Project No. Truck One, Z-purge			4. Page 1 of 4		
5. Document Number(s)/Title(s) ECN's 636559, 636556, 636567, 639172 CHARACTERIZATION PROJECT		6. Program/Project/ Building Number	7. Reviewer Paul Deiche/bohrer	8. Organization/Group 8C460	9. Location/Phone S7-12, 373-2037
17. Comment Submittal Approval: Organization Manager (Optional) 3/25/97 Date Paul Deiche/bohrer Reviewer/Point of Contact Author/Originator		10. Agreement with indicated comment disposition(s) 3/25/97 Date Paul Deiche/bohrer Reviewer/Point of Contact Author/Originator		11. CLOSED	
12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status	
1	ECN 636566. Block 9 referenced block should be 13.		ACCEPTED. ECN CHANGED	Closed	
2	ECN 636566. Block 12b Correct Work Package call out		ACCEPTED. ECN CHANGED		
3	ECN 636566. Block 14 "Criteria Change" would be more accurate		REJECTED. DOING SAME AS TRK 3 & 4 DONE		
4	ECN 636566. Block 14 Correct USQ call out		ACCEPTED. ECN CHANGED		
5	ECN 636566. Block 20 Operating Procedure Name and Number to be included.		REJECTED. TO-080-503 WHICH IS OPER. PROC. IS ALREADY REFERENCED		
6	ECN 636566. p 4 Item 17 Such a thick (1/8") gasket will cause the burst disk to hang there like a cow's tail. Making the gasket 1/32" would stabilize it.		REJECTED. THE BOTTOM THE BASE PLATE IS PAINTED AND IS NOT PERFECTLY FLAT. WANT THICKER GASKET TO ASSURE SEAL		
7	ECN 636566. p5 (remove duplicate page 5)		ACCEPTED. ECN CHANGED		
8	ECN 636566. p5 Fill-in date block		ACCEPTED. ECN CHANGED		
9	ECN 636566. p5 New note 11. Loctite 242 should be used on part 26 as well as 25		ACCEPTED. ECN CHANGED		
10	ECN 636566. p11 Item 18 The six bolts that hold the disk should have torquing specified.		REJECTED. THE RUPTURE DISC WILL NOT BE AFFECTED BY OVERTIGHTENING.		
11	ECN 636566. Item 19 The note about "not allowing threads to extend..." Should an optional machining operation be called out?		REJECTED. DON'T NEED TO CALL OUT FABRICATION TECHNIQUES		

REVIEW COMMENT RECORD (RCR)

			1. Date March 21, 1997	2. Review No. .1
			3. Project No. Truck One, Z-purge	4. Page 2 of 4
12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
12	ECN 636566, Drawing showing the assembly of Items 26 and 27 should show the threads extending into item 26.		ACCEPTED, ECN CHANGED	
13	ECN 636566, pl3 item 24 ID call out should have a decimal point instead of a comma. This is not a metric dimension.		ACCEPTED, ECN CHANGED	
14	ECN 636559, Block 12 Need Work Package call out		ACCEPTED, ECN CHANGED	
15	ECN 636559, Block 14 INDEPENDENT NOT INDEPENDANT		ACCEPTED, ECN CHANGED	
16	ECN 636559, Block 14 Need USQ call out		ACCEPTED, ECN CHANGED	
17	ECN 636559, Block 15 Replace Smith with Drury Add Freeman and McElroy		ACCEPTED, ECN CHANGED	
18	ECN 636559, p7 Detail X shows unistrut mounts both on the same side of the horizontal pipe, but this page show one on each side. Block 20 Include Operating Procedure Call out		ACCEPTED, ECN CHANGED	
19	ECN 636559, Reference to Note 12 for the unistrut mounting doesn't seem to make sense.		ACCEPTED, ECN CHANGED TO REFERENCE NOTE 18	
20	ECN 636559, p9 Horizontal section of Item 112 seems to be called out to be 6 feet long. Should be 6 inches.		ACCEPTED, ECN CHANGED	
21	ECN 636559, Vertical lengths of Item 112 are not specified.		REJECTED, PART CALLED OUT AS REQUIRED WHICH MEET DRAWING STANDARDS	
22	ECN 636559, Match drilling note (center-right) seems to have wrong PN's called out. PN 14 should be 12; PN 77 should be 110.		ACCEPTED, ECN CHANGED	
23	ECN 636559, p11 Item 111 The ID of the gasket may fit too tight on the pipe to be assembled.		REJECTED, WE WANT GASKET TO SEAL AROUND OD OF PIPE. BELIEVE .060 INTERFERENCE WILL WORK	
24	ECN 636559, PN 77 should be 110.		ACCEPTED, ECN CHANGED	
25	ECN 636559, Item 113 Pipe threads should be cut after welding.		REJECTED, DRAWINGS TO NOT ADDRESS FABRICATION TECHNIQUES	

