

Sta 4

MAR 19 1998

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 623668

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Replacement Cross-Site Transfer System	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: W-058/Startup	6. Design Authority/ Design Agent/Cog. Engr.: GL Parsons	7. Purchase Order No.: N/A
8. Originator Remarks: For Release		9. Equip./Component No.: N/A
		10. System/Bldg./Facility:
11. Receiver Remarks: 11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		12. Major Assm. Dwg. No.:
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

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 Desig- nator	Reason for Trans- mittal	Origi- nator Dispo- sition	Receiv- er Dispo- sition
1	HNF-2381		0	Preoperational Test Report, MCS Loss of Power and Redundant Sump Leak Detector/PSH-3113 & PSH-3113A Interlock Test	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 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1/2	1	Design Authority	WG Brown	3/17/98	T4-07						
N/A	N/A	Design Agent	N/A								
1/2	1	Proj. Startup	EA Pacquet	3/17/98	R3-47						
1/2	1	Proj. Mgr.	GL Parsons	3/17/98	R3-47						
1/2	1	QA	LR Hall	3/17/98	R3-47						
1/2	1	Safety	OM Jaka	3/17/98	R5-12						
N/A	N/A	Env.	N/A								

18. MD Gerker <i>MD Gerker</i> Signature of EDT Originator Date: 3/17/98	19. EA Pacquet <i>EA Pacquet</i> Authorized Representative for Receiving Organization Date: 3/17/98	20. GL Parsons <i>GL Parsons</i> Design Authority/ Cognizant Manager Date: 3-17-98	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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PREOPERATIONAL TEST REPORT, MCS LOSS OF POWER AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 AND PSH-3113A INTERLOCK TEST (POTP-008)

GL Parsons

Numatec Hanford Corporation, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

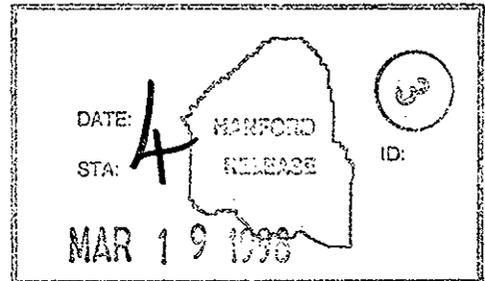
EDT/ECN: 623668 UC: 2030
Org Code: 8C610 Charge Code: N58U7
B&R Code: 39EW31301 Total Pages: 46

Key Words: Project W-058, Transfer header 3150, Transfer scheme, sump
leak detectors, Monitor and Control System (MCS), PSH-3113, PSH-3113A

Abstract: This report documents the testing of safety class redundant
sump leak detectors, pressure transmitters, and their associated
interlocks. It also verifies the required response of the Monitoring
Control System following a loss of power.

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Kara Broc
Release Approval
Release Stamp

3/19/98
Date

Approved for Public Release

PREOPERATIONAL TEST REPORT, MCS LOSS OF POWER AND REDUNDANT SUMP LEAK
DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST (POTP-008)

HNF-2381

PAGE 1 OF 5

REVISION NO. 0

Author
M. D. Gerken

APPROVAL DESIGNATOR SQ

TEST REPORT APPROVAL BY TEST REVIEW BOARD (TRB)

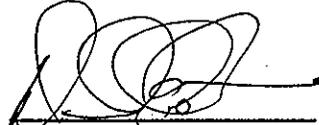
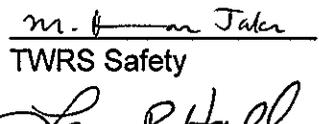
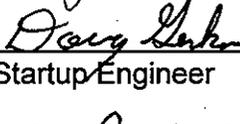
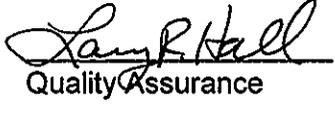
 TRB Chair	<u>3/17/98</u> Date	 TWRS Operations	<u>3/17/98</u> Date
 TWRS Engineering	<u>3-17-98</u> Date	 TWRS Safety	<u>3/17/98</u> Date
 Startup Engineer	<u>3/17/98</u> Date	 Quality Assurance	<u>3/17/98</u> Date
 Project Management	<u>3-17-98</u> Date		

TABLE OF CONTENTS

1.0	ATTACHMENTS	Page 3
2.0	REFERENCES	Page 3
3.0	INTRODUCTION	Page 3
4.0	SUMMARY OF TEST RESULTS	Page 3
5.0	DISCUSSION	Page 4
6.0	CONCLUSION	Page 5

1.0 ATTACHMENTS

- 1.1 Copy of the original test procedure (HNF-2347, Rev. 0/POTP-008) with recorded data and dispositioned test exception reports.
- 1.2 W-058 interlock test listing.
- 1.3 Engineering Change Notice W-058-389

2.0 REFERENCES

- 2.1 HNF-SD-W058-SUP-002, Rev. 1, *Project W-058 Startup Test Plan.*
- 2.2 HNF-2347, Rev. 0, *Preoperational Test POTP-008, MCS Loss of Power and Redundant Sump Leak Detectors PSH-3113 and PSH-3113A Interlock Test.*
- 2.3 HNF-2267, Rev. 0, *Replacement Cross-Site Transfer System Project W-058 Safety Class Upgrade Summary Report*

3.0 INTRODUCTION

Preoperational testing described in this report was performed from March 13 to March 17 1998. The main objective was to test the new safety class components added by ECN W-058-381 (see also reference 2.3) Operation of the following components was demonstrated:

- Solenoid operated valves and supernate header 3150 transfer scheme logic.
- Monitoring and control system (MCS) following a loss of power or communication.
- Safety class and redundant sump leak detectors LDE-3150, LDE-3151, LDE-3150A, LDE-3151A.
- Pressure switches PSH-3113 and PSH-3113A associated to safety class and redundant pressure transmitters PT-3113 and PT-3113A.
- System interlocks and controls, both local and remote, associated with the previously referenced safety class instruments.

One test exception was generated during the performance of these tests.

4.0 SUMMARY OF TEST RESULTS

All acceptance criteria were met.

- 4.1 Transfer Scheme 1 for Transfer Header 3150 lines up valves to the proper positions.
(Criteria Met)
- 4.2 Transfer Scheme 3 for Transfer Header 3150 lines up valves to the proper positions.
(Criteria Met)

REVISION NO. 0

4.3 MCS (OCS/PCU) responds properly to loss of power/communication test.
(Criteria Met)

4.4 The following interlocks operate properly:

- I-1 (with respect to Div Box and Vent Station leak detectors only): If a leak is detected shutdown booster pump P-3125A or P-3125B, transfer pump 241-SY-02A and input signal to 200 West Master Pump Circuit. (Criteria Met)
- I-11 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shutdown booster pump P-3125A and P-3125B. (Criteria Met)
- I-12 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shutdown transfer pump P-102-SY-02A. (Criteria Met)
- I-13 (with respect to Div Box and Vent Station leak detectors only): on leak detection, input signal to 200 East and 200 West Master Pump Shutdown circuits. (Criteria Met)

4.5 The following interlock operates properly:

I-16 (with respect to PSH-3113 and PSH-3113A): On high pressure, input signal to 200 West Master Pump Circuit. (Criteria Met)

Please refer to attachment 2 for a complete inventory and boundaries of W-058 interlock tests.

5.0 DISCUSSION

Initial testing of PSH-3113/3113A and the associated interlock (I-13) showed that the circuitry did not provide a failsafe configuration in the event of a loss of signal input (as required by reference 2.3). This discrepancy was documented in Test Exception 001, rectified by ECN W-058-389, and retested accordingly.

Regarding interlock I-13, it should be noted that in accordance with design requirements, the sump leak detectors are not currently connected to the 200 East Tank Farm Master Pump Shutdown (MPS) scheme. Interposing relays, however, are provided at the 244A lift station for future connection, if desired. These relays were tested for proper action in POTP-005 (see also attachment 2 of this report).

