

AUG 27 1996

## ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
1. EDT 617998

2. To: (Receiving Organization) Characterization Project Operations (75100)		3. From: (Originating Organization) Characterization Equipment Design (75230)		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: Core Sampling / FGWL Tanks		6. Cog. Engr.: E. J. Waldo		7. Purchase Order No.: N/A	
8. Originator Remarks: ETN-96-003 This report documents the completion of the formal design review for the Rotary Mode Core Sampling (RMCS) Exhauster modifications for flammable gas tanks. The RMCS Exhauster modifications are intended to support core sampling operations in waste tanks requiring flammable gas controls.				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: 200 General	
11. Receiver Remarks: THIS IS A BASELINE DOCUMENT				12. Major Assm. Dwg. No.: N/A	
				13. Permit/Permit Application No.: N/A	
				14. Required Response Date: 8/15/96	

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 Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-WM-DRR-056	ALL	0	DESIGN REVIEW REPORT for RMCS EXHAUSTER MODIFICATIONS FOR FLAMMABLE GAS TANKS	SQ	1	1	

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	4. Review	1. Approved		4. Reviewed no/comment			
		2. Release	5. Post-Review	2. Approved w/comment		5. Reviewed w/comment			
		3. Information	6. Dist. (Receipt Acknow. Required)	3. Disapproved w/comment		6. Receipt acknowledged			

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G)	(H)	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G)	(H)
1	1	Cog.Eng: EJ WALDO	<i>EJ Waldo</i>	8/21/96	S7-12	Design Engr: JD ROBINSON	<i>JD Robinson</i>	8/21/96	S7-12	1	1
1	1	Cog. Mgr: DW HAMILTON	<i>DW Hamilton</i>	8/20/96	S7-12	WF WHITE	<i>WF White</i>	8/20/96	H6-11	1	1
1	1	QA: ML MCELROY	<i>ML Mcelroy</i>	8/14/96	S7-07	GJ BOGEN	<i>GJ Bogen</i>	8-15-96	S7-03	1	1
1	1	Safety: JA HARVEY	<i>JA Harvey</i>	8/14/96	S7-07	RA HUCKELDT	<i>RA Huckeltd</i>	8/20/96	R3-01	1	1
1	1	Env: KS TOLLEFSON	<i>KS Tollefson</i>	8/14/96	S7-01	JR KRISOVICH	<i>JR KrISOVICH</i>	8/20/96	R1-56	1	1
1	1	Design Auth: DW HAMILTON	<i>DW Hamilton</i>	8/20/96	S7-12	JE CORBETT	<i>JE Corbett</i>	8/19/96	S7-12	1	1
1	1	Chair: RJ BLANCHARD	<i>RJ Blanchard</i>	8/20/96	S7-12						

18. JE CORBETT Signature of EDT Originator 8/17/96		19. JG BURTON Authorized Representative Date for Receiving Organization 8/26/96		20. DW HAMILTON Cognizant Manager Date 8/29/96		21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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# DESIGN REVIEW REPORT for RMCS EXHAUSTER MODIFICATIONS FOR FLAMMABLE GAS TANKS

**J. E. Corbett**

Westinghouse Hanford Company, Richland, WA 99352  
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 617998  
Org Code: W75230  
B&R Code:

UC:  
Charge Code: N4HBB  
Total Pages: *3635 plus 9/27/96*

**Key Words:** RMCS Exhauster, Core Sampling, Flammable Gas Watch List, Rotary Mode Core Sampling, Formal Design Review, Design Review Report

**Abstract:** This report documents the completion of the formal design review for the Rotary Mode Core Sampling (RMCS) Exhauster modifications for flammable gas tanks. The RMCS Exhauster modifications are intended to support core sampling operations in waste tanks requiring flammable gas controls. The objective of this review was to approve Engineering Change Orders and new drawings, at the 100% design completion state. The conclusion reached by the review committee was that the design was acceptable and efforts should continue toward fabrication and delivery.

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*[Signature]* *8/27/96*  
Release Approval Date  
Release Stamp

DATE:	SEARCHED	3
STA: 4	INDEXED	
AUG 27 1996		

**Approved for Public Release**

**DESIGN REVIEW REPORT**

**for**

**RMCS Exhauster Modifications for Flammable Gas Tanks**

**Issued by:**

**J. E. Corbett, Senior Engineer**

**Tank Waste Remediation System  
Characterization Project**

**August 1996**

## TABLE OF CONTENTS

1.0	SCOPE . . . . .	1
2.0	BACKGROUND . . . . .	1
3.0	SUMMARY . . . . .	2
4.0	GENERAL DESIGN DESCRIPTION . . . . .	3
5.0	MODIFICATION DESIGN DESCRIPTION . . . . .	3
6.0	LISTING OF REVIEW MATERIALS . . . . .	4
7.0	SA COMPLIANCE MATRIX . . . . .	4
8.0	DESIGN REVIEW CHECKLIST . . . . .	6
9.0	REVIEW COMMENT RECORDS . . . . .	6
10.0	CONCLUSIONS AND OPEN ITEMS . . . . .	7
11.0	DOCUMENTATION . . . . .	7

## ACRONYMS

ATP	acceptance test procedure
CED	Characterization Equipment Design
CED	Characterization Field Engineering
CFR	Code of Federal Regulations
CPO	Characterization Project Operations
CFM	cubic feet per minute
DRR	design review report
ECN	engineering change notice
EP	Engineering Practices
FDC	functional design criteria
FGWL	flammable gas watch list
HEPA	high efficiency particulate air (filter)
OTP	operability test procedure
RCR	review comment record
RMCS	rotary mode core sampling
WHC	Westinghouse Hanford Company

## **RMCS Exhauster Modifications for Flammable Gas Tanks, Final Design Review**

### **1.0 SCOPE**

This report documents the completion of the formal design review for Rotary Mode Core Sampling (RMCS) Exhauster modifications for flammable gas tanks, hereafter referred to as the "the RMCS Exhauster modifications." The RMCS Exhauster modifications are intended to support core sampling operations in waste tanks requiring flammable gas controls. This review included preliminary and final review of new drawings, and engineering change notices (ECN's) for existing drawings, considered to be at the 100% design completion state. These documents are listed in section 6.0.

This document and the formal design review are in support of design modifications to the core sampling systems used by Characterization Project Operations (CPO). The RMCS Exhauster modifications are required to expand the scope of core sampling to include Flammable Gas Watchlist (FGWL) tanks, as well as any other tanks with flammable gas controls. The objective of this review was to provide a formal design verification consisting of a systematic overall review and evaluation of the RMCS Exhauster modifications. Design verification is performed to insure equipment function, personnel safety, and compliance with WHC-CM-6-1, *Standard Engineering Practices*, section 2.2.4, and the quality assurance requirements of 10 CFR 830.120. Acceptance of the design is required prior to operational use on any waste tanks requiring flammable gas controls. RMCS sample truck modifications and the flammable gas detector interlock design are evaluated in separate design reviews and are not part of this report.

### **2.0 BACKGROUND**

The Rotary Mode Core Sampling (RMCS) systems were designed for initial deployment to FeCN tanks, with later modifications intended to allow for deployment to Flammable Gas Watch List (FGWL) tanks. These modifications include mechanical and electronic components designed for intrinsic safety, and part replacement where required for material compatibility with hazardous environments. The modifications include replacing or adding equipment to ensure that electrical components which are not classified for use in flammable atmospheres are isolated from potentially flammable atmospheres. This was accomplished by replacing these components with components approved for use in flammable atmospheres, and controlling the potential for flammable atmospheres where possible to isolate non classified electrical components from the hazard. The modifications also include part replacement where required for material compatibility associated with hazardous environments. A functional design criteria (WHC-SD-WM-FDC-048) was used to establish the basis criteria for the modifications.

### 3.0 SUMMARY

The design review committee was selected in accordance with EP 4.1 and is documented in section 11.0 of this report. A preliminary design review was not required due to the nature of the modifications required. A kickoff meeting for a 100% level design review was held on May 2nd, 1996. This meeting served as the final design review briefing. Design and testing requirements, and design drawings were provided at this briefing. Applicable portions of WHC-SD-WM-SAD-035 Rev. 0, *A Safety Assessment of Rotary Mode Core Sampling in Flammable Gas Single Shell Tanks*, and WHC-SD-WM-ETP-182, *Engineering Task Plan for RMCS Exhausters*, were given to the design review committee members.

The close-out meeting was held on May 16th. Three ECN's were approved for release and five new drawings were approved for fabrication use under development control. The configuration control method chosen for the equipment fabricated to new drawings follows the requirements of EP-2.4, *Development Control Requirements* as contained in WHC-CM-6-1, Standard Engineering Practices. Of the six review comment records (RCR's) submitted for this meeting, two were "no comment" RCR's, and three were closed out at the meeting. The remaining RCR was to be closed after information given during the meeting was confirmed and included in the disposition. During a subsequent review of the design by the CFE cog engineer, a requested design change was made which changed the aforementioned RCR disposition. The RCR was updated and closed on June 7th. The design change is described in a "post review communication" message. For a complete listing of RCR's, see section 9.0 of this report. Meeting minutes, post review communication messages, and the completed design review checklist, are attachments to section 11.0 of this report.

After the completion of the close-out meetings, the conclusion reached by the review committee was that the design of the RMCS Exhauster modifications was acceptable and efforts should continue toward fabrication and delivery. A listing of open items can be found in section 10.0.

#### 4.0 GENERAL DESIGN DESCRIPTION

In response to Characterization Program sampling schedule needs, modifications to existing core sampling equipment were kept to a minimum where practical. Changes were made primarily to equipment that can be exposed to potentially flammable gases during sampling of FGWL tanks, including the fan motor, heater, and in flow instrumentation. New equipment and modifications were designed to interface with existing core sampling equipment.