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REVIEW COMMENT RECORD (RCR)

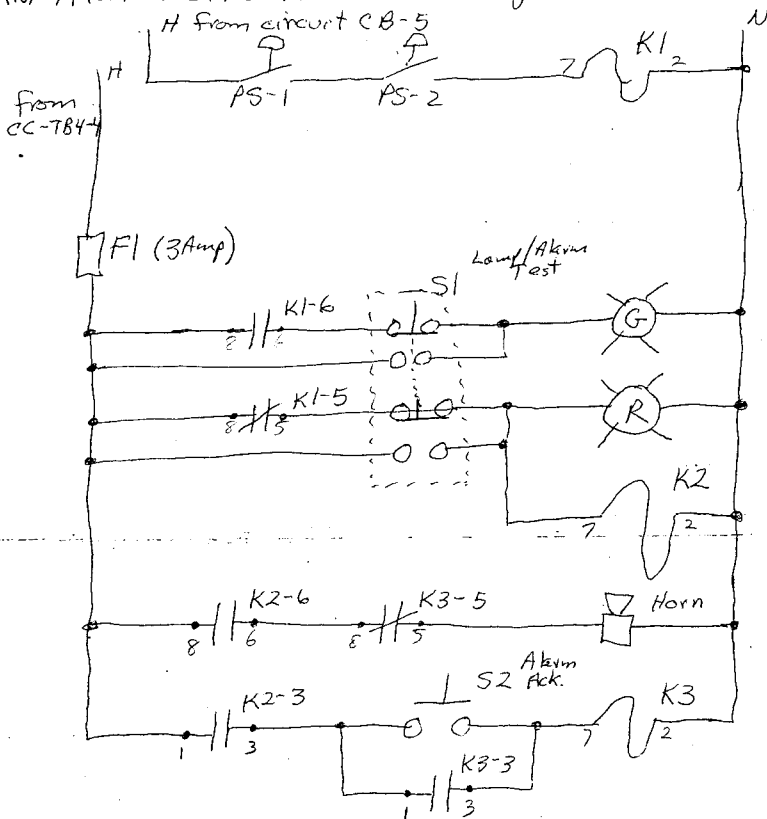
1. Date March 21, 1997			2. Review No. 1	
3. Project No. Truck One, Z-purge			4. Page 3 of 4	
12. Item	13. Comment(s)/discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
26	ECN 636567. Total number of pages should be 14		ACCEPTED, ECN CHANGED	
27	ECN 636567. Block 9 Correct BLOCK call out		ACCEPTED, ECN CHANGED	
28	ECN 636567. Block 12 Complete Work package No.		ACCEPTED, ECN CHANGED	
29	ECN 636567. Block 14 Complete USQ call out		ACCEPTED, ECN CHANGED	
30	ECN 636567. Block 15 Add Date and Stubbs		REJECTED, R. FREEMAN IS TRUCK # 1 COG	
31	ECN 636567. Block 19 Bungee cord and top vertical seal will wear out. They should be checked in the Periodic Maintenance Program.		ACCEPTED, BUT DOES NOT REQUIRE ECN CHANGE	
32	ECN 636567. p3 Wording should reflect that ECN 636566 also installs the Burst Disk		ACCEPTED, ECN CHANGED	
33	ECN 636567. p4 Item 239 needs material call out		ACCEPTED, ECN CHANGED	
34	ECN 636567. Item 252 Dia call out is wrong. Probably should be 2 1/2"		ACCEPTED, ECN CHANGED	
35	ECN 636567. p8 "Page 8 of 13" should be "page 8 of 14"		ACCEPTED, ECN CHANGED	
36	ECN 636567. p10 Compared to page 13, the section line B8-BB is either in wrong location or wrong orientation.		ACCEPTED, ADDED NOTE TO VIEW STATING THAT SAMPLER HOIST, WEATHER COVER, ETC NOT SHOWN FOR CLARITY	
37	ECN 636567. Bubbles for item 244 and 247 should be included in drawing		ACCEPTED, ECN CHANGED	
38	ECN 636567. p11 Section Z-Z There should be a note specifying inlet/outlet for filter.		ACCEPTED, ADDED TO EXISTING NOTE	
39	ECN 636567. TYP MTG DETAIL Will welding to the frame be allowed at all locations that the tube is to be mounted?		ACCEPTED, ECN CHANGED	
40	ECN 636567. Bubble for item 247 should be included		ACCEPTED, ECN CHANGED	
41	ECN 636567. p12 Parts should be bubbled.		ACCEPTED, ECN CHANGED	