Regarding interlocks I-1, I-13, and I-16 it should be noted that the signal input to the 200 West Tank Farm MPS is tested by verifying the opening of the appropriate MPS relay contacts.

The uninterruptible power supply (UPS) provided for the operator control station (OCS) is capable of supplying a minimum of one hour (60 minutes) of power following as loss of power to the OCS.

Similarly the OCS is capable of displaying in a trend the last status of specified parameters after a process control unit (PCU) loss of power and/or communication.

6.0 CONCLUSION

Components included in this test procedure have been tested to the engineering and safety requirements established by the design documentation and are deemed to have satisfactorily met their functional design criteria.

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Page 1 of 1
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5. Proj./Prog./Dept./Div.: W-058/Startup	6. Design Authority/ Design Agent/Cog. Engr.: GL Parsons	7. Purchase Order No.: N/A
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		10. System/Bldg./Facility:
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1/2	1	Safety	OM Jaka	3/6/98	S5-12						
N/A	N/A	Env.	N/A								

18. <i>M. Garber</i> MD Garber <i>M. Garber</i> Signature of EDT Originator	19. <i>M. Garber</i> EA Pacquet <i>M. Garber</i> Authorized Representative for Receiving Organization	20. <i>M. Garber</i> GL Parsons <i>M. Garber</i> Design Authority/ Cognizant Manager	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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HNF-2381 Rev 0 pg 7

ATTCH 1

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 AND PSH-3113A INTERLOCK TEST

GL Parsons

Numatec Hanford Corporation, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

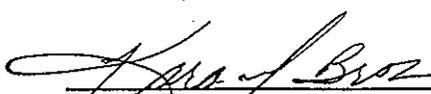
EDT/ECN: 623667 UC: 2030
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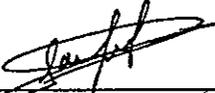
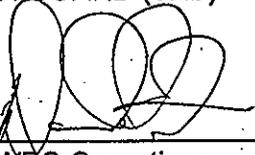
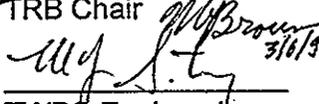
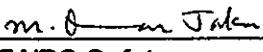
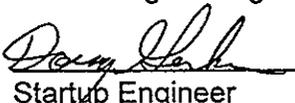
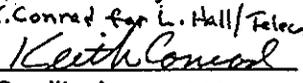
PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER
AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

VISION NO. 0

Author
M. D. Gerken/J. E. Dunks

APPROVAL DESIGNATOR SQ

PROCEDURE APPROVAL BY TEST REVIEW BOARD (TRB)

 _____ TRB Chair	<u>3/6/98</u> Date	 _____ TWRS Operations	<u>3/6/98</u> Date
 _____ TWRS Engineering	<u>3/6/98</u> Date	 _____ TWRS Safety	<u>3/6/98</u> Date
 _____ Startup Engineer	<u>3/6/98</u> Date	 _____ Quality Assurance	<u>3-6-98</u> Date
 _____ Project Management	<u>3-6-98</u> Date	 _____ EDNW Construction	<u>3/6/98</u> Date

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TABLE OF CONTENTS PAGE

1.0	PURPOSE	3
2.0	INFORMATION	3
2.1	SCOPE	3
2.2	TERMS AND DEFINITIONS	3
2.3	RESPONSIBILITIES	3
2.4	CHANGE CONTROL	4
2.5	EXCEPTIONS	5
2.6	REFERENCES	5
2.7	ENVIRONMENTAL	5
2.8	SAFETY	5
2.9	RADIATION AND CONTAMINATION CONTROL	6
2.10	QUALITY ASSURANCE	6
2.11	GENERAL INFORMATION	6
2.12	LIMITS AND PRECAUTIONS	6
3.0	RECORDS	7
4.0	PREREQUISITES	7
5.0	EQUIPMENT/INSTRUMENTS	8
6.0	PROCEDURE	8
7.0	ACCEPTANCE CRITERIA	8
ATTACHMENTS		
	Attachment A	10
	Attachment B	24
	Attachment C	25
	Attachment D	26
	Attachment E	27

VISION NO. 0

1.0 PURPOSE

1.1 This procedure tests systems associated with W-058 Cross Site Transfer System.

2.0 INFORMATION

2.1 SCOPE

2.1.1 This procedure will test those systems/components associated with the W-058 Cross Site transfer system. Operation of the following components will be demonstrated:

- Solenoid operated valves and supernate header 3150 transfer scheme logic.
- Monitoring and Control System Operation during a power loss.
- Sump Leak Detectors LDE-3150, LDE-3151, LDE-3150A, LDE-3151A.
- Pressure switches PSH 3113 and PSH 3113A

2.1.2 This test will demonstrate the operation of system interlocks and controls both local and remote, associated with the above referenced safety class instruments.

2.1.3 This procedure is governed by HNF-PRO-446 which establishes the requirements for project, program, department, or division testing activities.

2.2 TERMS AND DEFINITIONS

- 2.2.1 PCU - Process Control Unit
- 2.2.2 HS - Hand Switch
- 2.2.3 MCS - Monitoring and Control Station
- 2.2.4 HV - Hand Valve
- 2.2.5 SOV - Solenoid Operated Valve
- 2.2.6 MOV - Motor Operated Valve

2.3 RESPONSIBILITIES

2.3.1 The Construction Forces craft personnel are responsible for:

- Providing assistance during the test.

2.3.2 Test Director responsibilities:

- Ensures the equipment found in Step 5.0 of this procedure is available.
- Safe and productive accomplishment of the tests necessary to achieve startup.

SION NO. 0

- Ensure safe working conditions and practices.
- Ensure compliance with test documents and Technical Safety Requirements documents (TSRs) during testing.
- Communicate and coordinate the tests with the Tank Farm Shift Managers.
- Ensure appropriate review/approval of any modifications to test procedures are completed prior to returning to work
- Direct line of communication and centralized point of control.
- Conducts pre-job planning meeting.
- Scheduling/rescheduling of the test as required.
- Delegates any of the above responsibilities as needed to a deputy.

2.3.3 Test Engineer responsibilities:

- Conducting pre-job system walkdown.
- Recording equipment status and data per this procedure.
- Directing preoperational testing
- Providing technical support during testing.
- Providing programming support during testing.
- Forcing data in PLC program during testing.
- Recording data exceptions and other notes as required on the POTP Data Sheets.
- Review test documents to validate acceptance
- Prepare post testing documents

2.3.4 Operations Personnel responsibilities:

- Observing testing activities for training purposes.

2.4 CHANGE CONTROL

2.4.1 Test procedure administrative or editorial changes required during testing may be accommodated either as exceptions or by the Test Engineer re-drawing the controlled copy of the test procedure, if such changes will not affect operating facility safety, function, or performance and will not compromise or influence test data. Requirement changes, changes to acceptance criteria, or changes to Danger, Caution, Special Precautions, or other safety or environmental instructions in test procedures prepared as supporting documents must be made by engineering change notice.

SION NO. 0

2.5 EXCEPTIONS

2.5.1 Exceptions to results or to the test procedure will be given a sequential number and recorded on Attachment E, Test Exception Log sheet. A Test Exception Report, Attachment D, will be filled out to record and disposition each test exception.