The existing RMCS Exhauster was designed to filter and remove the additional gas volume from RMCS operations, to comply with emissions regulations and safety requirements. The exhauster is connected to the riser by a flexible connector. This flexible connector leads directly to a heater that maintains airstream temperature above its dewpoint. The tank vapor then moves to a prefilter located in the filter housing immediately upstream of two high efficiency particulate air (HEPA) filters in series. Vapor is moved through the system by a direct driven fan/motor combination which provides a constant nominal flow of 200 cfm. After passing through the HEPA filters, the exhaust gas is released to the atmosphere through a four-inch diameter stack. All information monitored is recorded on a data logger located in the exhauster instrumentation cabinet.

The existing RMCS exhauster will shut down automatically when tank pressure falls below -3 inches water gage (wg), when exhaust stack flow increases above 250 cfm or falls below 150 cfm, or if pressure across the HEPA filter bank exceeds a predetermined value. A connection between truck and exhauster provides truck operators with an indication that the exhauster has shut down and causes the sample truck to initiate a programmed shutdown.

#### 5.0 MODIFICATION DESIGN DESCRIPTION

On the exhauster skid, the modifications include replacing the blower/motor unit with a fan and motor combination designed to be used in a flammable gas atmosphere, through the use of selected fan materials and the addition of a nitrogen purge to improve the isolation of the motor from the fan. Other changes to the skid include; modifying the high efficiency particulate air (HEPA) filter housing differential pressure switches, new data input connectors to the internal data logger, installation of a new humidity instrument and other intrinsically safe in-flow instrumentation, replacing the electrical heating element with a hot water heat exchanger fitted into the existing heater housing, removing the electric heater control panel, and adding a water heater. In addition, a hot water heater and fan motor purge gas control panel are fabricated and installed onto the exhauster skid.

Other exhauster modifications include; adding pressure transducer mounts on the tank riser duct connections, providing a stack assembly for the breather riser vent, and upgrading the flexible duct, support stands and adapter rings to enhance grounding capabilities;

## 6.0 LISTING OF REVIEW MATERIALS

The following ECN's were reviewed and approved as part of the formal design review:

ECN #	DESCRIPTION
628744	Modifies H-2-821455 to show incorporation of flammable gas mod's to exhauster assembly; new flexible duct, water heater, new fan/motor, intrinsic safety barriers, new instrumentation, and flammable gas riser attachment.
632390	Modifies H-14-030122 to show electrical layout changes to exhauster.
632406	Modifies H-2-821456 to show changes to exhauster skid for incorporating attachment of flammable gas mod's

The following new drawings (rev. 0) were reviewed and approved for fabrication, under development control requirements, as part of the formal design review:

DRAWING #	TITLE
H-14-100739	ROTARY MODE CORE SAMPLING EXHAUSTER HEATER ASSEMBLY
H-14-100740	MISC DETAILS ROTARY MODE CORE SAMPLING FLAMMABLE GAS EXHAUSTER
H-14-100741	REGULATOR ASSY ROTARY MODE CORE SAMPLING FLAMMABLE GAS EXHAUSTER
H-14-100742	BREATHING VENT STACK ASSEMBLY
H-14-100771	FLAMMABLE GAS TANK EXHAUSTER INTERLOCK LOOP DIAGRAM

## 7.0 SA COMPLIANCE MATRIX

The table on the following page was used as a tool for determining which safety requirements from the SA (WHC-SD-WM-SAD-035, Rev. 0) are design criteria for the design modifications being reviewed. Each credited design safety feature listed in the SA is shown on the left side of the table. The corresponding implementing document(s), shown on the right side of the table, is generally the ECN or new drawing which incorporates the safety feature into the RMCS design for flammable gas tanks. In many cases, where the implementing document is shown as "existing," the design feature was incorporated in the existing design for the RMCS system, and no modification is required. The table applies to the entire RMCS system; however, only the exhauster safety features are applicable to this design review (the remaining information is shaded). Other design reviews use the same table, as applicable to other components of the RMCS system.



#	CHAPTER 6 - SAFETY FEATURES	IMPLEMENTING DOCUMENT
1	Material compatibility (Off-site)	ECN 831116, 631126, H-2-690142, memo 75230-96-001 rev. 2
2	Spark resistant tools (NA)	Administrative Control (Procedure)
3	Grounding and bonding (NA)	ECN 626742 and approved grounding procedure
4	Radiological controls (NA)	Existing - Exhauster housing <100mR on contact
5	Riser sleeve (Off-site)	ECN 626706 (H-2-690128, H-2-690131)
6	Drill string spray washer (NA)	Existing
7	Flashed DS interface lubricant (NA)	Existing
8	Pneumatics (off clamp) (Off-site)	In work
9	Drill bit configuration - sharp (Off-site)	Existing - certified by USBM testing
10	Drill centering cone (NA)	Existing
11	Cherrylin seal between drill bit & sampler (NA)	Existing
12	Core sampler and drill string components (Off-site)	# TBD
13	Sniffing ports (NA)	Existing (H-2-626513)
14	Change-out assembly (NA)	Existing
15	Cable spray washer (NA)	Existing
16	Purge flow limitation (Off-site)	Existing
17	Original speed limitation (Off-site)	Existing
18	Downforce limitation (Off-site)	Existing
19	Drill string penetration rate (Off-site)	ECN 626740
20	Hydraulic bottom detector (Off-site)	Existing
21	Wellbore function (Off-site)	Existing
22	Hydrostatic head (NA)	Existing
23	Truck position (Off-site)	Existing
24	Stabilizing jacks (NA)	Existing
25	Quill rod adapter (Off-site)	ECN 631126
26	Grapple hoist assembly (Off-site)	ECN 626712, 626742
27	Grapple (sample actuator) (Off-site)	Existing
28	Grapple insertion (NA)	Existing
29	Grapple hoist cable tension (NA)	Existing
30	Shielded receiver assembly (Off-site)	ECN 626742, 626707, 626713
31	SR tube (NA)	Existing
32	SR view port (NA)	Existing
33	SR hoist cable tension (NA)	Existing
34	Remote latch unit (Off-site)	H-2-690142, ECN 626706, 626711, 626714, 626715
35	RLU insertion (NA)	Existing
36	RLU position indicator (NA)	Existing
37	Exhauster Operation (Off-site)	ECN 632390
38	Exhauster intrinsic safety (Off-site)	ECN 626744
39	Exhauster PLC	ECN 632390
40	Exhauster duct (Off-site)	ECN 626744
41	Exhauster heater (Off-site)	H-14-100739
42	Exhauster fan and motor assembly (Off-site)	ECN 626744
43	Inlet breather stack (Off-site)	H-14-100742
44	Tank pressure detection (Off-site)	Existing, and H-14-100521
45	Flammable gas detector (Off-site)	H-14-100523
46	X-ray containment (NA)	VI File; internal memo 75230-96-006
47	DS nitrogen purge supply (Off-site)	Existing
48	Nitrogen hydrostatic head supply (NA)	Existing
49	Riser sleeve nitrogen purge supply (NA)	H-2-690128, ECN 626706, ECN 626741
50	Unique connections (NA)	H-2-690128, ECN 630017
51	Truck PLC (Off-site)	ECN 623775
52	Audible and visual annunciation (NA)	ECN 623775
53	Shutdown interlock (Off-site)	Existing

## 8.0 DESIGN REVIEW CHECKLIST

Formal design reviews, as described in WHC-CM-6-1, Standard Engineering Practices, are required to use a design review checklist that has been customized for the review. The checklist for this review was developed by the design review committee. The checklist was satisfactorily completed during the close out meeting and is listed as an attachment to section 11 of this report. Item #38 of the checklist requires verification of the correct application of NDE methods. This is to be accomplished by a QA review during work package closeout, and is considered an open item. Work package closeout is a part of the normal course of business for equipment fabrication and modification, and is therefore not assigned as an action item for the design review committee. All open items from the checklist are discussed in section 10.0 of this report.

## 9.0 REVIEW COMMENT RECORDS

The following table is a listing of all RCR's received during the design review. All RCR's were dispositioned and signed off as closed. A copy of each RCR is included as an attachment to section 11.0 of this report.

### RCR Status, 6/7/96

#### *Design Review RMCS Exhauster Mod's for Flammable Gas Tanks,*

<u>REVIEWER/DATE/NUMBER</u>	<u>RESP. ENGINEER</u>	<u>RCR STATUS</u>
McElroy/0506/1	Jim Robinson	closed 5/16/96
White/0508/1	Jim Robinson	closed 5/16/96
Kriskovich/0509/1	Jim Robinson	closed 6/7/96
Huckfield/0515/1	Jim Robinson	closed 5/15/96
Tollefson/0516/1	N/A	closed 5/16/96
Huda/0516/1	N/A	closed 5/16/96

## 10.0 CONCLUSIONS AND OPEN ITEMS

With the approval of this report, the formal design review for the "RMCS Exhauster Modifications for Flammable Gas Tanks" is completed. The following open items were noted during the design review. These items are scheduled to be completed as part of the normal course of business and are not action items for the design review committee. Therefore, these items are NOT considered to be "open action items" as described in WHC-CM-6-1, EP-4.1, paragraph 2.3.3.2, "Documentation of Action Item Completion."

OPEN ITEM: ATP/OTP testing to demonstrate requirements/operability (CED/CFE)

OPEN ITEM: Operation and maintenance procedures revised to reflect modifications (CFE)

OPEN ITEM: Close out fabrication and modification work packages (CPO)

The following action items were noted during the design review. These "open action items" will be closed in accordance with the requirements described in WHC-CM-6-1, EP-4.1

ACTION ITEM: Release of new drawings (listed in section 6.0); assigned to CED

ACTION ITEM: Revision of WHC-SD-WM-FDC-025 and WHC-SD-WM-SDD-035 to incorporate flammable gas modifications; assigned to CED

The conclusion reached by the design review committee is that the design of the RMCS Exhauster modifications is acceptable. There are no further action items for the review committee.

## 11.0 DOCUMENTATION

The following items are provided as attachments to this report:

1. Listing of design review committee members
2. Design Review Checklist
3. Copies of RCR's
4. Meeting Minutes & Post Review Communication

Review copies of all ECN's and drawings provided to committee members for review are available in the design review file. All released documentation referenced in the report will be available using the controlled document number located in the text where the document is cited.