REVIEW COMMENT RECORD (RCR)					1. Date March 21, 1997	2. Review No. .1	16. Status
					3. Project No. Truck One, Z-purge	4. Page 4 of 4	
12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status			
42	ECN 636567, p 13 Details for connecting the top end of Item 244 are missing.		ACCEPTED, ECN CHANGED	✓			
43	ECN 636567, "SEE NOTE 22" should be "SEE NOTE 21"		REJECTED, NOTE NUMBER WERE CHANGED	✓			
44	ECN 636567, p14 Item 275 Tolerance too tight: 4.0 --> 4 2.00 --> 2.0 1.00 --> 1.0 4.00 --> 4.0 2.38 --> 2.4 .50 --> .5 Bottom dim (2.00 for centerline) is unnecessary.		ACCEPTED, ECN CHANGED				
45	ECN 636567, VIEW DD-00 Dimensions 13.1 and 12.0 are too tight; 13 and 12 should be ok. Also, "2X 1.00" should be "2X 1.0"		ACCEPTED, ECN CHANGED				
46	ECN 636567, Lock washers (Item 282) should be used to mount gage bracket.		ACCEPTED, ECN CHANGED				

REVIEW COMMENT RECORD (RCR)				1. Date 3/19/97	2. Review No. 1
				3. Project No. 639172	4. Page 1 of 2
5. Document Number(s)/Title(s) ECN 639172	6. Program/Project/ Building Number TRUCK #1	7. Reviewer B. R. JOHNS	8. Organization/Group SESC	9. Location/Phone 2704HW/D1111/373-3429	
17. Comment Submittal Approval:		11. CLOSED			
Organization Manager (Optional)		10. Agreement with indicated comment disposition(s) Date <u>3/25/97</u> Reviewer/Point of Contact <u>B. R. Johns</u> Date <u>3/25/97</u> Reviewer/Point of Contact <u>B. R. Johns</u> Date <u>3/25/97</u> Reviewer/Point of Contact <u>B. R. Johns</u>			
12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status	
1	Page 7 of 13: Parts P and Q appear not to agree with wiring diagram. Parts list shows NO and NC contact blocks for S2 and only NC for S1. Diagram on page 12 shows just the opposite.		Accepted, parts list corrected.	closed	
2	Page 10 of 13: It is not clear where the new wire from CC-1B4-4 is going. I assume it goes to SRP-1B1-1 shown on page 11. Suggest sketch be clarified.		Accepted, sketch clarified.		
3	Page 11 of 13: Same as previous comment. It is not clear where the 3 wires going. Suggest clarification.		Accepted, sketch clarified.		
4	Page 12 of 13: This circuit does not appear to function properly. Note that when S2 is pressed, nothing happens. Suggested design attached in ladder diagram form.	Yes	Not accepted. The switch S2 only performs a function if an alarm has occurred. S2 unlatches the K3 relay to acknowledge the alarm buzzer.		
5	Items 2.1 and 2.2 of Design Matrix: Alarms not redundant. There is only one light, one horn, one relay to activate the alarm, and one power source for the alarm circuit. There is only one contact on relay K1 that actuates the alarm.	Yes	Not accepted. The draft of the Design Compliance Matrix (DCM) was in error. Redundant alarms are not required. The DCM has been corrected.		

(1) Drawing _____ (2) Doc. No. ECN 639172 (3) Page 1 of 2
 (4) Building _____ (5) Rev. 0 (6) Job No. _____
 (7) Subject Alarm Circuit Indep Review
 (8) Originator Bruce R Johns Date 3/19/97
 (9) Checker _____ Date _____

(10) Alarm Circuit ladder diagram:



This will make existing circuit work. See explanation on next page. However, I would not consider this a redundant circuit. BRJ.

