S

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 657977

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐	F.R. Reich, S1800, S7-12, 372-8696	☐ Yes ☒ No	4/19/00
	6. Project Title/No./Work Order No. Type 4 ISVS Carts Update	7. Bldg./Sys./Fac. No. 200 G	8. Approval Designator N/A
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) RPP-5451, Rev. 0	10. Related ECN No(s). N/A	11. Related PO No. N/A

12a. Modification Work	12b. Work Package No.	12c. Modification Work Completed	12d. Restored to Original Condition (Temp. or Standby ECNs only)
☐ Yes (fill out Blk. 12b) ☒ No (NA Blks. 12b, 12c, 12d)	N/A	N/A Design Authority/Cog. Engineer Signature & Date	N/A Design Authority/Cog. Engineer Signature & Date

13a. Description of Change

13b. Design Baseline Document? ☐ Yes ☒ No

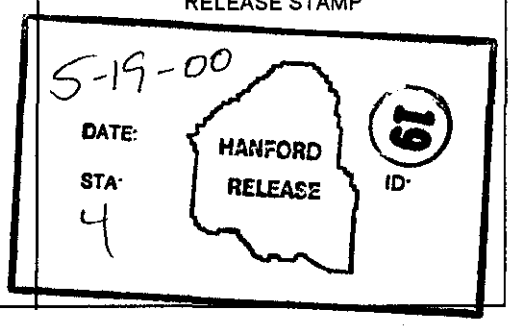
This direct revision updates RPP-5451, Rev.0, "Partial Acceptance For Beneficial Use (ABU) For The Type 4 In-Situ Vapor Sampler (ISVS) Carts". The "Partial" ABU was issued to allow field deployment of the Type 4 ISVS Carts to support the rigorous FY 2000 vapor sampling and mixer pump testing schedules. None of the open items in the "partial" ABU impacted the operation or safety of the Type 4 ISVS system. This revision documents the closure/completion of the open items and completes the ABU requirements per HNF-IP-0842, Vol. IV, Sec. 3.12. The open items that were completed/closed include issuing a vendor information file, incorporation of all ECNs into the ISVS system drawings, and issuing the updated drawing set.

14a. Justification (mark one)	14b. Justification Details
Criteria Change ☐ Design Improvement ☒ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facilitate Const. ☐ Const. Error/Omission ☐ Design Error/Omission ☐	These changes complete the open items from the "Partial" ABU that was issued for the Type 4 In-Situ Vapor Sampling System Carts. This ABU was completed as required by HNF-IP-0842, Vol. IV, Sec. 3.12 and supports configuration management of the Type 4 ISVS system. USQ not required per Section 1.0 of HHF-IP-0842, Vol IV, Section 5.4, Rev. 12.

15. Distribution (include name, MSIN, and no. of copies)

RM Boger	S7-12	1 Copy	JD Criddle	S7-12	1 Copy
LA Flowers	T4-08	1 Copy	GP Janicek	S7-12	1 Copy
ML McElroy	S7-07	1 Copy	FR Reich	S7-12	1 Copy
JS Schofield	S7-12	1 Copy	JF Sickels	S7-03	1 Copy
DD Wanner	S7-12	1 Copy	GW Wilson	S7-12	1 Copy

RELEASE STAMP



ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 657977

16. Design Verification Required	17. Cost Impact		18. Schedule Impact (days)
	ENGINEERING	CONSTRUCTION	
☐ Yes	Additional ☐ $ N/A	Additional ☐ $ N/A	Improvement ☐ N/A
☒ No	Savings ☐ $ N/A	Savings ☐ $ N/A	Delay ☐ N/A

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	*Maintenance Procedure*	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐	None	☒
Environmental Permit	☐	Inventory Adjustment Request	☐		☐