ATTACHMENT 1

Design Review Committee Members

Author: Roy J Blanchard at -WHC128  
Date: 04/29/96 09:40 AM  
Priority: Urgent  
Receipt Requested  
TO: Rick A Huckfeldt at -WHC83  
TO: William F White at -WHC133  
TO: Greg J Bogen  
TO: Jerry A Harvey at -WHC83  
TO: Mohammed E (Huda) Huda at -WHC272  
TO: Michael L McElroy at -WHC235  
TO: James R Kriskovich at -WHC339  
TO: John E Corbett  
TO: Roy J Blanchard  
TO: Dennis W Hamilton at -WHC117  
TO: James D (Jim) Robinson at -WHC82  
CC: Richard E Raymond at -WHC15  
CC: Shafik H Rifaey at -WHC305  
CC: John M Garcia at -WHC289  
CC: Linda M Calderon at -WHC89  
CC: Thomas L Moore at -WHC133  
CC: James S (Jim) Lee at -WHC117  
CC: Traci L Smith

Subject: FORMAL DESIGN REVIEW MEETING - RMCST EXHAUSTER MODIFICATIONS

----- Message Contents -----

The formal design review "Kick-off" meeting will be held on Thursday, May 2, 1996 at 1:00pm - 2:30pm in room G133 in the 2704HV building. The addressees are considered part of this Design Review Committee, i.e.,

Rick Huckfeldt.....Fire Protection  
Bill White.....Electrical Engineering  
Greg Bogen.....Mechanical Eng. & Operations  
Jerry Harvey/Mohammed Huda....Safety  
Mike McElroy.....Quality Assurance  
Jim Kriskovich.....Exhauster Design Authority  
John Corbett.....Design Review Secretary Roy  
Blanchard.....Design Review Chairman Dennis  
Hamilton.....Design Review Cog. Manager Jim  
Robinson.....Cog. Design Engineer

Please let John Corbett 372-2001 know if you cannot support this meeting.

Thank You, Roy Blanchard

Author: John E Corbett at -WHC128  
Date: 05/02/96 07:26 AM  
Priority: Normal  
TO: Rick A Huckfeldt at -WHC83  
TO: William F White at -WHC133  
TO: Greg J Bogen  
TO: Jerry A Harvey at -WHC83  
TO: Mohammed E (Huda) Huda at -WHC272  
TO: Michael L McElroy at -WHC235  
TO: James R Kriskovich at -WHC339  
TO: Roy J Blanchard  
TO: Dennis W Hamilton at -WHC117  
TO: James D (Jim) Robinson at -WHC82  
CC: Richard E Raymond at -WHC15  
CC: Shafik H Rifaey at -WHC305  
CC: John M Garcia at -WHC289  
CC: Linda M Calderon at -WHC89  
CC: Thomas L Moore at -WHC133  
CC: James S (Jim) Lee at -WHC117  
CC: Traci L Smith  
TO: Kathleen S Tollefson at -WHC304  
CC: Gail L Laws at -WHC304  
Subject: Reminder: FORMAL DESIGN REVIEW MEETING - RMCST EXHAUSTER MOD

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Bill White.....Electrical Engineering  
Greg Bogen.....Mechanical Eng. & Operations  
Jerry Harvey/Mohammed Huda....Safety  
Mike McElroy.....Quality Assurance  
Jim Kriskovich.....Exhauster Design Authority  
John Corbett.....Design Review Secretary Roy  
Blanchard.....Design Review Chairman Dennis  
Hamilton.....Design Review Cog. Manager Jim  
Robinson.....Cog. Design Engineer

ADDITION:

Kathy Tollefson.....Environmental Engineering

Please let John Corbett 372-2001 know if you cannot support this meeting.

Thank You, Roy Blanchard

ATTACHMENT 2

Design Review Checklist

# FORMAL DESIGN REVIEW CHECKLIST RMCS Exhauster Modifications for Flammable Gas Tanks

Documents Reviewed: H-14-100739, H-14-100740, H-14-100741, H-14-100742, H-14-100771;  
W21590AA Rev 1 (vendor drawing);  
ECN 628744 (H-2-821455), ECN 632390 (H-14-030122),  
ECN 632406 (H-2-821456);  
and applicable portions of WHC-SD-WM-SAD-035.

Item	Review Consideration	Yes	No	NA	Remarks
1	Have assumptions necessary to perform the design task been adequately described and are they reasonable? Where necessary, have assumptions been identified for reverification when the design task has been completed?	X			
2	Have the appropriate Quality Assurance requirements been specified?	X			
3	Were sources of information identified?	X			
4	Does the design meet the established requirements or design criteria?	X			FDC WILL BE REVISED
5	Does the design meet established requirements for associated system physical and functional interfaces?	X			SDD WILL BE REVISED
6	Are there any interface problems?		X		
7	Has appropriate consideration been given to use of standardized parts, materials and processes, and have engineering standards and criteria been specified properly in the design?	X			
8	Can the equipment be readily assembled/disassembled as designed?	X			
9	Does the design minimize overall cost to the extent practicable?	X			
10	Are the specified materials compatible with each other and the environmental conditions to which the material will be exposed?	X			BASED ON FAN MATERIAL
11	Are the applicable codes, standards and requirements, including revisions, properly identified and are their design requirements provided for?	X			
12	Have modifications to commercial grade items and any associated verification operations or tests been appropriately documented?	X			
13	Have qualified and certified parts been specified?	X			
14	Does the design meet functional requirements? Steady-state and transient conditions?	X			ATP/OTF WILL DEMONSTRATE FUNCTIONAL REQUIREMENTS ARE MET
15	Will the design meet the following environmental conditions? a. Temperature (steady-state and transient) b. Flow (steady-state and transient) including induced vibration c. Pressure (steady-state and transient) d. Natural phenomena e. Nuclear radiation	X			SEISMIC NOT REQ'D
16	Is the design producible by conventional means?	X			



# FORMAL DESIGN REVIEW CHECKLIST RMCS Exhauster Modifications for Flammable Gas Tanks

Item	Review Consideration	Yes	No	NA	Remarks
17	Are the specified construction materials resistant to the following as applicable:  a. Moisture b. Oxygen c. Acids d. Salts e. Radiation	X X X X X		X	NOT REQ'D
18	Do the clearances and tolerances take into account the effects of age and wear?	X			
19	Are mechanical tolerances within the limits of normal shop practice?	X			
20	Are assembly clearances adequate?	X			
21	Have allowable leakages been specified?	X			
22	Have non-corrosive materials been used where required?	X			BASED ON CURRENT EXHAUSTER EXPERIENCE
23	Does the design avoid any materials unproven for use in the anticipated environment?	X			
24	Can the assembly be stored for extended periods of time without degrading effects?	X			BASED ON CURRENT EXHAUSTER EXPERIENCE
25	Has the design appropriately considered maintenance, operation and reliability, including maintenance procedures and techniques, unique maintenance requirements and frequencies?	X			
26	Are coatings (or finishes) compatible with the expected environment? With expected usage?	X			
27	Are surface finish requirements the least stringent possible?	X			
28	Are required tolerances, fabrication techniques, processes, etc., consistent with standard practices?	X			
29	Can the design and its parts be easily inspected for conformance to engineering specifications?	X			
30	Has adequate accessibility been provided for in-service inspection?	X			
31	Does the design meet all established safety requirements?	X			
32	Has an acceptable level of radiation exposure been defined?	X			<100mR HUMAN EXPOSURE
33	Have personnel radiation protection requirements been considered and identified?	X			
34	Have necessary features been provided to maintain personnel radiation exposure as low as reasonably achievable?	X			
35	Can the hardware be adequately disposed of after use if it is radiologically or chemically contaminated?	X			
36	Have adequate acceptance criteria been specified and are the verification methods stated appropriately?	X			
37	Have welding, bolting, joining methods been adequately specified?	X			
38	Have NDE methods been applied correctly?	X			NEED TO VERIFY
39	Will a separate Acceptance Test Spec/Procedure be required? - If yes, identify responsible organization(s) for preparation and issue (TBD if unknown)	X			CED TO PROVIDE
40	Have human factors engineering and operability been considered?	X			
41	Is an Operation and Maintenance Manual required? If so, have requirements been clearly identified?			X	INFO IS IN SDD & VI FILE

# FORMAL DESIGN REVIEW CHECKLIST RMCS Exhauster Modifications for Flammable Gas Tanks

Item	Review Consideration	Yes	No	NA	Remarks
42	Are current operating documents (procedures, specifications, etc.) applicable to the design or are changes necessary?		X		CEP WILL PROVIDE REVISIONS
43	Does the design use engineered safety and operational protections to avoid an excessive risk-taking dependence on administrative infallibility?	X			
44	Are reliability requirements specified? If so, does the reliability analysis of the design meet the specified reliability requirements?		X		NOT REQ'D
45	Have all credible non-standard conditions been properly considered?	X			
46	Is the equipment, system, or facility operable?	X			TO BE DEMONSTRATED BY OTP
47	Is the equipment design adequate to implement the proposed maintenance philosophy?	X			
48	If any development work is needed, has it been funded or performed?	X			
49	Has drawing traceability been provided?	X			
50	Has the need for safety analysis of this design been determined by Safety?	X			
51	Is the equipment, system, or facility covered by an existing Safety Analysis Report? If not, complete the safety analysis in time to incorporate findings of the analyzed in the design.	X			WHC-SD-WM-SAD-035
52	Does the design match the intended (and possible abnormal) methods of operation of the system or facility?	X			
53	Is a single point failure analysis required?	X			COMPLETED IN SA
54	Are all indication lights and electrical control considered fail-safe?	X			
55	Do the design media, format, content, reproducibility, and quality comply with all applicable requirements (including Hanford Plant Standards and referenced codes and standards)? Are the drawings structured to meet the needs of users after project completion?	X			
56	Have availability of power requirements for the project been verified?	X			
57	Have requirements for providing as-built drawings been specified?	X			
58	Is the design in compliance with applicable regulatory requirements and/or WHC regulatory commitments?	X			
59	Are design tolerances appropriate and applied in a cost-effective manner and are standard materials and material sizes used where practicable?	X			
60	Is all computer software and data properly identified and controlled?			X	