2.6 REFERENCES

2.6.1 The following documents were used to write or are referenced in this procedure:

- Project W-058 Startup Test Plan, WHC-SD-W058-SUP-002
- H-2-822400, Sheet 1, P&ID Legend
- H-2-822403, P&ID Diversion Box 6241-A
- H-2-822404, P&ID Vent Station 6241-V
- H-2-822405, P&ID Lift Station 244-A
- H-2-822505, Electrical One-Line Diversion Box 6241-A
- H-2-822513, Sheet 1-9, Electrical Elementary Diagrams Diversion Box 6241-A
- H-6-14009, Electrical One Line Diagram Ventilation Station 6241-V
- ES-058-Y40 through Y90, Logic Diagrams
- VI 22798, Supplement 1, Electronic Pressure Transmitter, Ametek Model 88 Series
- VI 22798, Supplement 33, Air Operated Ball Valves, Herion/Hi-Gear Inc./Hytork
- HNF-1921, Pre-Operational Test Report, Transfer Header 3150
- W-058 Monitor and Control System Alarm/Shutdown Setpoints, HNF-1995
- Engineering Change Notice W-058-374
- Engineering Change Notice W-058-379
- Engineering Change Notice, W-058-381

2.7 ENVIRONMENTAL

2.7.1 Spills of hazardous materials should be reported to Environmental Reports group at 373-4942.

2.8 SAFETY

Warning - Operators should be aware of the possibility of coming into contact with poisonous snakes and spiders.

2.8.1 The following administrative procedures control work performed in this procedure:

- Safety: HNF-PRO-074 thru -096 and HNF-PRO-100 thru -105.

VISION NO. 0

- Industrial Hygiene: HNF-PRO-110, -111, -115, -119 thru -121.
- Tank Farm Health and Safety Plan (HASP), WHC-SD-WM-HSP-002

2.9 RADIATION AND CONTAMINATION CONTROL

2.9.1 For any work requiring entry into a radiation/ contamination area, comply with the facility and the Hanford Site Radiological Requirements (HSRCM-1). The majority of the work covered by this procedure is performed outside of the tank farm and does not require entry into a radiation/contamination control area.

2.10 QUALITY ASSURANCE

2.10.1 No Quality Assurance witness or hold points are required in this procedure. Quality Assurance shall review and approve the test procedure, the final test report and the disposition of all test exceptions. LHMC QC will witness test performed under this POTP.

2.11 GENERAL INFORMATION

2.11.1 All Measuring and Test Equipment (M&TE) used during performance of this procedure to collect qualitative data with the exception of timing devices shall meet the following requirements:

- Be within its current calibration cycle as evidenced by an affixed calibration label.
- Be capable of desired range.
- Have an accuracy (consistent with state-of-the-art limitations) equal to or greater than the accuracy specified in the procedure.

2.11.2 Timing measurements shall be made with commercially available time devices.

2.11.3 All readings are to be taken and recorded for each location where the capability exists (i.e. local instrument, PCU, MCS).

2.12 LIMITS AND PRECAUTIONS

2.12.1 If during performance of this procedure, any of the following conditions are found, **immediately** notify the Test Engineer:

- Any equipment malfunction which could prevent fulfillment of it's functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER
AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

PAGE 7 OF 9

VISION NO. 0

The Test Engineer may choose to stop work and place equipment in a safe condition based on the significance of the malfunction, error or inadequacy.

- 2.12.2 The Test Engineer has overall control of the testing process and change authorization for this procedure. The Test Engineer is responsible for running the test, data collection, and ensuring compliance with all requirements in this procedure.
- 2.12.3 Contact Test Director for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.
- 2.12.4 If any waste is generated during performance of this instruction consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions to ensure compliance with HNF and DOE environmental standards, as applicable, for disposal.
- 2.12.5 Comply with FDNW and plant/facility specific lock and tag or over-tagging requirements, as applicable.

3.0 RECORDS

- 3.1 This procedure as well as all completed attachments/appendices are kept as a permanent record.

4.0 PREREQUISITES

Unless otherwise specified, prerequisite actions may be performed in any order.

- 4.1 Perform a walkdown of the system tested by this procedure.
Test Engineer/Date: Doug Larkin / 3/10/98
- 4.2 Perform a pretest briefing for all personnel involved in the performance of this test.
Test Director/Date: Doug Larkin / 3-10-98
- 4.3 All personnel who will be involved with this test have provided the required signature verification information in Attachment B.
Test Engineer/Date: Doug Larkin / 3-10-98
- 4.4 Communications between personnel in 242-S and field test personnel has been verified.
Test Director/Date: [Signature] / 3-10-98
- 4.5 The official copy of this POTP and all other copies that will be used during the test have been verified to be the latest revision.
Test Director/Date: [Signature] / 3-10-98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER
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HNF-2347

SION NO. 0

- 4.6 All open items have been evaluated and verified to not affect the performance of this POTP (Quality Assurance Nonconformance Reports, Construction Punch Lists, outstanding Engineering or Field Change Notices, Startup-originated Design Change Requests, Test Deficiency Reports, and Master System Punch List items).

Test Director/Date: [Signature] / 3-10-98

5.0 EQUIPMENT/INSTRUMENTS

D.J. 3/13/98

5.1 Multi-meter: MATE #1029 (2 read)
Manufacturer: FLUKE Model No.: BT
Serial No.: 68880985 Calibration Date: 1-29-98
Calibration Due Date: 1-29-99

5.2 Process Instrument Calibrator (PIC): Output 4-20mA, Input 4-20mA, accuracy ± 0.01 mA. (~~2 required~~)
Manufacturer: Transmation Model No.: 1680
Serial No.: U8132109 Calibration Date: 10-1-97
Calibration Due Date: 10-1-98 # 817-13-20-031

Manufacturer: FLUKE Model No.: 8024B
Serial No.: 950-45-08-028 Calibration Date: 8/6/97
Calibration Due Date: 8/6/98

6.0 PROCEDURE

- 6.1 Preoperational testing shall be performed using Attachment A of this procedure.

7.0 ACCEPTANCE CRITERIA

- 7.1 Transfer Scheme 1 for Transfer Header 3150 lines up valves to the proper positions.

Test Engineer/Date: D.J. 3/13/98

Quality Control/Date: PS Elmendorf 3-13-98

- 7.2 Transfer Scheme 3 for Transfer Header 3150 lines up valves to the proper positions.

Test Engineer/Date: D.J. 3/13/98

Quality Control/Date: PS Elmendorf 3-13-98

- 7.3 MCS (OCS/PCU) responds properly to loss of power/communication test.

Test Engineer/Date: D.J. 3/13/98

Quality Control/Date: PS Elmendorf 3-13-98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER
AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

PAGE 9 OF 9

REVISION NO. 0

7.4 The following interlocks operate properly:

- * • I-1 (with respect to Div Box and Vent Station leak detectors only): If a leak is detected shutdown booster pump P-3125A or P-3125B, transfer pump 241-SY-02A and input signal to 200 West Master Pump Circuit.
- I-11 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shutdown booster pump P-3125A and P-3125B.
- I-12 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shutdown transfer pump P-102-SY-02A.
- * • I-13 (with respect to Div Box and Vent Station leak detectors only): input signal to 200 East and 200 West Master Pump Shutdown circuits.

Test Engineer/Date: Doug Herken / 3/13/98

Quality Control/Date: PJ Elmendorf 3-17-98

7.5 The following interlocks operate properly:

- * • I-16 (with respect to PSH-3113 & PSH-3113A): On High pressure, input signal to 200 West Master Pump Circuit.

