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ENGINEERING DATA TRANSMITTAL

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(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	/	Design Authority W. F. ZUROFF	<i>[Signature]</i>	1/20/00	57-24
1	/	Design Agent B. R. JOHNS	<i>[Signature]</i>	1/19/00	57-24
1	/	Cog. Eng. B. R. JOHNS	<i>[Signature]</i>	1/19/00	57-24
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1	/	Safety F. A. ZAK	<i>[Signature]</i>	1/20/00	
		Env. N/A			
18. <i>[Signature]</i> B. R. JOHNS Signature of EDT Originator		19. <i>[Signature]</i> M. R. KOCH Authorized Representative for Receiving Organization		20. <i>[Signature]</i> W. F. ZUROFF Design Authority/Cognizant Manager	
Date: 1/19/00		Date: 1/19/00		Date: 1/20/00	
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ACCEPTANCE FOR BENEFICIAL USE PUMPING INSTRUMENTATION AND CONTROL SKID "M"

M. R. KOCH

CH2MHILL HANFORD GROUP, INC.

Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-96RL13200

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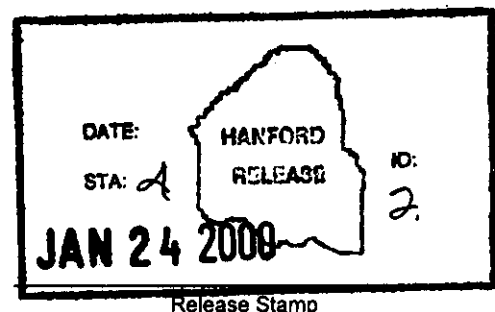
Abstract:

This document is a Final Acceptance for Beneficial Use (ABU) for the readiness of Pumping Instrumentation and Control (PIC) skid "M". All the testing and documentation for PIC skid "M" is completed and the skid is ready for use in the field for pumping of tank U-102.

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Date



Approved For Public Release

ACCEPTANCE FOR BENEFICIAL USE PUMPING AND INSTRUMENTATION CONTROL SKID "M"

1.0 INTRODUCTION

This is a final Acceptance for Beneficial Use (ABU) for Pumping and Instrumentation Control (PIC) skid "M". PIC skid "M" is ready for pumping tank U-102. All the testing and documentation has been completed as required on the ABU checklist. This ABU covers only the readiness of the PIC skid "M". Other U-farm preparations including dilution tank fabrication, portable exhauster readiness, leak detection, valve pit preparation, and the Operation Control Station readiness are not part of this ABU.

PIC skid "M" is a new skid fabricated and tested at Site Fabrication Services. The skid controls the jet pump and monitors various instruments associated with the pumping operation. This monitoring includes leak detection along the waste transfer route and flammable gases in the pump pit.

PIC skid "M" was modified in the field for installation of a combustible gas monitor which replaces the flammable gas monitors. A transmitter was added to the instrument enclosure. A gas bottle and tubing was added to the outside of the water cabinet to support the combustible gas monitoring system. The two 24vdc power supplies in the instrument enclosure were replaced with a single higher capacity 24vdc power supply.

2.0 DESCRIPTION OF WORK COMPLETED

2.1 ENGINEERING TASK PLAN

Engineering Task Plan (ETP) HNF-3828, revision 0 was written and issued to outline the work required for completion of the PIC skid projects. This document includes an estimated schedule for the completion of eleven PIC skids.

2.2 DESIGN CRITERIA

Functional design criteria document HNF-4481, revision 0 was prepared and issued. This document outlines the basic functional requirements for the PIC skid. The design is based upon PIC skids already in use in the field.

2.3 ACCEPTANCE TESTING

An acceptance test was performed upon completion of the fabrication of skid "M". The Acceptance Test Procedure (ATP) was provided in document RPP-5073, revision 0. The results of the testing are documented in RPP-5074, revision 0.