ATTACHMENT 3

Copies of RCR's

# REVIEW COMMENT RECORD (RCR)

1. Date 5/6/96	2. Review No. CP96-016
3. Project No. N/A	4. Page 1 of 2 / 5/6/96

5. Document Number(s)/Title(s) EXHAUSTER-DESIGN REVIEW PACKAGE REVIEW	6. Program/Project/ Building Number CHARACTERIZATION PROJECT	7. Reviewer M.L. MCELROY	8. Organization/Group CPE QA/75820	9. Location/Phone 2704HV/B-122 373-5588
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17. Comment Submittal Approval:

10. Agreement with indicated comment disposition(s) 11. CLOSED

Organization Manager (Optional) M.L. MCELROY Reviewer/Point of Contact M.L. MCELROY

Date 5/16/96 Date 5/16/96

Author/Originator [Signature] Author/Originator [Signature]

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.	Minor comments (editorial & TYPOS) on the submitted drawings were red-lined and submitted to the Design Review Secretary.		Accept all comments. For information: All power, signal, and sample lines will be left in place after components are removed from the instrument cabinet. No energized connections will be exposed and sample lines will be capped. The vendor modified drawing will identify lines that are left in place.	Closed

# REVIEW COMMENT RECORD (RCR)

1. Date 5/8/96		2. Review No. WF9658-1	
3. Project No. RMCST		4. Page 1 of 3	

5. Document Number(s)/Title(s) Core Sampling Ventilation Equipment Design Modification	6. Program/Project/ Building Number 200 G	7. Reviewer William F. White	8. Organization/Group Instrument Systems Integration/74430	9. Location/Phone H6-11/ 376-8925
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17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s) Date: 5/16/96	11. CLOSED
---------------------------------	--	------------

Organization Manager (Optional) Date: 5/16/96		Reviewer/Point of Contact Date: 5/16/96	
Author/Originator Date: 5/16/96		Reviewer/Point of Contact Date: 5/16/96	

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	H-14-030122, Sheet 1, Zone C2: General Note 1 should reference the '96 Edition.		Accept	
2	H-14-030122, Sheet 1, Zone D1: PDS-1 (PDS-2202) location SHOULD BE "F2-3"		Accept	
3	H-14-030122, Sheet 1, Zone D2: "Unattended" Shutdown Relay and Switch location SHOULD BE "A4-3"		Accept	
4	H-14-030122, Sheet 1, Zones D3 & D1: Heat Trace Thermostat, Hydraulic Lift, Heat Trace Connection Box and JBX-3 are shown on this diagram and nowhere else on the drawing. The references to locations don't have anything related to the titles.		Heat trace thermostat and connection box information added to sheet 2. The hydraulic lift termination information has also been added to sheet 2. JBX-3 removed from sheet 1.	
5	H-14-030122, Sheet 1, Zone D3: AMC Power Connection Box location SHOULD BE "E7-2"		Accept	
6	H-14-030122, Sheet 1, Zone D3: Field Located/Mounted Equipment location SHOULD BE "E5-2"		Accept	
7	H-14-030122, Sheet 1, Zone D4: Distribution Panel (DP-2201) location SHOULD BE "D6-1"		Accept	

REVIEW COMMENT RECORD (RCR)					1. Date	2. Review No.
					5/8/96	WFW9658-1
					3. Project No.	4. Page
					RMCST	2 of 3
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		
8	H-14-030122, Sheet 1, Zone D4: XFWR location SHOULD BE "E5-1"		Accept			
9	H-14-030122, Sheet 1, Zone E1: All the items to the left of JBX-2 (connected by conduit) should have the location CHANGED from "-3" to "-2"		Accept			
10	H-14-030122, Sheet 1, Zone E2: External Data Logger Connection Box location SHOULD BE "D2-2"		Accept			
11	H-14-030122, Sheet 1, Zone E4: Fan Motor (EF-2201) location SHOULD BE "C8-1"		Accept			
12	H-14-030122, Sheet 1, Zone E4: Variable Frequency Drive location SHOULD BE "E7-3"		Accept			
13	H-14-030122, Sheet 1, Zone E4: Fused Disk (DS-2201) location SHOULD BE "E7-1"		Accept			
14	H-14-030122, Sheet 1, Zone F4: The location call out for JBX-1 SHOULD BE "F7-1" rather than "E7-2"		Accept			
15	H-14-030122, Sheet 2, Zone D2: The thermocouple attaches to TB2 terminals 18 and 19. There does not seem to be any connection "on the other side" of the terminal board. Also, are those terminals made of the proper materials to prevent a false reading?		The "other side" of the terminal board is vendor supplied equipment. The wiring is detailed in VI 22660. Thermocouple extension wiring is copper. It is acknowledged that there may be a small temperature offset due to this short (less than two feet) wire run. This measurement is for reference only and will meet our accuracy requirements as is.			
16	H-14-030122, Sheet 2, Zone E7: The Distribution Panel location SHOULD BE "D6-1" not "D2-2"		Accept			

REVIEW COMMENT RECORD (RCR)				1. Date	2. Review No.
				5/8/96	WFH9658-1
				3. Project No.	4. Page
				RMCST	3 of 3
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	
17	H-14-030122, Sheet 3, Zone E6: (P6) From Panel Board location SHOULD BE "B7-1"		Accept		
18	H-14-030122, Sheet 3, Zone F7: Fused Disconnect location SHOULD BE "D8-1"		Accept		

## REVIEW COMMENT RECORD (RCR)

1. Date 5-9-96			2. Review No. 1		
3. Project No. RMCS Exhauster			4. Page 1 of 2		
5. Document Number(s)/Title(s) WHC-SD-WM-SAD-035, H-14-100741, 100740, 100742, 100739, 030122, 100771, H-2-821455, 821455		6. Program/Project/ Building Number ROTARY MODE CORE EXHAUSTER	7. Reviewer J. R. Kriskovich	8. Organization/Group Design Authority	9. Location/Phone MO-253/373-3686
17. Comment Submittal Approval:		11. CLOSED			
Organization Manager (Optional)		10. Agreement with indicated comment disposition(s) Date 6-7-96 Reviewer/Point of Contact James D. Mc... Author/Originator James D. Mc...			
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	Fan Material, has there been any vapor analysis that shows whether the AI needs to be coated.	JRK	No. When the first unit was placed into service a list of airstream constituents was sent to Cincinnati Fan to identify any compounds that would deteriorate fan components. None were identified. The results of this review are not formally documented.		
2	Design Rqmts., are we using those listed in the SA, or will there be a change to the existing Functional and Design Requirements doc.	JRK	The initial driver are those requirements in the SA. The FDC will be revised to include the SA requirements.		
3	The pressure switches for controlling purge flow. What if the line gets plugged, it will still have pressure, but no flow to the fan.	JRK	It is not clear from the drawing how the piping will be routed. A detail has been added to H-2-821455, sheets 2 and 4 that shows connection to the fan purge box. The detail shows that the pressure is measured at a point other than the supply line.		



REVIEW COMMENT RECORD (RCR)				1. Date 5-9-96	2. Review No. 1
				3. Project No. RMCS Exhauster	4. Page 2 of 26
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	
4	Page 2-19 of the SA. What other controls are place to ensure if the fan speed controller fails that the fan will not go to max.	JRK	There are two separate controls. First, stack flow is limited to 250 CFM (power to the variable speed drive is removed if flow exceeds this value). Second, variable speed drive power is limited (in the PLC internal programming) to 60% of full power. 60% full power equates to slightly less than nine inches water gage vacuum. Variable speed drive failures occurring to this point have resulted in either the exhauster failing to start or an immediate shutdown. There have been no instances of fan motor run away.		
5	Page 2-20. What is the Safety Class of the pressure switches for the tank, as well as what is the Safety Class in general for the other equipment?	JRK	In flammable gas applications tank pressure is monitored by the interlock. The interlock is part of a Safety Class I system. In the system, safety class criteria is achieved through redundancy, testing, and analysis. The switches were procured as SC 3.  The non FGWL tank pressure switch is Safety Class 2. The switch was procured as a commercial grade item.  On the exhauster anything that may be considered an extension of the tank boundary (duct, hepa filters and housing) upstream of the second hepa filter is Safety Class 2. Other components used in FGWL upgrades (fan, regulator, heat exchanger) were procured as Safety Class 3 items.		

## REVIEW COMMENT RECORD (RCR)

1. Date 5-9-96				2. Review No. 1	
3. Project No. RMCS Exhauster				4. Page 3 of 26	
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	
6	WMC-SD-WM-ETP-182, page 14. The test for the heater section. This test should be completed with the entire housing connected to the filter housing. Reason being, how do you verify the connection of the heater plenum to the housing. We may be able to get around this, but we will need to discuss this.	JRK	<p>The intent is to perform the test to the same parameters as original, i.e., just the heater housing.</p> <p>I would propose that the test be run as written. At it's conclusion the heater would be reconnected to the housing, the inlet housing isolation valve closed. The heater and joint would be pressurized and a simple bubble test would be run on the joint.</p> <p>If this leak down criteria is used in conjunction with an isolation valve, the test would become a valve test rather than a housing test as the valve leak down criteria is not as stringent as housing criteria.</p> <p>I will attach a copy (as an exception to Test Results) of the joint test result to the Functional Test results. The test will be available for your review prior to Design Review sign off.</p>		
7	Page 18, in the body of the SA, it states the heater gets the RH of the air down to 80%, however, here you state 70%. Why the difference and why not 70%.	JRK	Both values are correct. The State requires shutdown if relative humidity exceeds 80%. The design and testing requirements for the heater were set at 70% to provide a performance margin.		
8	Page 19, How are you simulating the differential pressure across the HEPA filters for the pressure switch.	JRK	The purpose of the test is to confirm that the pressure switch shutdown wiring is completed correctly and functional. To this end the pressure differential is introduced at the switch rather than across the filter.		