DESIGN CALCULATION

HNFSDWMDRRR064 XXXXXXXX
Page A3-1

(1) Drawing _____ (2) Doc. No. _____ (3) Page 2 of 2
 (4) Building _____ (5) Rev. _____ (6) Job No. _____
 (7) Subject _____
 (8) Originator _____ ATTACHMENT 3 Date _____
 (9) Checker _____ FGEAB Report Date _____

(10) Circuit function:

PS-1 and PS-2 normally closed and K1 normally energized when pressure is high. K1-6 contact closes and green light is ON. Contact K1-5 is open and red light OFF and K2 relay deenergized.

On low pressure or K1 relay power failure, K1 deenergized. Contact K1-6 opens and green light is OFF. K1-5 contact closes and Red light ON and relay K2 ~~energ~~ energizes. K2-6 contact closes and horn sounds. Contact K2-3 closes and makes ready the acknowledge circuit.

Upon pressing S2 to acknowledge alarm, K3 relay energizes and opens contact K3-5 and turns horn OFF. Contact K3-3 closes and seals in K3 relay to maintain acknowledge circuit. Upon pressure increase, K2 relay deenergizes and resets acknowledge circuit by resetting relay K3.

BRJ

ATTACHMENT 3 - FGEAB Report**FLAMMABLE GAS EQUIPMENT ADVISORY BOARD
INTERPRETATION/RECOMMENDATION REPORT****Date:** April 8, 1997**Report No:** FGEAB-97-032, Rev. 1**Board Members at Hearing:**

J. T. Gregor (for R. A. Huckfeldt) C. C. Scaief III
J. R. Kriskovich R. L. Schlosser
C. M. Monasmith (for G. P. McDonald) D. B. Smet

Report No:

FGEAB-97-032,
Rev. 1

Date: 4/8/97**Requestor/Presenters:** J.C. Akers, G.P. Janicek, J.S. Schofield, and G.W. Wilson.**Problems/Issue Statement:**

Push Mode Core Sampling Truck 1 is currently operating under Non-Deminimus Temporary Exception Items 13 and 14 to the Ignition Source Control Requirements for the non-purged Shielded Receiver load cell and the Shielded Receiver weather cover, hoist, and limit switches in Facility Group 2 and 3 Waste Intruding Equipment. Design changes to provide Type Z purge for the weather cover and provide direct venting to atmosphere for the Shielded Receiver have been developed to allow continued use of the equipment when Exception Items 13 and 14 expire. The FGEAB has been requested to evaluate the proposed changes for compliance with or equivalency to the Ignition Source Control requirements. Upon implementation of the Referenced ECNs, this Report supersedes the FGEAB-97-008 entries for the Shielded Receiver Load Cell and assembly for Truck 1 and the Shielded Receiver Weathercover - Hoist, Limit Switches for Truck 1. This revision incorporates Facility Group 1 applicability to the evaluation.

Equipment/Activity Description:

With the modifications proposed, the vent from the Shielded Receiver will be exhausted through a filtered outlet above and external to the Shielded Receiver weather cover and the Shielded Receiver weather cover will be equipped with Type Z purge. The purge will be monitored by two externally mounted pressure switches located below the Shielded Receiver. A second filtered vent will be added to the bottom of the Shielded Receiver weather cover to ensure adequate purge flow. Audible and visual alarms will be provided for loss of purge pressure. Thus, the normally sparking Shielded Receiver load cell, hoist motor, and limit switches will be isolated from the Shielded Receiver by the inclusion of purging and relocation of the Shielded Receiver vent outside the Shielded Receiver weathercover. The externally mounted pressure switches (United Electric Controls Model JC120-521) are qualified to NFPA Class I, Divisions 1 & 2, Group B requirements. All normally sparking components are isolated from the Waste Intruding Equipment (Shielded Receiver and drill string) by a single (non-hermetic) isolation barrier, making application of ISC 2 the appropriate requirement and providing Type Z purge in compliance with ISC 2 requirements.