Test Engineer/Date: Doug Herken / 3-17-98
RSC. / TE-001. DAFSO 3-17-98

Quality Control/Date: Ker Walbrugh 3-17-98

* REFERENCE NOTE IN S.O DISCUSSION IN TEST REPORT
HNF-2381 ADDRESSING VERIFICATIONS INVOLVING 200
EAST AND 200 WEST MASTER PUMP SHUTDOWN. PJ Elmendorf
3-17-98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 1 OF 14

1.0 Initial Conditions

1.1 VERIFY system electrical circuit breakers are aligned in accordance with Appendix B.

Test Engineer/Date: D.J. 3/13/98

1.2 VERIFY the Diversion Box Instrument Air system and the Vent Station Instrument Air system are in service.

Test Engineer/Date: D.J. 3/13/98

1.3 OPEN Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: D.J. 3/13/98

1.4 LOCK & TAG Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: D.J. 3/13/98

1.5 DISCONNECT Transfer Pump 241-SY-02A motor terminal leads from starter.

Test Engineer/Date: D.J. 3/13/98

1.6 TAPE up motor leads.

Test Engineer/Date: D.J. 3/13/98

1.7 REMOVE Lock & Tag from Transfer Pump 241-SY-02A Main Disconnect.

Test Engineer/Date: D.J. 3/13/98

1.8 CLOSE Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: D.J. 3/13/98

**PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST**

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 2 OF 14

NOTE: The pipe jumpers fabricated for the W-058 Project for the 244A pit are not yet installed. Therefore, it is necessary to simulate the positions of the motor operated valves on the 244A jumpers for the Transfer Scheme tests. The SOV's are closed in the field for POTP-007 testing boundaries and must be forced to the open position to perform the testing specified in POTP-008.

- 1.9 **FORCE** (in the MCS software) the associated bytes for the following valves to the positions shown.

Valve No.	Description	Required Position	Initials
MOV-843	WT-SNL-3150 Motor Operated 3-Way Valve at 244A Lift Station	Position A	D.H.
MOV-846	WT-SNL-3150 Motor Operated Valve at 244A Lift Station	OPEN	D.H.
SOV-3182A	WT-SNL-3150 Solenoid Operated Valve at Diversion Box	OPEN	D.H.
SOV-3182B	WT-SNL-3150 Solenoid Operated Valve at Diversion Box	OPEN	D.H.
SOV-3166A	WT-SNL-3150 Solenoid Operated Valve at Vent Station	OPEN	D.H.

- 1.10 **FORCE** LIT-WST-3102 on.

Test Engineer/Date: D.H. 3/13/98

- 1.11 **VERIFY** the following on the MCS:

- 1.11.1 P-102-SY-02A Transfer Pump **STOPPED** is illuminated on the display for Transfer Pump.

Test Engineer/Date: D.H. 3/13/98

- 1.11.2 PAL-3100A COMPRESSOR PRESSURE LOW is illuminated in **GREEN** on the display for Diversion Box 6241-A.

Test Engineer/Date: D.H. 3/13/98

- 1.11.3 PAL-3100B COMPRESSOR PRESSURE LOW is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: D.H. 3/13/98

- 1.11.4 LDA-3160 ENCASEMENT LEAK DETECTION is illuminated in **GREEN**

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 3 OF 14

on the display for Diversion Box 6241-A.

Test Engineer/Date: D.J. 3/13/98

1.11.5 LDA-3150 SUMP LEAK DETECTION is illuminated in **GREEN** on the display for Diversion Box 6241-A.

Test Engineer/Date: D.J. 3/13/98

1.11.6 LDA-3161 ENCASUREMENT LEAK DETECTION is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: D.J. 3/13/98

1.11.7 LDA-3151 SUMP LEAK DETECTION is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: D.J. 3/13/98

1.11.8 LDA-3162 ENCASUREMENT LEAK DETECTION is illuminated in **GREEN** on the display for 244A Lift Station.

Test Engineer/Date: D.J. 3/13/98

1.11.9 Pump P-841 Status **OFF** is illuminated on the display for 244A Lift Station.

Test Engineer/Date: D.J. 3/13/98

2.0 Transfer Scheme 1 Testing

Transfer Scheme 1 sets up for transfer of supernate from the 241-SY-A valve pit to the 241-A-B valve pit.

2.1 **SELECT** the Transfer Sequencing **RESET** button.

Test Engineer/Date: D.J. 3/13/98

2.2 **VERIFY** Alarm Table on MCS shows no valve positioning failures.

Test Engineer/Date: D.J. 3/13/98

NOTE: On MCS, valve position is given by color and fill of valve on computer screen. White designates CLOSED; Green designates OPEN, Red designates FAILED.

2.3 **VERIFY** all valves given on Appendix C-1 Data Sheet are shown **CLOSED** on the MCS.

Test Engineer/Date: D.J. 3/13/98

NOTE: Local indication (OPEN/CLOSED) is given by valve cap position indicator on SOVs. For MOVs, indicator is on bottom of actuator.

2.4 **VERIFY** all valves given on Appendix C-1 Data Sheet indicate **CLOSED** per local inspection.

Test Engineer/Date: D.J. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 4 OF 14

- 2.5 **SELECT** the Transfer Sequencing Initiate Button.
Test Engineer/Date: D.J. 3/13/98
- 2.6 **SELECT** the Transfer Sequencing **TYPE 1** transfer button.
Test Engineer/Date: D.J. 3/13/98
- 2.7 **VERIFY** proper valve position in accordance with Appendix C-1 Data Sheet.
Test Engineer/Date: D.J. 3/13/98

NOTE: The boxes on the MCS overview screen that denote PCU-1 thru PCU-5 indicate status of the transfer path. All boxes GRAY and paths GREEN indicate that the transfer path is ready for use. Boxes filled in RED indicates that an alarm associated with the transfer is activated (i.e., mispositioned valve, leak detected, etc.).

- 2.8 **IF** any the boxes on the MCS overview screen which denote PCU-1 thru PCU-5 are highlighted in RED, determine the reason why and record in the test log or a Test Exception Sheet if applicable. Otherwise N/A this step.
Test Engineer/Date: D.J. 3/13/98
- 2.9 **VERIFY** the boxes on the MCS overview screen which denote PCU-1 thru PCU-5 are highlighted in GRAY, unless a RED box has been determined to be acceptable per the previous step.
Test Engineer/Date: D.J. 3/13/98
- 2.10 **BYPASS** 102-SY-02A Transfer Pump Limit Alarm Module at 241-SY-271.
- 2.11 **START** 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.
- 2.12 **VERIFY** that starter contacts close.
Test Engineer/Date: D.J. 3/13/98
- 2.13 **VERIFY** 102-SY-02A Transfer Pump **ACTIVE** box is illuminated on MCS screen.
Test Engineer/Date: D.J. 3/13/98
- 2.14 **SIMULATE** leak at Sump Leak Detector LDE-3150 (immerse leak detector in water).
Test Engineer/Date: D.J. 3/13/98
- 2.15 **VERIFY** LDA-3150 Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: D.J. 3/13/98
- 2.16 **VERIFY** the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: D.J. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 5 OF 14

- 2.17 VERIFY that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: D.J. 3/13/98
- 2.18 VERIFY that PCU-1 outputs 7/3 and 7/4 are ON. (IL-1)
Test Engineer/Date: D.J. 3/13/98
- 2.19 VERIFY 102-SY-02A Transfer Pump STOP box is illuminated on MCS screen.
Test Engineer/Date: D.J. 3/13/98
- 2.20 VERIFY at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (IL-12)
Test Engineer/Date: D.J. 3/13/98
- 2.21 VERIFY the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 10 and 11. (IL-13)
D.J. 3/13/98 Test Engineer/Date: D.J. 3/13/98
- 2.22 VERIFY contact K-DB-3 between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (IL-11)
Test Engineer/Date: D.J. 3/13/98
- 2.23 VERIFY contact K-DB-3 between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (IL-11)
Test Engineer/Date: D.J. 3/13/98
- 2.24 START 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.
- 2.25 VERIFY that starter contacts close.
Test Engineer/Date: D.J. 3/13/98
- 2.26 VERIFY 102-SY-02A Transfer Pump ACTIVE box is illuminated on MCS screen.
Test Engineer/Date: D.J. 3/13/98
- 2.27 SIMULATE leak at Sump Leak Detector LDE-3150A (immerse leak detector in water).
Test Engineer/Date: D.J. 3/13/98
- 2.28 VERIFY LDA-3150A Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: D.J. 3/13/98
- 2.29 VERIFY the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: D.J. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 6 OF 14