REVIEW COMMENT RECORD (RCR)				1. Date 5-9-96	2. Review No. 1
				3. Project No. RMCS Exhauster	4. Page 4 of 26
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	
9	H-2-821456. It looks like the seal pot is being changed, why is that being changed?	JRK	<p>The seal pot change is in the breather and drain arrangement. The seal used to vent to the tank. The concern was that in a gas release event the seal pot would fill with flammable gas (via the vent). To preclude this, the seal pot now vents to atmosphere through a small HEPA filter.</p> <p>The seal pot used to drain through heat traced hoses. The LANL SA would not allow the use of any heat traced hoses (even if qualified hoses could be found) connected to the tank.</p>		
10	H-2-821456, Sheet 2, I do not have a copy of the IS, only the WAS. As a result, I am not sure what the change is on the sheet.	JRK	There were no changes to this sheet. The IS will be the same as WAS.		

REVIEW COMMENT RECORD (RCR)			1. Date 5-9-96	2. Review No. 1
			3. Project No. RMCS Exhauster	4. Page 5 of 26
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
11	<p>H-2-821455, Sheet 3. There are two separate tank controls for Flammable and Non-Flammable. 1) Couldn't we make a standard design to support both?</p> <p>2) How do we know that we will get the correct exhauster for the task (i.e., flammable exhauster for flammable tank, non-flammable for non-flammable tank.)</p>	JRK	<p>1) The Dwyer pressure switch and the Ashcroft transducers will be combined on one stand with a Magnehelic for local display. On non watchlist tanks the transducers will not be used. On watchlist tanks both the pressure switch (it is being used with an intrinsic barrier) will be used with the transducers.</p> <p>2) Ultimately all three RMCS exhausters will be qualified. There are both engineered and administrative controls to prevent a non approved exhauster from being used on a flammable gas tank. In addition, non approved exhausters have large warning signs in place that read: "Not for Use on Flammable Gas Tanks." The administrative controls (RMCS equipment set up and operation) emphasize the correct equipment alignment. The controls also establish a number of operator actions, such as initial (before sampling begins) calibration of the flammable gas sensor. If the sensor is not present, the procedure can't be completed. The engineered controls insure that the equipment is connected correctly. For example, the interlock will not energize the exhauster unless it is connected to the exhauster. Non modified exhausters have no connection port. To operate a non qualified exhauster on a flammable gas tank procedural violations would have to occur and engineered barriers must fail.</p>	

REVIEW COMMENT RECORD (RCR)				1. Date 5-9-96	2. Review No. 1
				3. Project No. RMCS Exhauster	4. Page 6 of 26
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	The redline method for shop work. Is there a work plan, as required by EP-2.4 for explaining how the work will be controlled, etc...	JRK	The redline method is detailed in WHC-SD-WM-ETP-182, Rev.1, Paragraph 3.2.2.1.		









**ATTACHMENT 4**  
**Meeting Minutes**

# MEETING MINUTES

SUBJECT: Final Design Review Briefing, RMCS Exhauster Mod's for Flammable Gas Tanks

TO:  
Distribution

BUILDING  
N/A

FROM:  
J. E. Corbett

CHAIRMAN  
R. J. Blanchard

DEPARTMENT-OPERATION-COMPONENT  
Characterization Equipment Design (CED)

AREA  
200E

SHIFT  
Day

DATE OF MEETING  
5/2/96

NUMBER ATTENDING  
See Roster

The meeting was chaired by Roy Blanchard. A list of attendees is contained on the attached meeting roster. The meeting opened with introductions. The design review committee assignments are as follows:

Rick Huckfeldt.....Fire Protection  
Bill White.....Electrical Engineering  
Greg Bogen.....Mechanical Eng. & Operations  
Jerry Harvey/Mohammed Huda....Safety  
Mike McElroy.....Quality Assurance  
Jim Kriskovich.....Exhauster Design Authority  
John Corbett.....Design Review Secretary  
Roy Blanchard.....Design Review Chairman  
Dennis Hamilton.....Design Review Cog. Manager  
Jim Robinson.....Cog. Design Engineer  
Kathy Tollefson.....Environmental Engineering

Gail Laws attended for Kathy Tollefson (the meeting roster is attached). The method and schedule for the design review was explained by John Corbett. Comments are expected in the form of electronic RCR's to the design review secretary by Friday, 5/10. The formal design review checklist, and the SA compliance matrix will be sent out to all committee members. Jim Robinson discussed the background and general overview of the design mod's (a copy of the agenda is attached). Detail drawings were given to committee members to review. Robinson explained the changes to be made on existing exhauster drawings, via engineering change orders, and described new items being fabricated to new drawings. A copy of the functional test and applicable portions of the SA were included in the design review package as reference information. Greg Bogen noted that in addition to training on flammable gas mod's, many operators will need to be requalified for RMCS.

The next meeting is scheduled for Thursday, May 16th, at 1 PM.

## LISTING OF DRAWINGS HANDED OUT

NEW: H-14-100739, H-14-100740, H-14-100741, and H-14-100742.

CHANGE: H-14-030122, H-14-100771, H-2-821455, H-2-821456, and W21590AA.

## MEETING MINUTES

**SUBJECT:** Final Design Review Closeout, RMCS Exhauster Mod's for Flammable Gas Tanks

<b>TO:</b> Distribution		<b>BUILDING</b> N/A	
<b>FROM:</b> J. E. Corbett		<b>CHAIRMAN</b> R. J. Blanchard	
<b>DEPARTMENT-OPERATION-COMPONENT</b> Characterization Equipment Design (CED)	<b>AREA</b> 200E	<b>SHIFT</b> Day	<b>DATE OF MEETING</b> 5/16/96
			<b>NUMBER ATTENDING</b> 10

The meeting was chaired by Roy Blanchard, and included the following attendees:

RJ BLANCHARD	GJ BOGEN
JE CORBETT	RA HUCKFELDT
ME HUDA	JR KRISOVICH
ML McELROY	JD ROBINSON
KS TOLLEFSON	WF WHITE

The meeting followed the attached agenda. Jim Robinson discussed all RCR comments, presented their dispositions, and described the related drawing changes. Robinson also described a modification to the inlet stack design to address transportation & handling concerns brought up by Greg Bogen. Bill White noted that heat trace and hydraulic lift callouts needed to be corrected on the electrical drawing, and was satisfied after the proper redlines were made to the drawing. In regards to Jim Kriskovich's RCR concern of using the wrong exhauster on a flammable gas watch list tank, Roy Blanchard noted that the PRC reviews all work packages for work on flammable gas watchlist tanks. Kriskovich agreed to close out the RCR, on the condition that Blanchard's note be included in the disposition. The dispositions were discussed and all RCR's were closed.

After closing out the RCR's, the design committee approved the modification ECN's (#628744, 632390, & 632406) for release. Blanchard noted that, as design review chairman, he would be signing for the review committee, and Robinson would sign for design authority.

With no further comments on the new exhauster equipment/details, the design committee approved the new drawings (#H-14-100739, H-14-100740, H-14-100741, H-14-100742, and H-14-100771) for fabrication use under development control. Blanchard noted that the after fabrication, the drawings would be available for design committee review and approval for release.

The SA compliance matrix was reviewed to verify all exhauster design features credited in the SA were included in the design review or were part of the existing design. There were no exhauster related open items on the matrix.

The design review checklist was revised to include all comments made during the meeting. Revision of the FDC and SDD, completing ATP and OTP, and providing revised procedures were listed as open items. Robinson agreed to verify that a review for any applicable NDE method was performed.

The design review closed without further discussion.

Author: Roy J Blanchard at -WHC128  
Date: 05/21/96 02:22 PM  
Priority: Normal  
TO: Michael L McElroy at -WHC235  
TO: John E Corbett  
CC: James R Kriskovich at -WHC339  
CC: Mohammed E (Huda) Huda at -WHC272  
CC: Kathleen S Tollefson at -WHC304  
CC: James D (Jim) Robinson at -WHC82  
CC: Jon S Sparks  
CC: Dennis W Hamilton at -WHC117  
Subject: QA REVIEW OF EXHAUSTER MEETING MINUTES

----- Message Contents -----

Gentlemen:  
(and I use the term loosely)

I just completed reviewing the minutes to the RMCS Exhauster Mod's Design Review meeting minutes, and have only one comment. The comment is in regards to Jim Kriskovich's RCR concern of using the wrong exhauster on a flammable gas watch list tank.--The resolution to the RCR was that the "PRC reviews all work packages for flammable watchlist tanks."

After talking with John Kimbrough, Production Control Mgr., I found out that this is no longer true!

Jim brings up a good point that should be explored further and put to rest, formally.

Mike Mc

Mike, Thanks for your heads-up finding. Your absolutely right, and I will get with Jim Kriskovich and resolve (hopefully) his concern.

Roy Blanchard

Author: John E Corbett at -WHC128  
Date: 06/04/96 11:28 AM  
Priority: Normal  
TO: James D (Jim) Robinson at -WHC82  
TO: Roy J Blanchard  
TO: Greg J Bogen  
TO: John E Corbett  
TO: Jerry A Harvey at -WHC83  
TO: Rick A Huckfeldt at -WHC83  
TO: Mohammed E (Huda) Huda at -WHC272  
TO: James R Kriskovich at -WHC339  
TO: Michael L McElroy at -WHC235  
TO: Kathleen S Tollefson at -WHC304  
TO: William F White at -WHC133  
CC: Judith G (Judy) Burton at -WHC12  
CC: Dennis W Hamilton at -WHC117  
CC: Gail L Laws at -WHC304  
CC: James S (Jim) Lee at -WHC117  
Subject: Re: Exhauster Modifications

----- Message Contents -----

To: Exhauster Mod Design Review Committee Members:

Due to a request by the exhauster cog. engineer, Eric Waldo, a change was made to the reviewed design after the committee's close-out meeting. Because the changes are not extensive, the committee chairman, Roy Blanchard, is prepared to approve the changes without the need for an additional committee review meeting. If this is acceptable to you, no action is necessary, as your consent will be assumed and the chairman will act for the committee. You will be sent a copy of the released ECN.