2.4 OPERATIONAL TESTING

Operational Test Procedure OTP-200-004, revision A-19 shall be completed for the testing of PIC skid "M". Most of the operational testing was completed in the shop under the ATP procedure, with the remaining testing completed upon set up at U-102

2.5 DESIGN DRAWINGS

Skid drawings have been released under ECN 651954. ECN 652569 modified skid "M" for installation of a Combustible Gas Monitor (CGM) instrument to replace the FGM. ECN 629591 is a supplemental ECN which changed the 24vdc power supplies to a single larger power supply to handle the CGM load. ECN 629585 is a supplemental ECN which changed some fittings for the CGM tubing.

2.6 INSPECTIONS

A pressure vessel inspection was performed on the air compressor and pressurized water tanks. This inspection verified proper ASME rated tanks and proper relief valves installation.

A National Electrical Code (NEC) inspection was performed on the electrical power equipment and wiring on the skid. A blue inspection sticker was placed on the inside of the door of the distribution panel indicating a satisfactory inspection.

2.7 SOFTWARE CONFIGURATION

Programs were written and installed on the PIC skid for the Programmable Logic Controller (PLC) and the Data Table Access Module (DTAM). These programs were based upon the existing programs installed in the PIC skid "K". For skid "M", these programs are documented in RPP-5236, revision 0, *PLC/DTAM SOFTWARE PROGRAMS FOR PUMPING AND INSTRUMENTATION CONTROL SKID "M"*.

2.8 TRAINING

PIC skid "M" is similar to PIC skids "K" and "L". Information for PIC skid "K" has been forwarded to the training department for incorporation into the continuing training program. No special training sessions will be required for the operators prior to startup of PIC skid "M" at U-102 since it is very similar to PIC skid "K". No special training is required for maintenance. The same type instruments and controls are used on the new skid as on skid "K".

2.9 OPERATING AND MAINTENANCE PROCEDURES

Operating and maintenance procedures have been updated for the deployment of PIC skid "M" in the field. The following is a list of procedures and data sheets that were updated for the operation and maintenance of the new PIC skid "M".

2.9.1 Operating Procedures

TO-505-105, (Pump operation including startup and shutdown)
TO-430-102, (Material Balance calculating)
ARP-T-501-001, (Alarm response guide)

2.9.2 Calibration Procedures

6-TF-509, *Pressure and Vacuum Gauges Calibration*
6-CVT-520, *Foxboro E69F Series Current to Pneumatic Signal Converter*
6-PCD-508, *Calibrate Pressure Switches*
6-PCD-361, *Foxboro Intelligent Pressure Transmitter*
6-PCD-524, *Omega Model PX880/PX881 Electronic Pressure Transmitter Calibration*
6-FCD-454, *Yokogawa Model AE14 Magnetic Flow Converter Calibration*
TF-FT-309-001, *Perform Saltwell Flush Water High Pressure Detection*
6-GENI-135, *General Calibration of Digital Indicator*
6-GM-484, *Calibrate Det-tronics Infiniti*

2.9.3 Data Sheets

WT-06437, SALW-PS-6004M: Air compressor control switch
WT-06438, SALW-LT-6003M: Water tank level transmitter
WT-06436, SALW-SGT-6001M: Specific gravity transmitter
WT-06455, SALW-FQIT-6001M: Magnetic flow converter
WT-06435, SALW-WFT-6002M: Weight factor transmitter
WT-06439, SALW-CONV-6001M: Current to pneumatic converter
WT-06449, SALW-PI-6001M: Water pressure on drip system
WT-06448, SALW-PI-6002M: Air pressure at low side weight factor dip tube
WT-06447, SALW-PI-6003M: Air pressure at low side specific gravity dip tube
WT-06446, SALW-PI-6004M: Air pressure at high side dip tube
WT-06444, SALW-PI-6006M: Air compressor pressure indicator
WT-06443, SALW-PI-6007M: After filter air pressure indicator
WT-06442, SALW-PI-6008M: Air pressure on water tank
WT-06445, SALW-PI-6005M: Air pressure to DOV
WT-06441, SALW-PI-6011M: Discharge pressure indicator
WT-06440, SALW-PI-6012M: Suction pressure indicator
WT-06451, SALW-PT-6014M: Jumper flush pressure transducer
WT-06454, SALW-PT-6013M: Recirculation flush pressure transducer
WT-06453, SALW-PT-6013M: Recirculation flush pressure transducer setpoint

