ATTACHED IS AN ACCEPTANCE FOR BENEFICIAL USE (ABU) FOR THE READINESS OF PUMPING AND INSTRUMENTATION CONTROL SKID "L".

11A. Design Baseline Document? Yes ☐ No ☑

15. DATA TRANSMITTED

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<th>Sheet No.</th>
<th>Rev. No.</th>
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16. KEY

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

17. SIGNATURE/DISTRIBUTION

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19. Authorized Representative for Receiving Organization

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20. Design Authority/ Cognizant Manager

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

M. R. KOCH
LOCKHEED MARTIN HANFORD CORPORATION
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

Abstract:
This document is a Final Acceptance for Beneficial Use (ABU) for the readiness of Pumping Instrumentation and Control (PIC) skid "L". All the testing and documentation for PIC skid "L" is completed and the skid is ready for use in the field for pumping of tank U-105.

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ACCEPTANCE FOR BENEFICIAL USE
PUMPING AND INSTRUMENTATION CONTROL SKID “L”

1.0 INTRODUCTION

This is a final Acceptance for Beneficial Use (ABU) for Pumping and Instrumentation Control (PIC) skid “L”. PIC skid “L” is ready for pumping tank U-105. All the testing and documentation has been completed as required on the ABU checklist. This ABU covers only the readiness of the PIC skid “L”. 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 “L” 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.

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 “L”. The Acceptance Test Procedure (ATP) was provided in document RPP-5055, revision 0. The results of the testing are documented in RPP-5056, revision 0.

2.4 OPERATIONAL TESTING

Operational Test Procedure OTP-200-004, revision A-18 shall be completed for the testing of PIC skid “L”. Most of the operational testing was completed in the shop under the ATP procedure, with the remaining testing completed upon set up at U-105.
2.5 DESIGN DRAWINGS
Skid drawings have been released under ECN 651953. ECN 648489 modified skid “L” due to PS-1 pressure switch changing to a pressure transducer and a second control output being added to the PLC for the dilution system. ECN 648497 corrected some drafting errors on the drawings for field wiring. The drawings represent the final as-built condition of PIC skid “L”. There are no outstanding ECN’s against these drawings.

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 “L”, these programs are documented in RPP-5236, revision 0, PLC/DTAM SOFTWARE PROGRAMS FOR PUMPING AND INSTRUMENTATION CONTROL SKID “L”.

2.8 TRAINING
PIC skid “L” is similar to PIC skid “K”. 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 “L” at U-105 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”.

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2.9 OPERATING AND MAINTENANCE PROCEDURES

Operating and maintenance procedures have been updated for the deployment of PIC skid “L” 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 “L”.

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

2.9.3 Data Sheets

WT-06421, SALW-PS-6004L: Air compressor control switch
WT-06419, SALW-LT-6003L: Water tank level transmitter
WT-06422, SALW-SGT-6001L: Specific gravity transmitter
WT-06405, SALW-FQIT-6001L: Magnetic flow converter
WT-06423, SALW-WFT-6002L: Weight factor transmitter
WT-06418, SALW-CONV-6001L: Current to pneumatic converter
WT-06406, SALW-PI-6001L: Water pressure on drip system
WT-06407, SALW-PI-6002L: Air pressure at low side weight factor dip tube
WT-06408, SALW-PI-6003L: Air pressure at low side specific gravity dip tube
WT-06409, SALW-PI-6004L: Air pressure at high side dip tube
WT-06411, SALW-PI-6006L: Air compressor pressure indicator
WT-06412, SALW-PI-6007L: After filter air pressure indicator
WT-06414, SALW-PI-6008L: Air pressure on water tank
WT-06410, SALW-PI-6005L: Air pressure to DOV
WT-06415, SALW-PI-6011L: Discharge pressure indicator
WT-06416, SALW-PI-6012L: Suction pressure indicator
WT-06403, SALW-PT-6014L: Jumper flush pressure transducer
WT-06401, SALW-PT-6013L: Recirculation flush pressure transducer
WT-06402, SALW-PT-6013L: Recirculation flush pressure transducer
WT-06404, SALW-PT-6014L: Jumper flush pressure transducer
WT-06405, SALW-FQIT-6001L: Magnetic flow converter
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.
(1) The Operation Test shall be satisfactorily completed prior to startup of U-105.

(2) These items do not require completion prior to start up of U-105. See sections 2.4, 2.10 and 2.11 for additional information.

(3) See section 2.8 for additional information.