The change is described below by Jim Robinson. I will ensure that the change is noted in the design review report. Your approval of the report will document your approval of the final design. If you wish to have more information on this change, or do not accept the approval method described above, please contact the review secretary, John Corbett, immediately.

Eric and I met several times over the next few days and discussed the exhauster flammable gas modifications. Eric had one request; that there be only one set of pressure gages at the riser. Jim Kriskovitch had provided much the same comment in his RCRs. Eric was not satisfied with my response. So, I have combined both the flammable gas pressure transducers and the Dwyer pressure switch on one stand at the riser. You may recall that the Dwyer pressure switch is an explosion proof unit and is protected by an intrinsic barrier. The intent is that on flammable gas tanks pressure information will go to both the exhauster and the interlock. Shut down on low pressure may occur from either source.

That change is the only difference between what the committee reviewed and what is now on the drawings.

AUG 28 1996

## ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT

615546

2. To: (Receiving Organization) <b>Distribution</b>	3. From: (Originating Organization) <b>Data Automation Engineering and Services</b>	4. Related EDT No.: <b>N/A</b>
5. Proj./Prog./Dept./Div.: <b>WICS</b>	6. Cog. Engr.: <b>W. R. Markillie</b>	7. Purchase Order No.: <b>N/A</b>
8. Originator Remarks: <b>None.</b>	9. Equip./Component No.: <b>N/A</b>	
		10. System/Bldg./Facility: <b>N/A</b>
11. Receiver Remarks:	12. Major Assm. Dwg. No.: <b>N/A</b>	
		13. Permit/Permit Application No.: <b>N/A</b>
		14. Required Response Date: <b>N/A</b>

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 Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-WM-UM-028		0	User Manual for the Waste Information and Control System	Q	1,2	1	

16. KEY									
Approval Designator (F)		Reason for Transmittal (G)				Disposition (H) & (I)			
E, S, G, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval	4. Review	5. Post-Review		1. Approved	4. Reviewed no/comment		
		2. Release	6. Dist. (Receipt Acknow. Required)			2. Approved w/comment	5. Reviewed w/comment		
		3. Information				3. Disapproved w/comment	6. Receipt acknowledged		
17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)									
(G)	(H)	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN
Reason	Disp.								
1	1	Cog. Eng. W.R. Markillie	<i>[Signature]</i>	7/29/96	E6-21				
1	1	Cog. Mgr. S.G. Sterling	<i>[Signature]</i>	7/29/96	E6-21				
1	1	QA K.C. McBride	<i>[Signature]</i>	7/29/96	H8-41				
5		Safety W.D. Pollard	<i>[Signature]</i>		T6-04				
		Env.							
1	1	Customer S.K. Shirley	<i>[Signature]</i>	7/29/96					
18. Signature of EDT Originator		19. Signature of Receiving Organization		20. Cognizant Manager		21. DOE APPROVAL (if required) Ctrl. No.			
<i>[Signature]</i> W.R. Markillie		<i>[Signature]</i> S.K. Shirley		<i>[Signature]</i> S.G. Sterling		[ ] Approved			
7/29/96		7/29/96		7/29/96		[ ] Approved w/comments			
						[ ] Disapproved w/comments			

# User Manual for the Waste Information and Control System

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U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 615546

UC: 2070

Org Code: 57B00

Charge Code: F0G3R4

B&R Code: EW3130030

Total Pages: 22

**Key Words:**

WICS

Waste Information Control System

UM

**Abstract:** This document describes the user instructions for the WICS application.

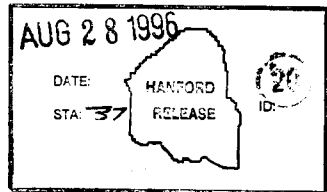
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Release Approval

Date

*Janis Bishop* 8-28-96



Release Stamp

**Approved for Public Release**

**USER MANUAL**  
**FOR THE**  
**WASTE INFORMATION AND CONTROL SYSTEM**

June 1996

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## TABLE OF CONTENTS

Section	Page
<b>1.0 INTRODUCTION</b>	4
1.1 Purpose	4
1.2 Scope	4
<b>2.0 SYSTEM ENVIRONMENT</b>	4
2.1 Minimum System Requirements	4
2.2 HLAN Access	5
2.3 Security	5
<b>3.0 WORKSTATION OPERATION</b>	5
3.1 Installation	5
3.2 Startup and Shutdown	6
3.3 General Navigation and Tips	6
3.3.1 Menu	6
3.3.2 Toolbar	7
3.3.3 Hints	7
3.4 Viewing Data	8
3.4.1 Folders	8
3.4.2 Drop-Down List Definitions	8
3.5 Reports	8
3.5.1 Reports Selection	8
3.5.2 Report Destination	9
3.5.3 Record Selection	9
3.5.4 Previewing Reports	9
3.5.5 Printer Setup	10
3.6 Data Entry and Editing	10
3.6.1 Edit Mode	10
3.7 Administrative Functions	12
3.7.1 Master Data	12
3.7.2 Access Control	12
3.8 HCU Data Transfer	13
<b>4.0 HCU OPERATION</b>	13
4.1 Installation	13
4.2 Startup and Shutdown	13
4.3 General Navigation and Tips	14
4.4 Data Entry and Editing	14

<b>4.5 Transferring of Data</b> .....	14
<b>5.0 ERROR MESSAGES</b> .....	15
<b>6.0 ASSISTANCE</b> .....	17
<b>7.0 GLOSSARY</b> .....	18
<b>8.0 PROBLEM/ENHANCEMENT FORM</b> .....	21

## **USER MANUAL FOR THE WASTE INFORMATION AND CONTROL SYSTEM**

### **1.0 INTRODUCTION**

#### **1.1 Purpose**

This manual is intended to provide users with enough detailed instruction to guide them through the Waste Information and Control System (WICS) operations.

#### **1.2 Scope**

This document satisfies the requirement for user documentation as stated in the WICS Work Plan WHC-SD-WM-WP-269. It is intended to provide detailed instructions regarding use of the available functions of the Waste Information and Control System (WICS). The user manual shall include system environment requirements, limited equipment operation instructions, and system operation instructions.

This document does not provide detail regarding the system requirements, system design, or testing procedures of the WICS. Nor does it make reference to any specific data.

### **2.0 SYSTEM ENVIRONMENT**

#### **2.1 Minimum System Requirements**

The WICS minimum hardware requirements are as follows:

- 386 or higher IBM-Compatible Personal Computer (PC), 486 is recommended.
- A hard disk drive configured as "C:".
- An available serial port for HCU communications.
- At least 8 megabytes of RAM
- At least 30 megabytes free disk space on "C:".
- Hanford End System Operating Environment (ESOE).

## **2.2 HLAN Access**

The WICS needs to utilize PC hardware that is End System Operating Environment (ESOE'd) and utilizes the Hanford Local Area Network (HLAN). The system also needs to have access to a LaserJet III or compatible printer connected either locally or via the network.

## **2.3 Security**

The WICS shall be installed on authorized user machines only. Security access for passwords and privileges are assigned and is the responsibility of the system administrator.

## **3.0 WORKSTATION OPERATION**

### **3.1 Installation**

The WICS application, hereafter referred to as WICS, can be installed by following instructions provided by a README.TXT file that the current WICS system administrator will provide. Since this application runs on the HLAN, it is susceptible to inoperability due to network problems. Section 6.0, Assistance, discusses the contacts for system support.

Before starting the installation process, ensure that the minimum system requirements are being utilized. Read the README.TXT file thoroughly and print it out for reference during installation.

Following the README.TXT instructions will set up a Windows Program Group entitled "WICS Phase 1" consisting of the following icons: Installer, WICS, Readme, and a Change Log.

When double clicked, the "Installer" icon will initiate the "Effortless Software Distribution" with several WICS application choices for installation. If WICS is being reinstalled, select "WICS"; this is the production version. Continue to follow the instructions required to exit the window. The installation program may suggest a restart of the computer when the install is complete. This is only necessary if the application is being installed for the first time.

When finished, double click on the "WICS" icon to launch the application; select the user name and password that was assigned by the WICS System Administrator. To access the application as a "Read Only" user, select that name in lieu of a user name and enter no password. Section 3.2, Startup and Shutdown, discusses how to logon and logoff WICS.

The Readme icon displays a file that contains information that was provided by the WICS System Administrator to begin this process. In addition to installation help, it also provides useful

information on configuring a computer for better performance. The Change Log is an automated notebook that logs WICS application functionality changes for reference and information.

## **3.2 Startup and Shutdown**

### **STARTUP**

First, launch the WICS application by double clicking on the WICS icon. When the logon dialog appears, select the appropriate name from the drop-down list or type the name exactly as it appears on the drop-down list and provide the password. If a user just wants to view the WICS data, and perform no editing, then select the Read Only name in lieu of a user name and enter no password. Upon correct entry of their name and assigned password, the application is displayed. If either the name or password is entered incorrectly the user is given an option to try again.

The application's pull-down menu consists of the following areas: Inner Container, Outer Container, HCU, Reports, Master Data, Help, and Exit. When a user has selected to any of these areas and the text cursor is flashing on an active field, it is referred to as in "focus". Focus is where the text cursor is located, not necessarily where the mouse pointer is located. Focus can also be changed by using the tab and shift-tab keys or clicking on any object or field that can assume focus.

### **SHUTDOWN**

To log off WICS, the user can either select from the main menu "Exit" option or double-click the system menu icon. Once exit is initiated, select "Yes" to continue with the exit and the system will return to Windows.

## **3.3 General Navigation and Tips**

### **3.3.1 Menu**

The pull-down menu options are located at the top of the window. The options are: Inner Container, Outer Container, HCU, Reports, Master Data, Help, and Exit. Many of these options have a pull-down menu that can be initiated by selecting an option with the arrow and pressing the left side of the mouse. Selection is made by highlighting the choice and releasing the left side of the mouse. When menu options appear as "grayed-out" (instead of sharp black) they are either not available for that privilege or that function is currently in use. Some menu options have an associated function key or keys that, when pressed, invokes the same operation. The keystroke alternatives are typically identified to the right of the menu item title. Also, functions typically have an underlined letter somewhere in the menu option title. To initiate these functions press the ALT key and the underlined letter key simultaneously.