- 2.30 VERIFY that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: D.H. 3/13/98
- 2.31 VERIFY that PCU-1 outputs 7/3 and 7/4 are ON. (IL-1)
Test Engineer/Date: D.H. 3/13/98
- 2.32 VERIFY 102-SY-02A Transfer Pump STOP box is illuminated on MCS screen.
Test Engineer/Date: D.H. 3/13/98
- 2.32.1 VERIFY at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (IL-12)
Test Engineer/Date: D.H. 3/13/98
- 2.33 VERIFY the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 10 and 11. (IL-13)
Test Engineer/Date: D.H. 3/13/98
- 2.34 VERIFY contact K-DB-3A between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (IL-11)
Test Engineer/Date: D.H. 3/13/98
- 2.35 VERIFY contact K-DB-3A between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (IL-11)
Test Engineer/Date: D.H. 3/13/98
- 2.36 RESET leak detector shutdown at MCS.
Test Engineer/Date: D.H. 3/13/98
- 2.37 START 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.
- 2.38 VERIFY that starter contacts close.
Test Engineer/Date: D.H. 3/13/98
- 2.39 VERIFY 102-SY-02A Transfer Pump ACTIVE box is illuminated on MCS screen.
Test Engineer/Date: D.H. 3/13/98
- 2.40 SIMULATE leak at Sump Leak Detector LDE-3151 (immerse leak detector in water).
Test Engineer/Date: D.H. 3/13/98
- 2.41 VERIFY LDA-3151 Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: D.H. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 7 OF 14

- 2.42 VERIFY the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: D.H. 3/13/98
- 2.43 VERIFY that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: D.H. 3/13/98
- 2.44 VERIFY that PCU-1 outputs 7/3 and 7/4 are ON. (IL-1)
Test Engineer/Date: D.H. 3/13/98
- 2.45 VERIFY 102-SY-02A Transfer Pump STOP box is illuminated on MCS screen.
Test Engineer/Date: D.H. 3/13/98
- 2.46 VERIFY at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (IL-12)
Test Engineer/Date: D.H. 3/13/98
- 2.47 VERIFY the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 8 and 9. (IL-13)
Test Engineer/Date: D.H. 3/13/98
- 2.48 VERIFY contact K-VS-3 between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (IL-11)
Test Engineer/Date: D.H. 3/13/98
- 2.49 VERIFY contact K-VS-3 between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (IL-11)
Test Engineer/Date: D.H. 3/13/98
- 2.50 RESET leak detector shutdown at MCS.
Test Engineer/Date: D.H. 3/13/98
- 2.51 START 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.
- 2.52 VERIFY that starter contacts close.
Test Engineer/Date: D.H. 3/13/98
- 2.53 VERIFY 102-SY-02A Transfer Pump ACTIVE box is illuminated on MCS screen.
Test Engineer/Date: D.H. 3/13/98
- 2.54 SIMULATE leak at Sump Leak Detector LDE-3151A (immerse leak detector in water).
Test Engineer/Date: D.H. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 8 OF 14

- 2.55 VERIFY LDA-3151A Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: D.J. 3/13/98
- 2.56 VERIFY the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: D.J. 3/13/98
- 2.57 VERIFY that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: D.J. 3/13/98
- 2.58 VERIFY that PCU-1 outputs 7/3 and 7/4 are ON. (IL-1)
Test Engineer/Date: D.J. 3/13/98
- 2.59 VERIFY 102-SY-02A Transfer Pump STOP box is illuminated on MCS screen.
Test Engineer/Date: D.J. 3/13/98
- 2.60 VERIFY at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (IL-12)
Test Engineer/Date: D.J. 3/13/98
- 2.61 VERIFY the contacts of the master shutdown relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 8 and 9. (IL-13)
Test Engineer/Date: D.J. 3/13/98
11 D.J. 3/13/98
- 2.62 VERIFY contact K-VS-3A between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (IL-11)
Test Engineer/Date: D.J. 3/13/98
- 2.63 VERIFY contact K-VS-3A between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (IL-11)
Test Engineer/Date: D.J. 3/13/98
- 2.64 RESET leak detector shutdown at MCS.
Test Engineer/Date: D.J. 3/13/98
- D.J. 3/13/98* 2.64.1 REMOVE BYPASS INSTALLED IN STEP 2.10.
TE-001
- TE-001 2.65 SIMULATE Operating Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. SET PIC connected to points TB2-1 and TB2-2 to 4.0mA.
Test Engineer/Date: TE-001
- 2.66 VERIFY the contacts of PT-3113 are Closed at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 10 and 11. (IL-16)
- 2.67 SIMULATE High Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. SET PIC connected to points TB2-1 and TB2-2 to 4.5mA. (Equivalent to 10 psig)
Test Engineer/Date: _____

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 9 OF 14

D.J. 3/13/98
TE-001

- 2.68 **VERIFY** the contacts of PT-3113 are open at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 10 and 11. (IL-16) TE-001
Test Engineer/Date: _____
- 2.69 **DISCONNECT** PIC from PT-3113.
Test Engineer/Date: _____
- 2.70 **SIMULATE** Operating Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.0mA.
Test Engineer/Date: _____
- 2.71 **VERIFY** the contacts of PT-3113A are Closed at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 7 and 8. (IL-16)
- 2.72 **SIMULATE** High Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.5mA. (Equivalent to 10 psig)
Test Engineer/Date: _____
- 2.73 **VERIFY** the contacts of PT-3113A are open at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 7 and 8. (IL-16)
Test Engineer/Date: _____
- 2.74 **DISCONNECT** PIC from PT-3113A.
Test Engineer/Date: _____
- 2.75 **OPEN** Transfer Pump 241-SY-02A Main Disconnect
Test Engineer/Date: *D.J. 3/13/98*

3.0 Transfer Scheme 3 Testing

Transfer Scheme 3 sets up for transfer of supernate from the 241-A-B valve pit to valve pit 241-SY-A

D.J. 3/13/98

- ~~3.1 **SELECT** the Transfer Sequencing **TYPE 3** transfer button.~~
Test Engineer/Date: _____
- 3.2 **SELECT** the Transfer Sequencing **RESET** button.
Test Engineer/Date: *D.J. 3/13/98*
- 3.3 **VERIFY** Alarm Table on MCS shows no valve positioning failures.
Test Engineer/Date: *D.J. 3/13/98*

NOTE: On MCS, valve position is given by color and fill of valve on computer screen. White designates CLOSED; Green designates OPEN, Red designates FAILED.

- 3.4 **VERIFY** all valves given on Appendix C-2 Data Sheet are shown **CLOSED** on the MCS.
Test Engineer/Date: *D.J. 3/13/98*

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 10 OF 14

NOTE: Local indication (OPEN/CLOSED) is given by valve cap position indicator on SOVs. For MOVs, indicator is on bottom of actuator.

3.5 **VERIFY** all valves given on Appendix C-2 Data Sheet indicate **CLOSED** per local inspection.

Test Engineer/Date: D.J. 3/13/98

3.6 **SELECT** the Transfer Sequencing ~~Initiate~~ Button. ^V TYPE 3 TRANSFER BUTTON. D.J.

3.7 **VERIFY** proper valve position in accordance with Appendix C-2 Data Sheet.

Test Engineer/Date: D.J. 3/13/98

4.0 **Operator Control Station Loss of Power Test**

This section is intended to verify that the UPS provided for the Operator Control Station (OCS) is capable of providing a minimum of one hour (60 minutes) of power to the system. START 12:4 120VAC

4.1 **SELECT** different monitoring screens on each of the display terminals and disconnect the power cord to the OCS. **RECORD** the starting time and UPS voltage 11:50 AM / 120VAC

Test Engineer/Date: D.J. 3/13/98

4.2 **SELECT** alternate viewing screens and monitoring functions during the test to simulate the activity that might occur during a localized power interruption during a transfer.