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
N/A	N/A	N/A

21. Approvals

	Signature	Date		Signature	Date
Design Authority G.P. Janicek	G.P. Janicek	5/17/00	Design Agent F.R. Reich	F.R. Reich	5/11/00
Cog. Eng. D.D. Wanner	D.D. Wanner	5/16/00	PE		
Cog. Mgr. J.S. Schofield	J.S. Schofield	5/17/00	QA		
QA M.L. McElroy	M.L. McElroy	5/15/00	Safety		
Safety L.A. Flowers ~~C.D. Jackson~~	L.A. Flowers	5/15/00	Design		
Environ.			Environ.		
Other CPO Mgr. J.E. Stickels	J.E. Stickels	5-17-00	Other		
CPO Engr. Mgr. R.M. Boger	R.M. Boger	5/17/00			
Proj. Mgr. J.D. Criddle	J.D. Criddle	5/15/00			
Review G.W. Wilson	G.W. Wilson	5/15/00			
			DEPARTMENT OF ENERGY		
			Signature or a Control Number that tracks the Approval Signature		
			ADDITIONAL		

ACCEPTANCE FOR BENEFICIAL USE FOR THE TYPE 4 IN-SITU VAPOR SAMPLER CARTS

R. M. BOGER
CH2M HILL Hanford Group, Inc., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

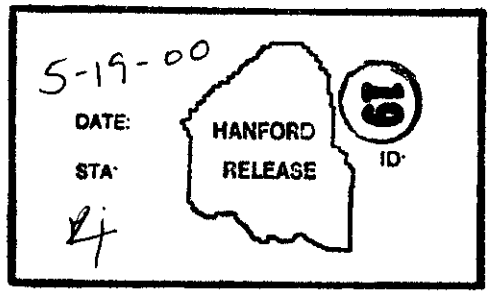
EDT/ECN: 657977 UC: 2000
Org Code: 74900 Charge Code: 102254/B000
B&R Code: EW3130000 Total Pages: 12

Key Words: Partial, Acceptance for Beneficial Use, ABU, single shell tanks, storage tanks, radioactive waste, vapor sampling, design requirements, Type 4, In-Situ Vapor Sampling, ISVS

Abstract: This document provides the Acceptance for Beneficial Use (ABU) for the Type 4 in-situ vapor sampler (ISVS) system. This document is generated to support the completion of equipment modifications and engineering documentation for the ISVS system that is used for sampling gaseous vapors in the Hanford single shell radioactive waste storage tanks. This ABU documents items for transferring the ISVS system to operations for field use. This document is generated following Characterization Engineering Desk Instruction DI-CE-004-001.

Release Approval _____ Date 5/18/00

Release Stamp



Approved for Public Release

ACCEPTANCE FOR BENEFICIAL USE FOR THE TYPE 4 IN-SITU VAPOR SAMPLER CARTS

Prepared For
River Protection Project
CH2M HILL Hanford Group, Inc.
Characterization Engineering
Richland, WA

By F. R. Reich
COGEMA Engineering Corporation
Richland, Washington

May 2000

RECORD OF REVISION

(1) Document Number: RPP-5451, Rev. 1

(2) Title: Acceptance for Beneficial Use (ABU) for the Type 4 In-Situ Vapor Sampler (ISVS) Carts.

Change Control Record

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) RPP-5451, Rev. 0, EDT 624175, March 21, 2000		
1	Direct Revision,"partial" to final ABU. Added ETP ABU Checklist, deleted "partial" from title,	~~DD Wanner~~ JSS 5/17/00	~~JS Schofield~~ JSS 5/17/00
1 RS	revised "Completed Checklist Table" to show completion of all "partial"ABU open items.	DD Wanner	JS Schofield John Schofield
1	Incorporated ECN-657977		

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APPENDICES

ACCEPTANCE FOR BENEFICIAL USE FOR TYPE 4 IN-SITU VAPOR SAMPLER CARTS

1.0 INTRODUCTION

This document presents the final Acceptance For Beneficial Use (ABU) for the Type 4 In-Situ Vapor Sampling (ISVS) system carts. The two existing Type 4 carts (ISVS-1 and ISVS-2) have been in storage and have not been used for over two years. Activities were completed that upgraded the ISVS Type 4 sampling carts and prepared them for field deployment in FY 2000 (RPP 2000a).