### 3.3.2 Toolbar

The toolbar is located below the pull-down menu options. The toolbar consists of icons and navigation buttons. Functions represented by icons can be initiated when clicked. The icons remain present and are operable throughout various forms. The navigation buttons are used for the different forms and folders when moving about records. The icons present will depend upon functions available in context with the view and user privileges. Below are the icons and navigation buttons in the order as they appear on the toolbar:

< navigation button:	Moves to the first record.
< navigation button:	Moves to the prior record.
> navigation button:	Moves to the next record.
>  navigation button:	Moves to the last record.
Plus Sign button :	Inserts a new record.
Minus Sign button:	Deletes a record and all associated data.
Triangle button:	Enables edit mode for the current record.
Checkmark button:	Posts the record's data entry to that point.
Crossout button:	Cancels an edit, if entry has not been posted.
Swirl Arrow button:	Refreshes the screen with newly posted entries.
Copy Record icon:	Copies the current record.

### 3.3.3 Hints

The hint boxes are yellow boxes below certain controls and fields that give a text descriptor. When the mouse pointer is placed over an object for one second, the hint box appears. It is removed when the mouse pointer is repositioned.

### **3.4 Viewing Data**

Upon entering any form, the mode is always view, unless the user has placed the current record in another state (Insert or Edit). If a field has focus, any keystroke shall automatically place the current record in edit mode. Changes are saved when the Checkmark button is pressed, or when the user attempts to move off of the current record.

#### **3.4.1 Folders**

There are several Folders available throughout WICS with each Folder having a tab for ease of selection. Each Folder contains different data associated with WICS. For example, the Chemical Component Folder on the Inner Container Logbook Form has information regarding chemical components for the current inner container.

#### **3.4.2 Drop-Down List Definitions**

To the right of some fields there will be a boxed "down arrow". When clicking on the "down arrow" a drop-down list will appear. The drop-down lists will display the mandatory selections for data entry purposes; an entry must be from this list. The exception is the Procedure Number field located in the Inner Container Logbook. The pull-down list for Procedure Number provides standard procedure numbers only. The user may type a different procedure number if the desired one does not exist in the list. If a field has no boxed "down arrow" to the right, then data entry is made from the keyboard and is limited only to the data type of that field (e.g., integer, alphanumeric, etc.).

The drop-down list definitions are viewable when selecting from the pull-down menu "Master Data". The list definitions are updated by the System Administrator and are viewable to all privileges. The navigation buttons function the same as those used on the toolbar. However, the edit control buttons are different for non-administrator privileges than they are for administrator privileges.

### **3.5 Reports**

To get into the Report mode, select from the pull-down menu "Reports". This will present the Report form.

#### **3.5.1 Reports Selection**

There are many types of reports that can be printed in WICS. To select a report, choose the desired report from the drop-down list titled, "Select a Report".

For some reports, a list of available records shall appear with navigation buttons and a “Chosen” list. In order to select which records are desired for the report output, use the navigation buttons (i.e., >, <, >>, or <<) to move the records to the “Chosen”/Print List. See section 3.5.3, Record Selection.

Other reports shall prompt the user to input valid information. For example, the Disposal Request Report requires the user to enter a HMC Letter Number along with selecting specific records.

### **3.5.2 Report Destination**

Once the desired records have been moved to the “Chosen”/Print List, a report destination must be selected. A report can be sent to the screen, or to the printer. Regardless of the destination, the “Print” button must be clicked for the report to be generated and the “Preparing Report...” message will be displayed.

If sending a report to the printer, after the report has been prepared, the reports will print out. Some reports require legal size paper, check the “Print Manager” option in Windows if a problem arises.

Sending a report to the screen is discussed in section 3.5.4., Previewing Reports.

### **3.5.3 Record Selection**

Records can be selected from the “Available” list for inclusion on the “Chosen”/ Print List. In order to select which records are desired for the report output, use the navigation buttons (i.e., >, <, >>, or <<) to move the records to the “Chosen”/Print List area.

As mentioned, when all parameters are selected, click the “Print” button. A “Preparing Report...” message will be displayed while the required data is retrieved.

### **3.5.4 Previewing Reports**

A user can preview their reports on the screen as mentioned above by selecting “Screen”. Once the report is available on the screen, it can be viewed by the navigation buttons located at the top of the screen. These icons and navigation buttons are as follows:

Positive Magnifying button: Zooms in the report by ten percent.

Negative Magnifying button: Zooms out the report by ten percent.

Half sheet paper button: Displays report at full width.



Full sheet paper button:	Fits report in window.
< navigation button:	Moves to the prior page.
> navigation button:	Moves to the next page.
Printer Setup button:	Initiates the Windows printer setup dialog box.
Printer button:	Initiates a print of the report shown.
Door Close button:	Closes the report preview.
Zoom %:	Zooms to the user-defined percent.
Page:	Moves to the user-defined page.
Page of Page:	Denotes page number of how many pages are in the report.

### **3.5.5 Printer Setup**

In order to set network and non-network printers click the “Printer Setup” button from the Reports screen or the Print Preview screen. This will enable a user to make appropriate selections based upon the need of the report output.

## **3.6 Data Entry and Editing**

### **3.6.1 Edit Mode**

To start an edit session, the user can 1) click the triangle (edit) button from the toolbar, or 2) set focus on an editable field and begin data entry. To post changes, click the Checkmark button from the toolbar, or attempt to move to a new record. The Cancel button will disregard any changes to the current record and place the record in view mode. Changes can be cancelled only before posting them.

User privileges are required for editing each of the different screens. If a user does not have privileges for a screen, the editing control buttons will not be visible.

Data may only be input into focus areas on the form. As mentioned, focus is where the text cursor is located, not necessarily where the mouse pointer is located. Focus can also be changed by using the tab and shift-tab keys.

If the focus is within a table (Chemical Components, et. al.) with a vertical slider bar (consisting of a boxed up and down arrow in a rectangle with slider), this implies that a user may enter more than one set of data or record. To enter more than a single data set, press the "Insert" key on the keyboard or click on the Insert button on the toolbar. This will prompt for a new data set. Or use tab at the last entry of a table to create a new entry.

WICS data entry is performed via; 1) input from the keyboard, 2) selection from drop-down lists, or from 3) data transferred from the HCU. Checks are performed on the data entered to ensure consistency. The toolbar also has icons for data entry:

Plus Sign button :	Inserts a new record.
Minus Sign button:	Deletes a record and all associated data.
Triangle button:	Places the current record in Edit mode.
Checkmark button:	Posts the record's data entry to that point.
Crossout button:	Cancels an edit, if entry has not been posted.
Swirl Arrow button:	Refreshes the screen with newly posted entries.

Inserting, editing and deleting of any data requires a privilege other than readonly.

#### Inserting a Record

To insert a new record, the user must select the Plus Sign icon. When this option is selected, the different fields on the current screen are presented blank ready for data entry. The user should fill in the data for each of the focus areas, but is not mandatory.

#### Deleting a Record

To delete the current record, the user must select the Minus Sign icon. A "Warning" message is presented so a user can select No to cancel the record deletion.

Note that a new blank record created in a table will be automatically deleted if no value is entered and the user does not focus to another field within the record. Blank records can be deleted using CTRL-DEL if necessary.

### 3.7 Administrative Functions

#### 3.7.1 Master Data

The Master Data definitions support the drop-down list information. Select from the pull-down menu “Master Data” to initiate the Definitions form. This form is available to non-administrative users and shows the drop-down lists available during all sessions (i.e, locations and origins).

If the privilege is set up for System Administrator or Limited user, then all the navigation buttons are available; if not, then the “\*” indicates that these buttons are available to non-administrative users for viewing this form:

< navigation button:*	Moves to the first entry.
< navigation button:*	Moves to the prior entry.
> navigation button:*	Moves to the next entry.
>  navigation button:*	Moves to the last entry.
Plus Sign button:	Starts a new entry.
Triangle button:	Initiates an edit.
Checkmark button:	Posts the entry.
Crossout button:	Cancels an edit, if entry has not been posted.
Swirl Arrow button:	Refreshes the screen with newly posted entries.

For data integrity purposes, master data may not be deleted from the WICS application. To compromise for this, every piece of master data has a field titled “Active” associated with it. Setting this property to “True” enables the data to be displayed in the drop-down lists. Conversely, setting the property to “False” removes the data from the drop-down lists. This setting may only be modified by a “System Administrator” or “Limited” user.

#### 3.7.2 Access Control

The function(s) that a user is limited to are defined by the System Administrator. Full privileges are granted to a System Administrator, and on the other hand, the Read Only user has the most limited privileges. The following are privileges that may be assigned by the System Administrator:

- 1) Read Only - View information (except user data).
- 2) General - Read Only privileges plus, insert and modify Inner Container Data and Outer Container Data, Send or Receive HCU data.
- 3) Limited - General privileges plus, insert, modify and delete Master Data (except user data).
- 4) System Administrator - All functions.

The System Administrator has the authority to assign new users, passwords, and privileges. The User Information form is used to assign new users, passwords, and privileges. A user must be assigned certain privileges from a System Administrator, including the System Administrator user.

### **3.8 HCU Data Transfer**

The user may choose to send or receive data from the HCU. To perform these functions, the user must select "HCU" from the pull-down menu, then select either "Send" or "Receive" depending on the desired option. A HCU must be properly seated into a cradle connected to the user's computer via a RS-232 cable. The user needs to verify the correct COM port, thus the port supporting the HCU cradle, is displayed on the HCU Send or Receive screen, and click the "OK" button. If the COM port is not correct, the user may change the value by simply entering the correct one.

Once the user has clicked the "OK" button on the workstation, the data transfer option on the HCU must be started. This is done by choosing either the "Configure Unit" option in conjunction with the "Send" option on the workstation, or the "Transfer Data" option in conjunction with the "Receive" option on the workstation. See Section 4.0 "HCU Operation" for more information regarding operation of the HCU.

Once the HCU data transfer is complete, the screen displayed on the workstation shall provide the user with information regarding the status of the transferred files.