Test Engineer/Date: D.J. 3/13/98

4.3 At the completion of one hour, **VERIFY** that the OCS is still operating and that the UPS is still providing adequate power. **RECORD** completion time and UPS voltage 13:00 pm / 120VAC

Test Engineer/Date: D.J. 3/13/98

4.4 Reconnect power to OCS and **VERIFY** that the system is operational.

Test Engineer/Date: D.J. 3/13/98

5.0 **Operator Control Station/ Process Control Unit Loss of Power/Communication Test**

This section is intended to verify that the OCS is capable of displaying in a trend the last status of specified parameters after a PCU loss of power/communications.

5.1 **ACTIVATE** the trend.

Test Engineer/Date: D.J. 3/13/98

5.2 **RECORD** status of trended parameters on test log.

Test Engineer/Date: D.J. 3/13/98

SEE TEST LOG ENTRY 15:31

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST
HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 11 OF 14

5.3 DISCONNECT power to PCU-1.

Test Engineer/Date: D.J. 3/13/98

5.4 VERIFY trend shows last recorded status.

Test Engineer/Date: D.J. 3/13/98

5.5 Reconnect power to PCU-1 and VERIFY that the system is operational.

Test Engineer/Date: D.J. 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 12 OF 14

APPENDIX B - Electrical Alignment

BREAKER NUMBER	BREAKER NAME AND LOCATION	REQUIRED POSITION	INITIALS
CB2-10	Diversion Box Panelboard PP-3 supply breaker in Switchboard SB-1	CLOSED	JAH
CB2-5	Diversion Box Air Compressor supply breaker in Switchboard SB-1	CLOSED	JAH
CB-2	Vent Station Panelboard PP-3 supply breaker in Distribution Panelboard DP-1	CLOSED	JAH
CB-3	Vent Station Air Compressor supply breaker in Distribution Panelboard DP-1	CLOSED	JAH
CB1-3	Diversion Box Switchboard breaker in SB-1 for VSD-1.	OPEN	JAH
CB1-2	Diversion Box Switchboard breaker in SB-1 for VSD-2.	OPEN	JAH

Performed by: Jon A. Harwood JAH 3/13/98
PRINT NAME INITIALS DATE

Verified by: BYRON SEARS BS 3-13-98
PRINT NAME INITIALS DATE

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 13 OF 14

APPENDIX C-1 Data Sheet - Transfer Scheme 1

		Transfer Sequence Reset Position			Transfer 1 Position		
Valve	Description / Location	Req. Position	Verif. From MCS	Verif. Local	Req. Position	Verif. From MCS	Verif. Local
SOV-3182A	SNL-3150 DIV BOX	CLOSED (Forced D.P. OPEN) 3/13/98	D.G 3/13/98	JE 3-13-98	CLOSED- (FORCED OPEN)	D.G 3/13/98	JE 3-13-98
SOV-3182B	SNL-3150 DIV BOX	CLOSED (Forced D.P. OPEN) 3/13/98		JE 3-13-98	CLOSED- (FORCED OPEN)		JE 3-13-98
SOV-3184	SNL-3150 DIV BOX	CLOSED		JE 3-13-98	OPEN		JE 3-13-98
SOV-3173A	SNL-3151 DIV BOX	CLOSED		JE 3-13-98	CLOSED		JE 3-13-98
SOV-3173B	SNL-3151 DIV BOX	CLOSED		JE 3-13-98	CLOSED		JE 3-13-98
SOV-3165A	SNL-3150 VENT STA	CLOSED		JE 3/13/98	OPEN		JE 3/13/98
SOV-3166A	SNL-3150 VENT STA	CLOSED (Forced D.P. OPEN) 3/13/98		JE 3/13/98	CLOSED- (FORCED OPEN)		JE 3/13/98
SOV-3185A	SNL-3152 VENT STA	CLOSED		JE 3/13/98	CLOSED		JE 3/13/98
SOV-3185B	SNL-3152 VENT STA	CLOSED		JE 3/13/98	CLOSED		JE 3/13/98
SOV-3167A	SNL-3153 VENT STA	CLOSED		JE 3/13/98	CLOSED		JE 3/13/98
SOV-3167B	SNL-3153 VENT STA	CLOSED	↓	JE 3/13/98	CLOSED	↓	JE 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT A

PAGE 14 OF 14

APPENDIX C-2 Data Sheet - Transfer Scheme 3							
		Transfer Sequence Reset Position			Transfer 3 Position		
Valve	Description / Location	Req. Position	Verif. From MCS	Verif. Local	Req. Position	Verif. From MCS	Verif. Local
SOV-3182A	SNL-3150 DIV BOX	CLOSED	(Forced Open) 3/13/98	AE 3-13-98	CLOSED- (FORCED OPEN)	D.G. 3/13/98	AE 3-13-98
SOV-3182B	SNL-3150 DIV BOX	CLOSED (Forced Open) 3/13/98	3/13/98	AE 3-13-98	CLOSED- (FORCED OPEN)		AE 3-13-98
SOV-3184	SNL-3150 DIV BOX	CLOSED		AE 3-13-98	OPEN		AE 3-13-98
SOV-3173A	SNL-3151 DIV BOX	CLOSED		AE 3-13-98	CLOSED		AE 3-13-98
SOV-3173B	SNL-3151 DIV BOX	CLOSED		AE 3-13-98	CLOSED		AE 3-13-98
SOV-3165A	SNL-3150 VENT STA	CLOSED		AE 3/13/98	OPEN		AE 3/13/98
SOV-3166A	SNL-3150 VENT STA	CLOSED (Forced Open) 3/13/98		AE 3/13/98	CLOSED- (FORCED OPEN)		AE 3/13/98
SOV-3185A	SNL-3152 VENT STA	CLOSED		AE 3/13/98	CLOSED		AE 3/13/98
SOV-3185B	SNL-3152 VENT STA	CLOSED		AE 3/13/98	CLOSED		AE 3/13/98
SOV-3167A	SNL-3153 VENT STA	CLOSED		AE 3/13/98	CLOSED		AE 3/13/98
SOV-3167B	SNL-3153 VENT STA	CLOSED		AE 3/13/98	CLOSED		AE 3/13/98

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH3113 & PSH3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT B

PAGE 1 OF 1

SIGNATURE/INITIAL VERIFICATION

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall provide their name, job title, signature, and initials in the following table.

NAME (PRINT)	TITLE	SIGNATURE	INITIAL
DOUG GERKEN	TEST ENGINEER	<i>Doug Gerken</i>	D.G.
DAGE GREENAWAY	TEST DIR	<i>Dage Greenaway</i>	<i>DG</i>
GENE ENLOS	PIPEFITTER	<i>Gene Enlos</i>	G.E.
Fidel Rivera	Electrician	<i>Fidel Rivera</i>	FR
Tom A. Harwood	Electrician	<i>Tom A. Harwood</i>	TAH
BYRON SEARS	ELECTRICIAN	<i>Byron Sears</i>	BS
Paul Posthuma	ELECTRICIAN	<i>Paul Posthuma</i>	PP
GARY COOPER	LABORER	<i>Gary Cooper</i>	G.C.
Dandra Smith	Welder	<i>Dandra Smith</i>	DS
Rick Sharp	Acc	<i>Rick Sharp</i>	RS
Louise J. Steadman	Fitter	<i>Louise J. Steadman</i>	LJS
P.J. ELMENDORF	LMHC QC	<i>P.J. Elmendorf</i>	PE
GREICHMUTH	TEST DIR	<i>Greichmuth</i>	GR
HANK M. CHAFIN	QA ENGINEER	<i>Hank M. Chafin</i>	HMC
LANNY R. HALL	Q.I.A. ENGINEER	<i>Lanny R. Hall</i>	LH
Ken WILLOUGHBY	LMHC QC		

PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH3113 & PSH3113A INTERLOCK TEST

HNF-2347

REVISION NO. 0

ATTACHMENT C

PAGE 1 OF 1

TEST LOG		TEST NUMBER:	TEST LOG PAGE NUMBER: ___ of ___
TEST TITLE:			
TIME/DATE	EVENT DESCRIPTION/SIGNATURE		
3/10/98	DRY RUN TESTING POTP-008		
2/11/98	↓		
3/2/98			
3/13/98	STARTED POTP-008		
	- SOU 3165 A WAS IN MANUAL SO VALVE FAILED TO CLOSE AS REQUIRED BY STEP 2.3 RESET VALUE TO AUTO AND REPEATED STEP 2.1 AND VALVE CLOSED.		
	- PER STEP 5.2 SET PT3125D TO 1122 PSZ		
① 15:31	SHOT DOWN POWER TO PCU-1 AND VERIFIED VALUE AT SHUTDOWN WAS 1122 PSI AND ^{REMAINED 1122 PSI} 3122 AFTER SHUTDOWN		
	RESTARTED PT 3125D TO NORMAL AFTER TEST.		
3/12/98	COMPLETED POTP-008 AND TE-001		

**PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH3113 & PSH3113A INTERLOCK TEST**

HNF-2347

REVISION NO. 0

ATTACHMENT E

PAGE 1 OF 1

TEST EXCEPTION LOG

TE #	DATE	DESCRIPTION	DISPOSITIONED	DATE CLOSED
001	3/13/98	Limit Alarm Modules for PT-3113/3113A and associated interlock (I-13) are not failsafe as configured in ECN - W058-381. Reference HNF-SD-2267, REV 0.	Reconfigure limit alarm modules and circuitry to failsafe configuration per ECN-W058-389 delete steps 2.65 thru 2.76 and retest per attached pages 2 and 3.	3/17/98

PREOPERATIONAL TESTING POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347
ATTACHMENT D

PAGE 1 OF 3

REVISION NO. 0

TEST EXCEPTION REPORT

TEST PROCEDURE NO. & SECTION: HNF-2347, 2.65 THRU 2.74	TEST NAME: Mcs Loss Of Power And Redundant Sump Leak Detector/PSH-3113 & PSH-3113A Interlock Test	T.E. NUMBER: TE-001
---	--	------------------------

DESCRIPTION OF PROBLEM:
Limit Alarm Modules for PT-3113/3113A and associated interlock (I-13) are not failsafe as configured in ECN -W058-381. Reference HNF-SD-2267, REV 0.

ORIGINATOR: M. D. Gerken <i>Doug Gerken</i> ORG: DATE: 03/14/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE <i>Doug Gerken</i> TEST ENGINEER DATE: 03/14/98
--	--

DISPOSITION:
Reconfigure limit alarm modules and circuitry to failsafe configuration per ECN-W058-389 delete steps 2.65 thru 2.74 and retest per attached pages 2 and 3.

D.G. 3/16/98

PROCESS INSTRUMENT CALIBRATOR (PIC); OUTPUT 4-20mA,
INPUT 4-20mA, ACCURACY $\pm 0.01\text{mA}$ @

MANUFACTURER TRANSMATION MODEL NO: 1040

SERIAL NO. 1040117387 CALIBRATION DATE 1-22-98

CALIBRATION DUE DATE 1-22-99

DISPOSITION AND RETEST REQUIREMENTS BY: <i>Doug Gerken</i> DATE: 03/16/98	DISPOSITION ACTIONS COMPLETE: Verified <i>[Signature]</i> DATE: 3/17/98
---	--

QAE CONCURRENCE WITH DISPOSITION (if required): <i>Hank M. Chapin</i> 3-16-98 DATE	RETEST COMPLETE: <i>Doug Gerken</i> 3/17/98 TEST ENGINEER DATE
--	--

PREOPERATIONAL TESTING POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347
ATTACHMENT D

PAGE 2 OF 3

REVISION NO. 0

- a. **SIMULATE** Operating Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.0mA.
Test Engineer/Date: D. H. / 3/12/98
- b. **VERIFY** the contacts of Limit Alarm Module PSH-3113 are closed at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. H. / 3/12/98
- c. **SIMULATE** High Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.5mA. (Equivalent to 10 psig)
Test Engineer/Date: D. H. / 3/17/98
- d. **VERIFY** the contacts of Limit Alarm Module PSH-3113 are open at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. H. / 3-17-98
- e. **SIMULATE** Operating Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.0mA.
Test Engineer/Date: D. H. / 3-17-98
- f. **VERIFY** the contacts of Limit Alarm Module PSH-3113 are closed at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. H. / 3-17-98
- g. **DISCONNECT** wire from TB2-1 and verify the contacts Limit Alarm Module PSH-3113 are open between points 6 and 10.
Test Engineer/Date: D. H. / 3-17-98
- h. **RECONNECT** wire to TB2-1 and verify the contacts Limit Alarm Module PSH-3113 are closed between points 6 and 10. (IL-16)
Test Engineer/Date: D. H. / 3/17/98
- i. **DISCONNECT (HOT)** wire from Limit Alarm Module PSH-3113 terminal 1 and verify the contacts are open between points 6 and 10.
Test Engineer/Date: D. H. / 3-17-98
- j. **RECONNECT (HOT)** wire from Limit Alarm Module PSH-3113 terminal 1 and verify the contacts are closed between points 6 and 10. (IL-16)
Test Engineer/Date: D. H. / 3-17-98
- k. **DISCONNECT** PIC from PT-3113.
Test Engineer/Date: D. H. / 3-17-98

PREOPERATIONAL TESTING POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP
LEAK DETECTOR/PSH-3113 & PSH-3113A INTERLOCK TEST

HNF-2347
ATTACHMENT D

PAGE 3 OF 3

REVISION NO. 0

- l. **SIMULATE** Operating Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-4 and TB2-5 to 4.0mA.
Test Engineer/Date: D. J. / 3-17-98
- m. **VERIFY** the contacts of Limit Alarm Module PSH-3113A are closed at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. J. / 3-17-98
- n. **SIMULATE** High Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-4 and TB2-5 to 4.5mA. (Equivalent to 10 psig)
Test Engineer/Date: D. J. / 3-17-98
- o. **VERIFY** the contacts of Limit Alarm Module PSH-3113A are open at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. J. / 3-17-98
- p. **SIMULATE** Operating Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-4 and TB2-5 to 4.0mA.
Test Engineer/Date: D. J. / 3-17-98
- q. **VERIFY** the contacts of Limit Alarm Module PSH-3113A are closed at 241-SY-271 relay cabinet between points 6 and 10. (IL-16)
Test Engineer/Date: D. J. / 3-17-98
- r. **DISCONNECT** wire from TB2-4 and verify the contacts Limit Alarm Module PSH-3113A are open between points 6 and 10.
Test Engineer/Date: D. J. / 3-17-98
- s. **RECONNECT** wire to TB2-4 and verify the contacts Limit Alarm Module PSH-3113A are closed between points 6 and 10. (IL-16)
Test Engineer/Date: D. J. / 3-17-98
- t. **DISCONNECT (HOT)** wire from Limit Alarm Module PSH-3113A terminal 1 and verify the contacts are open between points 6 and 10.
Test Engineer/Date: D. J. / 3-17-98
- u. **RECONNECT (HOT)** wire from Limit Alarm Module PSH-3113A terminal 1 and verify the contacts are closed between points 6 and 10. (IL-16)
Test Engineer/Date: D. J. / 3-17-98
- v. **DISCONNECT** PIC from PT-3113A.
Test Engineer/Date: D. J. / 3-17-98

W-058 Interlock Test Listing

(2/12/98)