FLAMMABLE GAS EQUIPMENT ADVISORY BOARD INTERPRETATION/RECOMMENDATION REPORT

Date: April 8, 1997

Report No: FGEAB-97-032, Rev. 1

Equipment/Activity Description: (continued)

The seal enclosure provided by the shielded receiver is evaluated to be an acceptable isolation barrier between the waste intruding equipment and the weathercover. This allows classification within the weather cover as equivalent to a Dome region. The pressure switches are located within the Ex-Tank Region due to their proximity to the Shielded Receiver weather cover vents.

References: ECNs 639172, 636559, 636566, & 636567, Drawings H2-91653, Shts 1 & 2

Applicable Authorization Basis: Standing Order 97-01, Rev. 0 **Dated:** January 7, 1997

Does Equipment/Activity Comply with the AB Ignition Control Requirements?

☒ Yes ☐ No ☐ Other

If No, Does Equipment/Activity Provide Equivalent Design/Measures/Controls? N/A

☐ Yes ☐ No ☐ Other

Explanation/Justification: N/A

If Not Equivalent, What Changes are Necessary to Comply or Provide Equivalency? N/A

FGEAB INTERPRETATION/RECOMMENDATION:

Equipment, Materials & Work Practices (1)	Location (2)	Ignition Control Set (3)	IC Set Met (4)	FGEAB Safety Equivalence Ruling (5)	Approved Exception (6)
Truck #1: Shielded Receiver load cell	Facility Group 1, 2 & 3, Dome Region*	ISC2	Yes, with type Z purge		

FLAMMABLE GAS EQUIPMENT ADVISORY BOARD INTERPRETATION/RECOMMENDATION REPORT

Date: April 8, 1997

Report No: FGEAB-97-032, Rev. 1

Equipment, Materials & Work Practices (1)	Location (2)	Ignition Control Set (3)	IC Set Met (4)	FGEAB Safety Equivalence Ruling (5)	Approved Exception (6)
Truck #1: Shielded Receiver Weather Cover Type Z Purge Pressure Switches	Facility Group 1, Ex-Tank region; Facility Group 2, Ex-Tank region, during locally waste disturbing activities	ISC2	Yes		
Truck #1: Shielded Receiver Weather Cover Containing Hoist and Limit Switches	Facility Group 1, 2 & 3, Dome region*	ISC2	Yes, with type Z purge		
* Addition of Shielded Receiver venting outside the weather cover provides a seal barrier between the Waste Intruding Equipment and the region housed within the Shielded Receiver weathercover. Since the hoist shaft penetrates the Shielded Receiver, the volume within the weather cover is treated as equivalent to a Dome Region.					
General Application of Finding, If Any: N/A					
FGEAB Representative: <u>R. L. Schlosser (Signature on file)</u> Date: <u>4/8/97</u>					
Reviewer Signature: <u>D. B. Smet (Signature on file)</u> Date: <u>4/8/97</u>					

ATTACHMENT 4 - Final Meeting Minutes**MEETING MINUTES**

SUBJECT: Final Design Review Briefing, PMST Modification for Standing Order Compliance

TO: Distribution		BUILDING 2704-HV		
FROM: GW Wilson		CHAIRMAN GW Wilson		
DEPARTMENT-OPERATION-COMPONENT Characterization Equipment Engineering	AREA 200-E	SHIFT Day	DATE OF MEETING 3/26/97	NUMBER ATTENDING 7

A list of attendees is contained on the attached meeting roster. The meeting opened with a discussion of objectives. The next item of discussion concerned the possible revision of the Safety Equipment List and safety classification of components. It was agreed that the SEL would be addressed by final sign-off of ABU.

Revised copies of ECNs 636559, 636566, 636567, and 639172 were passed out along with a summary of changes that had been completed on ECNs since previous review.

The changes to the ECNs were reviewed item by item against RCR comments to ensure that all reviewers were aware of all changes. Two minor errors were noted and corrected.

The design review closed without further discussion.

ATTACHMENT 5 - Letter from Scott

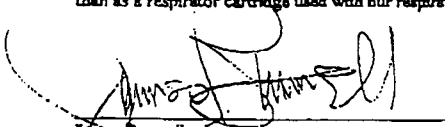


April 1, 1997

TO WHOM IT MAY CONCERN:

The 642-H HEPA (High Efficiency Particulate) filter cartridge meets the 99.97% DOP standard at 16 or 32 L/minute flow with the air flow going in either direction.

However, we can not guarantee the use of this filter cartridge in any applications other than as a respirator cartridge used with our respirator facepiece.


 James E. Wilson
 Quality Manager

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