The Type 4 ISVS carts are portable sampling systems designed to collect in-tank vapor samples from the head space region of Hanford's radioactive waste storage tanks (WHC 1996). The Type 4 ISVS system consists of a cart, a tube bundle, and a sampling head. The cart contains an instrumentation cabinet with vacuum air pump components, a manifold and various valves, flow meters, flow totalizers, rotameters, and filters mounted on a hand truck. The tube bundle (approximately 50 ft long) connects the cart with the sampling head and is used to lower the sampling head into a tank dome space through a tank riser. The sampling head contains particulate filters, tritium-trap filters, sorption tubes, and a thermocouple. As tank dome space gas is drawn through the tube bundle by the cart vacuum system, the sampling components in the sampling head scavenge particle, vapor, and gas samples. The selection and arrangement of the sorption tubes and filters is dependent upon the vapor sampling needs identified in the Data Quality Objective document (LMHC 1999a) and the sampling analysis plan (SAP). After sampling is completed the sample head is disconnected from the tube bundle, bagged out with protective plastic, and shipped to the 222S laboratory for analysis.

2.0 PURPOSE

This final ABU documents the completion of all items, including the open items that were identified in the "partial" ABU for the Type 4 ISVS system carts. The "partial" ABU allowed the Type 4 ISVS system to be field deployed to support the rigorous FY 2000 vapor sampling and mixer pump testing schedules. None of the open items in the "partial" ABU items had an impact on the operation or safety of the Type 4 ISVS system. The ABU has been completed as required by HNF-IP-0842, Section 3.12, "Acceptance of Structures, Systems, and Components for Beneficial Use" and supports configuration management of the Type 4 ISVS system (LMHC 1999b).

3.0 SCOPE

This ABU documents completed activities and documentation that was prepared for the turnover of the Type 4 ISVS system to Operations (RPP 2000b). Table A-1 in Appendix A contains the ABU checklist from the Type 4 ISVS Engineering Task Plan (RPP 2000a). Table

A-2, in Appendix A, lists the documents and activities that complete the ABU checklist requirements.

The specific tasks and documentation that were completed for the Type 4 ISVS carts includes the following:

- Engineering Task Plan released and issued (RPP-5468).
- Design Compliance Matrix released and issued (RPP-5275).
- Operation Test Procedure released and issued (RPP-5659).
- Updated all ISVS drawings to incorporate old outstanding ECNs.
- Updated sampler head drawing to include potential sampling materials (sorbent tubes, filters, sampler head configuration, etc.) that could be part of a sampling head inserted into the tank dome space (H-2-825301).
- Flammable Gas Equipment Advisory Board (FGEAB) approval obtained for dome intrusive vapor sampling with the Type 4 ISVS system per Ignition Control Set #2 in Facility Group 1, 2, and 3 tanks (FGEAB-97-008, Rev. 8).
- Completed an informal walk-down of ISVS Carts #1 and #2 (RPP 5468).
- Completed modification work ECNs and work that modifies the sample cylinder, adds a digital thermometer, adds intrinsically safe thermocouple reader, adds fan switch, adds totalizer brackets, adds stiffening angle, adds wire and equipment labels, and adds electrical connection diagram for ISVS-2 to show differences that exist between ISVS-1 and ISVS-2 (H2-825301, H2-825313, and H2-825314).
- Completed OTP testing with both ISVS-1 (Cart #1) and ISVS-2 (Cart #2) (RPP 5911 and RPP 5912).
- Completed operator training (Training Plan Document Number 79600-00-002).
- Updated operating procedures (TO-080-627, Rev. B-0).
- Performed validation and verification of operating procedures (TO-080-627, Rev. B-0).
- Completed NEC inspection (NEC Service Inspection Authorizations No. 8175 and 8176).
- Prepared and issued Vendor Information File (V.I. No. 50097)

This completes all of the items and requirements for the final Type 4 ISVS System ABU.