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WT-06450, SALW-PT-6014M: Jumper flush pressure transducer setpoint
WT-06452, SALW-PT-6015M: Pressure transducer
WT-06456, SALW-PT-6011M: Discharge pressure transducer
WT-06457, SALW-PT-6012M: Suction pressure transducer
WT-06503, SALW-CGT-6001M: Combustible gas transmitter

Data sheets are being prepared for air compressor and water tank relief valve testing at five year intervals. Relief valves were initially tested during the ATP. These data sheets are not required prior to startup of U-102 pumping.

2.10 SPARE PARTS

The spare parts list has been updated to include parts for the new skid. This is documented in support document RPP-4853, revision 0. Spare parts stocking has not been completed.

2.11 VENDOR INFORMATION

Vendor information for the components on the new skid has been assembled and will be added to the existing Certified Vendor Information (CVI) file. The vendor file to be updated is VI 22726.

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ACCEPTANCE FOR BENEFICIAL USE					
	ENGINEERING	RESPONSIBLE		ADP	RESPONSIBLE
X	Engineering Task Plan	Engineering	X	Software Configuration Mgmt	Engineering
X	Activity Schedule	Engineering		System Requirement Spec.	
	FSAR Report			Software Design Description	
	Interim Safety Basis update			Software Validation/Verification	
	Safety Assessment				
	Safety Equipment List			TRAINING	
	Operational Safety Req.			Training Plan	
	Operational Safety Doc.			Training Manuals	
X	Design Criteria	Engineering	X	Training to Operating Crew (3)	Operations/Trng.
	System Design Description		X	Training to Maintenance Crew (3)	Maint/Trng.
	Test Plan/Specifications			Training Mock-Up	
X	Acceptance Test Procedure and Final Test Report	Engineering			
X	Operational Test Procedure (1)	Engineering			
X	Final Test Report (2)	Engineering		OPERATIONS/MAINT	
	Environmental Impact Statement			Operating and Maintenance Manuals	
	Environmental Report		X	Operating Procedures	*Eng/Proc. Wtr.
	Environmental Permit		X	Surveillance Procedures	*Eng/Proc. Wtr.
	Hazardous Waste Disposal Plan/Procedures		X	Calibration Procedures	*Eng/Proc. Wtr.
	Solid Waste Disposal Plan or Procedures		X	Preventative Maintenance Procedures	*Eng/Proc. Wtr.
	Stress/Seismic Analysis			Repair/Maintenance Procedure	
	Stress/Design Report			Functional Check Procedures	
	Design Specifications/Report		X	PM/S Datasheets	*Eng/Proc. Wtr.
	Equipment Specifications		X	Final Joint Safety walkdown by Operations, Engineering, maintenance, and Health Physics	Engineering
X	Procurement Specifications	Engineering#			
	Construction Specifications			QUALITY ASSURANCE	
	Essential Material Specs.		X	Inspection Plan	*QC/Eng.
X	Final Design Drawings	Eng/Drafting		QAPP	
	Installation Drawings			QAPjP	
	Installation Work Plan				
X	As-built Drawings	*Eng/Drafting		PROCUREMENT	
	Interface Control Drawings		X	Vendor Information Files (2)	Engineering
	IEFD Drawings			Comprehensive Equip. List	
	System Drawings		X	Spare Parts List	Engineering
	Drawing Tree		X	Spare Parts in Stock (2)	Engineering
X	Incorporate Outstanding Project Generated ECNs	*Eng/Drafting	X	NEC Inspection	NEC Inspector
X	Third Party Inspection	Third Party Insp			

*Lead Organization

#Required only if PIC skids procured off-site

(1) The Operation Test shall be satisfactorily completed prior to startup of U-102.

(2) These items do not require completion prior to start up of U-102. See sections 2.4, 2.10 and 2.11 for additional information.

(3) See section 2.8 for additional information.