## **4.0 HCU OPERATION**

### **4.1 Installation**

The installation of WICS on the HCU is permanent. Upgrades and changes must be performed by the WICS development team.

### **4.2 Startup and Shutdown**

The HCU may be started by simply pressing the "PWR" key. If the unit does not have a user actively logged in, a welcome screen should be visible. The user may press any key to continue.

Next, the user shall be prompted to enter their Hanford ID, this may be performed using the keyboard or integrated scanner. Upon entering a valid ID, the user shall be prompted to verify the date and time. After completing this step, the main menu is displayed.

Shutdown of the system is simply performed by selecting "Logon New User" from the main menu. The "PWR" key enables the user to power the system off.

### **4.3 General Navigation and Tips**

The HCU is a menu-driven application, thus the user must select which function to perform via menus. The main menu offers six separate choices, Inner Container, Outer Container, Configure Unit, Transmit Data, Logon New User, and Quit. Any option may be chosen by simply pressing the key corresponding to the appropriate number displayed on the menu. At this time, the "Quit" option is unavailable, and the user must select "Logon New User" to end a data collection session.

The Inner Container option produces a sub-menu with the following choices; Label Container, Weigh Container, Sample Waste, and Quit.

The Outer Container option produces a sub-menu with the following choices; Log New CIN, Outer Inventory, and Quit.

The Configure Unit option allows the user to download the current master data from the workstation. This data is used by the HCU to produce pick-lists for the data collector.

The Transmit Data option allows the user to send any collected data to the workstation. Once the data has been successfully sent to the workstation, it is erased from the HCU.

### **4.4 Data Entry and Editing**

Data entry on the HCU is performed by using either the keyboard or integrated scanner. Alphanumeric characters may be entered via the keyboard by pressing the "ALPHA" key and the desired characters. All data is accepted when the user presses the "ENTER" key.

A data entry session may be canceled by the user by pressing the "FUNC" key followed by the "7" key. This shall always present the preceding menu or function.

### **4.5 Transferring of Data**

Transferring of data may occur in two separate ways. First, data may be sent to the HCU from the workstation. This is referred to as "Configuring the Unit", and may be performed on the

HCU by selecting “Configure Unit”. It is initiated on the workstation by selecting HCU-Send. Each unit should be configured before a data collection session, or when the system administrator has changed the master data.

The function “Transmit Data” on the HCU sends collected data to the workstation. The function is initiated on the workstation by selecting HCU-Receive. Once data has been transferred from the HCU to the workstation, it is erased from the HCU.

Once the user starts a transfer session on the HCU, they have a limited amount of time to start the appropriate workstation function. Both the workstation and HCU must function at the same time, or one side shall produce an error.

## **5.0 ERROR MESSAGES**

One or more of the following are error messages are presented to the user when an error has occurred in the WICS application. Italics indicate where information is substituted into the message at run time. The error messages can be closed by clicking OK.

### Accumulation Date Required:

“An accumulation date is required for this location.”

This error message occurs when a user attempts to save a record that requires an accumulation date. An accumulation date is required based on the respective location. The user must modify the record or cancel the edit session.

### Checklist Warning:

“The {Checklist Name} Checklist for this CIN has not been completed.”

This error message occurs when a user attempts to complete a checklist, specified in {Checklist Name}, that is missing a prior checklist. For example, this error would result if the user attempted to complete the Drum Shipping checklist before completing the Drum Packing Checklist.

### Duplicate Entry:

“Duplicate Entry”

This error message occurs when a user attempts to save a record that already exists. The user must modify the record or cancel the edit session.

Field Value Required:

"Field value required. Field: {Fieldname}"

This error message occurs when a user attempts to save a record that requires certain data. The name of the required data element is specified by {Fieldname}. The user must modify the record or cancel the edit session.

HCU Terminated Error:

"Terminated with Error"

This error message occurs when a user attempts to communicate with the HCU and receives an error. Possible errors are: 1) No HCU in cradle 2) Invalid COM Port 3) Poor cable connection 4) Failure to start HCU. The user must press a key to continue.

Logon form error message:

"Incorrect password, do you wish to try again?"

This error message occurs when a user attempts to logon with an incorrect password that does not correlate to their user name. Remember, a user is assigned a password by the WICS System Administrator.

No Data Warning:

"No data to report."

This error message occurs when a user attempts to generate a report that contains no data.

## **6.0 ASSISTANCE**

For assistance regarding adding/deleting a user and user privileges for the WICS application, contact the WICS System Administrator. Also, contact the WICS System Administrator for problems relating to the WICS application.

For assistance regarding the HLAN and computer resource difficulties, contact the HLAN Network Administrator, Computer Technical Support, at 376-1234.

For questions regarding the WICS application, on-line Help assistance will be available in the very near future. In the following section, 7.0 Glossary, the on-line Help assistance messages are written in a dialog easily retrievable for the various forms containing the Help button. Questions regarding the use of the WICS application should be directed to the WICS System Administrator.



## 7.0 GLOSSARY

### 1st Level Help Boxes (Contents for Help)

The Contents for Help box is the 1st level help box that will be available from the pull-down menu "Help" and will display choices as shown below.

#### Contents for Help

Choices:

- 1) About the Application
- 2) Adding a New Record
- 3) Deleting a Record
- 4) Editing a Record
- 5) HCU
- 6) Master Data
- 7) Printing
- 8) Privileges
- 9) Reporting

Once a user has clicked on their selection, some choices will display their message, while others will bring out a new set of choices relating to the subject. Shown are the 2nd level help boxes displaying the expected choices or message(s).

### 2nd Level Help Boxes

- 1) About the Application message:  
WICS, Version XXX, Date, Data Automation Engineering and Services, © 1996, ICF Kaiser Hanford Co. All rights reserved.
- 2) Adding a New Record message:  
Select the Plus Sign icon. The fields are presented blank ready for data entry.
- 3) Deleting a Record message:  
1) Locate the record to be deleted 2) select the Minus Sign icon. The user must locate the record to be deleted first because the record that WICS is located on is the record recognized to be deleted. However, a "Warning" message is presented so a user can select "No" to cancel the deletion.

4) Editing a Record message:

To start an edit session, the user may 1) click on the “Diamond” (edit) button located on the tool bar or 2) place focus on an editable field and begin data entry. To end an edit session, click the “Checkmark” (post) button or attempt to move off of the current record.

5) HCU message:

To transfer data to the HCU, select “HCU” from the pull-down menu, then choose “Send”. A dialog window shall appear prompting the user for a COM port number. Once a number is entered, the user may press the OK button to begin the transfer. The HCU must be prepared to accept data. After the transfer is complete, the window shall be updated to display information regarding success of the transfer.

To transfer data from the HCU, select “HCU” from the pull-down menu, then choose “Receive”. A dialog window shall appear prompting the user for a COM port number. Once a number is entered, the user may press the OK button to begin the transfer. The HCU must be prepared to send data. After the transfer is complete, the window shall be updated to display information regarding success of the transfer.

6) Master Data message:

The drop-down list definitions support the drop-down list information. Select from the pull-down menu “Master Data” to initiate the Master Data Screen. This screen is available to non-administrative users and shows the drop-down lists available during all sessions (i.e, Limited and Read Only).

If the privilege is set up for a user with privileges other than “Read Only” then all the ‘editing/inserting/deleting’ navigation buttons are available. If the privilege is set up for a non-administrative user, then only the ‘move record’ navigation buttons are present.

7) Printing message:

In order to set network and non-network printers 1) click the “Printer Setup” button from the Reports or Report Preview screen. This will enable a user to make appropriate selections based upon a special need of the report output (i.e. different printer).

Although other options are also available when the “Printer Setup” selection is made, the page size and orientation selection *does not* needs to be setup for printing. Each report is already formatted for its orientation.

8) Privileges message:

The following privileges are defined:

- a) Read Only - View information (except user data).

- b) General - Read Only privileges plus, insert and modify Inner Container Data and Outer Container Data, Send or Receive HCU data.
- c) Limited - General privileges plus, insert, modify and delete Master Data (except user data).
- d) System Administrator - All functions.

The System Administrator is the only privilege that can select the "Users" folder. The User Information form is used to assign new users, passwords, and privileges.

9) Reporting message:

Contents for Reporting Help

Choices:

- a) Reports Selection
- b) Record Selection
- c) Previewing Reports

3rd level help boxes will show the following messages for each choice:

- a) Section 3.5.1 of this User's Manual.
- b) Section 3.5.3 of this User's Manual.
- c) Section 3.5.4 of this User's Manual.

**8.0 PROBLEM/ENHANCEMENT FORM**

If there are any areas in which a User sees possible improvements in WICS, send suggestions and input to the WICS System Administrator. The User should fill out the Request and Problem Information Table (see form below). The WICS System Administrator shall actively log these forms and will resolve and implement the appropriate solutions.

**Request and Problem Information Table****NOTE: Submitter Fills In Parts 1-8 (NON-GRAY)****FOR SYSTEM ADMIN. USE ONLY**1. SCR Type: ☐ Development ☐ Problem ☐ Enhancement

SCR Number:

2. Submitted By:

Software Program Name:

3. Date:

TPCN, W/O:

4. Project Name:

Current Ver/Rev:

5. Submitter's Priority ☐

(1= Critical 2= Very Important 3= Important 4= Inconvenient 5=Interesting)

6. Requested  
Completion Date:

7. Task/Change/Problem Title (One Sentence Description):

8. Detailed Description/Justification (Attach Additional Sheet If Necessary):

**FOR DAES & SYSTEM ADMINISTRATOR USE ONLY: Software Change Request and Problem Report Resolution Information**

Decision By:

☐ Accept ☐ Modify ☐ Reject ☐ Defer

Assigned To:

Target Release Date:

Solution Comments/Impact:

Software Programs, Modules or Files Affected:

Task Completed By:

Date:

Verified By:

Date:

Actual Release Version:

Date:

Closed By:

Date:

# DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Data Automation Engineering and Services	Date 7/9/96
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WHC-SD-WM-UM-028 "User Manual for the Waste Information and Control System"		ECN No.

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