4.0 RESPONSIBILITIES

The assigned Design Authority is responsible for proper preparation and maintenance of the ABU and exercises ownership of it on behalf of Characterization Equipment Engineering and Characterization Project Operations management.

5.0 REFERENCES

FGEAB-97-008, Rev. 8, *Flammable Gas Equipment Advisory Board Interpretation/Recommendation Report*, January 12, 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

LMHC 1999a, HNF-SD-WM-DQO-021, Rev. 1, *Data Quality Objectives for Regulatory Requirements for Hazardous and Radioactive Air Emissions Sampling and Analysis.* Lockheed Martin Hanford Corporation, Richland, Washington, July 1999.

LMHC 1999b, HNF-IP-0842, Vol. IV, *TWRS Administrative Procedures, Engineering,* Lockheed Martin Hanford Corporation, Richland, Washington, September 1998.

RPP 2000a, RPP-5468, Rev. 0, *Engineering Task Plan for Preparing the Type IV In-Situ Vapor Samplers (ISVS) for Use*, January 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

RPP 2000b, RPP-5275, Rev. 0, *Baseline Design Compliance Matrix for the Type 4 In-Situ Vapor Samplers (ISVS),* January 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

RPP 2000c, RPP-5659, Rev. 0, *Operations Test Plan for the Type 4 In-Situ (ISVS) System*, January 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

RPP 2000d, RPP-5911, Rev. 0, *Cart #2 Type 4 In-Situ Vapor Sampling (ISVS) System Operability and Operational Test Report*, March 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

RPP 2000e, RPP-5912, Rev. 0, *Cart #1 Type 4 In-Situ Vapor Sampling (ISVS) System Operability and Operational Test Report*, March 2000, CH2M HILL Hanford Group, Inc. Richland, Washington.

TO-080-627, Rev. B-0, *Vapor Sampling of Waste Tanks Using In-Situ Vapor Sampling (ISVS) System*, February 2000, Tank Farm Plant Operating Procedure, CH2M HILL Hanford Group, Inc. Richland, Washington.

WHC 1996, Blanchard, R. J., WHC-SD-WM-SDD-068 Rev. 0, *System Design Description for the In-Situ Vapor Sampling System*, July 1966, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

ACCEPTANCE FOR BENEFICIAL USE CHECKLIST AND COMPLETED ACTIVITY/DOCUMENT LIST

Table A-1 ABU Check List From Type 4 ISVS Cart Engineering Task Plan (RPP-5468)

DOCUMENTATION REQUIRED from
Project Type IV Sampler Documentation Update
Prior to ACCEPTANCE FOR BENEFICIAL USE

DESCRIPTION	RESPONSIBILITY	DESCRIPTION	RESPONSIBILITY
ENGINEERING		ADP	
☒ Engineering Task Plan (ETP)	Reich, FR	☐ Software Configuration Management Plan	N/A
☒ Activity Schedule	Reich, FR	☐ System Requirements Specification	N/A
☐ Final Safety Analysis Report (FSAR)	N/A	☐ Software Design Description	N/A
☐ Technical Safety Requirements (TSR)	N/A	☐ Software Validation/ Verification	N/A
☐ Safety Assessment (SA)	N/A	☐ _____	N/A
☒ Safety Equipment List (SEL)	Criddle, JD		
☐ Design Criteria	N/A	TRAINING	
☐ System Design Description (SDD)	N/A	☐ Training Plan	N/A
☐ Test Plan/Specification		☐ Training Manuals	N/A
☐ Acceptance Test Procedures (ATPs) and Final Test Reports	N/A	☒ Training to Operating Crews	Jennings, P.
☒ Operational Test Procedures (OTPs) and Final Test Reports	Wanner, DD	☒ Training to Maintenance Crews	Jennings, P.
☐ Environmental Impact Statement	N/A	☐ Training Mock-Up	N/A
☐ Environmental Report	N/A	☐ _____	N/A
☐ Environmental Permit	N/A		
☐ Hazardous Waste Disposal Plan/Procedure	N/A	OPERATIONS/MAINTENANCE	
☐ Solid Waste Disposal Plan/Procedure	N/A	☐ Operating and Maintenance Manuals	N/A
☐ Stress/Seismic Analysis	N/A	☒ Operating Procedures	Wanner, DD
☐ Stress/Design Report	N/A	☐ Surveillance Procedures	N/A
☐ Design Specification Report	N/A	☒ Calibration Procedures	Wanner, DD
☐ Equipment Specifications	N/A	☒ Preventative Maintenance Procedures	Wanner, DD
☐ Procurement Specifications	N/A	☒ Repair/Maintenance Procedures	Wanner, DD
☐ Construction Specifications	N/A	☐ Functional Check Procedures	N/A
☐ Essential Material Specifications	N/A	☒ Preventative Maintenance Data Sheets	Wanner, DD
☐ Final Design Drawings	N/A	☐ _____	N/A
☐ Installation Drawings	N/A		
☐ Installation Work Plan	N/A	QUALITY ASSURANCE	
☒ As-Built Drawings	Wilson, GW	☐ Inspection Plan	N/A
☐ Interface control Drawings	N/A	☐ QA Program Plan	N/A
☐ IEFD Drawings	N/A	☐ QA Project Plan	N/A
☐ System Drawings	N/A	☐ _____	N/A
☐ Drawing Tree			
☒ Incorporated Outstanding Project Generated ECNs	Reich, FR	PROCUREMENT	
☒ FGEAB Report	Criddle, JD	☒ Vendor Information Files	Wilson, GW
☒ Design Compliance Matrix	Reich, FR	☐ Comprehensive Equipment List	N/A
☐ _____	N/A	☒ Spare Parts List	Wilson, GW
		☒ Spare Parts in Stock	Wilson, GW

Table A-2 Activities and Documentation that Complete ABU Checklist Requirements

ACCEPTANCE FOR BENEFICIAL USE (ABU)

3. Document No.	4. Project No.	5. SSC Designator	6. System / Building / Facility	7. Equipment / Component No.	8. ECN No.
RPP-5451	NA	GS	200 General	ISVS Carts #1 and #2	EDT xxxxx

9. Final ABU (X) Partial ABU ( )	10. ATP Rerun Required ( ) Yes (X) No

11. Description of Work

Modify Type 4 ISVS carts by replacing dial thermometer, replacing power strip, and other minor modifications. Complete update of drawings to represent an as-built condition of each cart. Resolve FGEAB issues with the carts and sampling head.

12. Description of Work to be Completed	13. Scheduled Completion Date	14. Responsibility for Completion	15. Impact on Operations/Safety
(None)			

16. Documents or Other Items/Tasks to be Updated	17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
ENGINEERING:				
Engineering Procedure (N/A)				
Engineering Task Plan (ETP) (X)		RPP-5468, Rev. 0, issued 1/6/00	FR Reich	Yes
Final Safety Analysis Report (FSAR) (N/A)				
Safety Assessment (SA) (N/A)				
Functional Design Criteria (FDC) (N/A)				
Conceptual Design Report (CDR) (N/A)				
Supplemental Design Requirements Document (SDRD)(N/A)				
System Design Description (SDD) (N/A)				
Acceptance Test Procedures (ATPs) and Final Test Report (N/A)				
Operational Test Procedures (OTP) and Final Test Report (X)		RPP 5659, OTP issued 1/31/00, and RPP 5911 (ISVS-2) and RPP 5912 (ISVS-1) OTRs issued 3/2/00 per Work packages ES-00-00032 (ISVS-1) and ES-00-00033 (ISVS-2).	DD Wanner	Yes
Safety Equipment List (SEL) (X)		The DCM document (RPP-5275; Rev. 0) defines the Type 4 ISVS carts as General Service.	JD Criddle	Yes
Environmental Impact Statement(N/A)				

16. Documents or Other Items/Tasks to be Updated	17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
Environmental Report(N/A)				
Environmental Permits (N/A)				
Stress/Seismic Analysis (N/A)				
Stress/Design Report (N/A)				
Equipment Specification (N/A)				
Procurement Specification (N/A)				
Construction Specification (N/A)				
Essential Material Specification (N/A)				
Technical Specification (N/A)				
Interface Control Drawing (N/A)				
FGEAB Assessment Report (X)		FGEAB approved Type 4 ISVS Carts for tank vapor space per Ignition Control Set #2 in Facility Group 1, 2, and 3 tanks (FGEAB-97-008, Rev. 8).	JD Criddle	Yes
Design Compliance Matrix (DCM) (X)		RPP-5275, Rev. 0, issued 1/25/00	FR Reich	Yes
As-built Drawing (X)		Updated H-2-825301, H-2-825313, and H-2-825314 as per outstanding ECNs; generated ECNs as per an informal walkdown of ISVS-1 and ISVS-2.	GW Wilson	Yes
ADP:				
Software Configuration Management Plan (N/A)				
System Requirements Specifications (N/A)				
Software Design Description (N/A)				
Computer Software (N/A)				
TRAINING:				
Training Plan (N/A)				
Training manuals (N/A)				
Training to Operating Crews (X)		Type IV Vapor Cart Operations Training Plan 79600-00-002, 3/9/00 (course #351483)	P "Rick" Jennings	Yes
Training to Maintenance Crews (X)		Type IV Vapor Cart Operations Training Plan 79600-00-002, 3/9/00 (course #351483)	P "Rick" Jennings	Yes
Training Mock-Up (N/A)				

16. Documents or Other Items/Tasks to be Updated	17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
OPERATIONS:				
Operating and Maintenance Manuals (N/A)				
Operating Procedures (X)		TO-080-627, Rev. B-0, revised 2/16/00	DD Wanner	Yes
Operation Instructions(N/A)				
Surveillance Procedures (N/A)				
Calibration Procedures (N/A)				
Preventative Maintenance Procedures (N/A)				
Repair/Maintenance Procedures (X)		ES-683 (ISVS-1) and ES-684 (ISVS-2), issued 2/29/00	DD Wanner	Yes
Functional Check Procedures (N/A)				
Operations Safety Requirements (N/A)				
Preventative Maintenance Data Sheets (X)		ES-683 (ISVS-1) and ES-684 (ISVS-2), issued 2/29/00	DD Wanner	Yes
QUALITY ASSURANCE:				
Inspection Plan (X)		See work packages ES-00-00032 (ISVS-1) and ES-00-00033 (ISVS-2).	ML McElroy	
QA Program/Project Plan (N/A)				
QAP JP (N/A)				
NEC Inspection (X)		NEC Inspection Report No. 8189: NEC Service Inspection Authorization No. 8175, 1/26/00 (ISVS-1) NEC Service Inspection Authorization No. 8176, 1/26/00 (ISVS-2)	JD Criddle	Yes
PROCUREMENT ACTIVITIES:				
• Vendor Information (X)		Vendor Information File V.I. No. 50097, issued 3/23/00	GW Wilson	Yes
• Material List (N/A)				
• Spare Parts (X)		Part of the 2101HV Inventory System	JS Schofield	Yes
• Purchase Requisition (N/A)				
• ALARA Management Worksheet (N/A)				
• Other (N/A)				

PROJECTS: CHARACTERIZATION OPERATIONS AND ENGINEERING			
		Signature	**Date**
Cog/Field Engineer	D. D. Wanner	Dale D Wanner	5/16/00
Cog/Field Mgr.	J. S. Schofield	John Schofield	5/17/00
Quality Assurance	M. L. McElroy	M. L. McElroy	5/15/00
Safety	LA Flowers ~~C. D. Jackson~~		5/15/00
Characterization Projects	R. M. Boger		5/17/00
Project Manager	J. D Criddle, jr.		5/17/00
Characterization Ops	J. F. Sickels		5-17-00
Design Authority	G. P. Janicek		05/17/2000
Design Engineer	F. R. Reich	F. R. Reich	5/15/00