1

INTERLOCK LOGIC (H-2-822400, Sh 1, Rev 5)

If a leak is detected shutdown operating Booster Pump, P-3125A or P-3125B, Transfer Pump P-102-SY-02A, and input signal to 200 West Master Pump Circuit. (Software)

On high pressure shutdown operating Booster Pump, P-3125A or P-3125B. (Software)

On low level, shutdown Transfer Pump, P-102-SY-02A. (Software)

Sump pump will not be permitted to operate if associated outlet valve is not open. (Software)

On positive pressure (gage), in transfer line, vent valves will not be permitted to open. (Software)

The operating Booster Pump, P-3125A or P-3125B, will shutdown:

- A) On high pump bearing temperature. (Software)
- B) On high motor winding temperature. (Software)
- C) On high vibration. (Software)
- D) On pump sear failure. (Software)
- E) On low oil level. (Software)
- X) On local control. (Software)

The Booster Pump will not be permitted to operate if the inlet pressure is lower than 10psig. (Software)

Shutdown operating Booster Pump when rupture disk PSE 841 or PSE 842 fails. (Software)

Transfer Pump P-102-SY-SY-02A, will not be permitted to operate if operating Booster Pump is shutdown. (Software)

10. Upstream transfer pump P-102-SY-02A, will be shutdown if inlet pressure reaches 70psig. (Software)
11. On leak detection, shutdown Booster Pump P-3125A and P-3125B. (Hardwired)
12. On leak detection, shutdown Transfer Pump P-102-SY-02A. (Hardwired)
13. On leak detection, input signal to 200East and 200West Master Shutdown Circuits. See Drawings H-2-822440 sh1 and 442 sh 1. (Hardwired)
14. On high discharge pressure shutdown appropriate operating pump. (Software)
15. The Booster Pump will not be permitted to operate is the associated vent and drain valves are not closed. (Software)
16. On high pressure, input signal to 200West Master Shutdown circuits. (Hardwired)
17. If valve is open, input signal to 200West Master Shutdown circuits. (Hardwired)
18. On low level, shutdown flush pump P-3100A. (Software)
19. On high process temperature, high heater sheath temperature, or low flow heater is shutdown. (Hardwired)
20. On high pressure, shutdown transfer pump P-102-SY-02A. (Software)
21. On positive pressure (gage), in transfer line, sump pump valves will not be permitted to open. (Software)

W-058 Interlock Test Listing

(2/12/98)

2

IL	SYS	DEVICE	P&ID	ALARM	IL ACTION/(HW or SW)	FUNCTION	LOCATION	TESTED	COMMENTS
01	SNL/SLL	LDE3150	403	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	DB PUMP RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3150	403	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	DB PUMP RM	POTP-008	2.18 (Note 5)
01	SNL/SLL	LDE3150A	403	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	DB PUMP RM	POTP-008	2.31 (Note 5)
01	SNL/SLL	LDE3151	404	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	VS VAULT	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3151	404	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	VS VAULT	POTP-008	2.44 (Note 5)
01	SNL/SLL	LDE3151A	404	LEAK	STOP P3125A/B & 2W MPS/S	SUMP LD	VS VAULT	POTP-008	2.58 (Note 5)
01	SNL/SLL	LDE3160A	403	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	DB SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3160B	403	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	DB SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3160C	403	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	DB SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3160D	403	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	DB SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3161A	404	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	VS SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3161B	404	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	VS SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3161C	404	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	VS SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3161D	404	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	VS SWGR RM	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3162A	405	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	CAB6241	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDE3162B	405	LEAK	STOP P3125A/B & 2W MPS/S	ENCASEMENT LD	CAB6241	ATP004//POTP005	9.10(A)/10.10(B)//12(MPS)
01	SNL/SLL	LDEPP	405	LEAK	STOP P3125A/B & 2W MPS/S	LIFT STATION LD	244A LIFT STA	POTP-004	9.34(A)(MPS)/10.34(B)(MPS)
02	SLL	PT3168	404	P>10PSIG	SHUT DOWN P3125A OR B/S	PROTECT VS HEPA	VS VAULT	ATP-004//POTP007	9.10/10.10//2.37/3.37
02	SLL	PT842	405	P>200PSIG	SHUT DOWN P3125A OR B/S	PROTECT EXST TF	244A LIFT STA	POTP-004	9.49(A)/10.49(B) (Note 1)
03	SNL	LSL3102	401	LEVEL LO	P102SYO2A PERMSVE/S	XFER PUMP LEVEL	SY102	ATP-003	9.1 (Note 2)
04	SNL	SOV3167A	404	*OPEN	INHIBIT SUMP PUMP/S	SUMP DISCHARGE	VS VAULT	POTP-005	11.12-11.24
04	SNL	SOV3167B	404	*OPEN	INHIBIT SUMP PUMP/S	SUMP DISCHARGE	VS VAULT	POTP-005	11.12-11.24
04	SNL	SOV3173A	403	*OPEN	INHIBIT SUMP PP/S	SUMP DISCHARGE	DB PUMP RM	POTP-005	9.12-9.24
04	SNL	SOV3173B	403	*OPEN	INHIBIT SUMP PP/S	SUMP DISCHARGE	DB PUMP RM	POTP-005	9.12-9.24
05	SNL	PT3126A	404	p>0PSIG	INHIB VENT VALVE OPEN/S	SUPER PRESSURE	VS VAULT	POTP-005	4.0
05	SLL	PT3126B	404	P>0PSIG	INHIB VENT VALVE OPEN/S	SLURRY PRESS	VS VAULT	POTP-004	5.0

W-058 Interlock Test Listing

(2/12/98)

3

IL	SYS	DEVICE	P&ID	ALARM	IL ACTION/(HW or SW)	FUNCTION	LOCATION	TESTED	COMMENTS
06A	SLL	TE3125A1	400/2	T>200°F	SHUTDOWN P3125A/S	BP BRG TEMP	DB PUMP RM	POTP-007	2.26
06A	SLL	TE3125A2	400/2	T>200°F	SHUTDOWN P3125A/S	BP BRG TEMP	DB PUMP RM	POTP-007	2.27
06A	SLL	TE3125B1	400/2	T>200°F	SHUTDOWN P-3125B/S	BP BRG TEMP	DB PUMP RM	POTP-007	3.26
06A	SLL	TE3125B2	400/2	T>200°F	SHUTDOWN P-3125B/S	BP BRG TEMP	DB PUMP RM	POTP-007	3.27
06B	SLL	TSH3125A	400/2	T>175°F	SHUTDOWN P3125A/S	BP MOTOR TEMP	DB PUMP RM	POTP-007	2.28
06B	SLL	TSH3125B	400/2	T>175°F	SHUTDOWN P-3125B/S	BP MOTOR TEMP	DB PUMP RM	POTP-007	3.28
06C	SLL	VT3125A1	400/1	V>.6IN/S	SHUTDOWN P3125A/S	BP VIBRATION	DB PUMP RM	POTP-007	2.29
06C	SLL	VT3125A2	400/2	V>.6IN/S	SHUTDOWN P3125A/S	BP VIBRATION	DB PUMP RM	POTP-007	2.30
06C	SLL	VT3125B1	400/1	V>.6IN/S	SHUTDOWN P-3125B/S	BP VIBRATION	DB PUMP RM	POTP-007	3.29
06C	SLL	VT3125B2	400/2	V>.6IN/S	SHUTDOWN P-3125B/S	BP VIBRATION	DB PUMP RM	POTP-007	3.30
06D	SLL	FSH3125A1	400/2	F>11SCFH	SHUTDOWN P3125A/S	BP SEAL AIR	DB COMP RM	POTP-007	2.33
06D	SLL	FSH3125A2	400/2	F>11SCFH	SHUTDOWN P3125A/S	BP SEAL AIR	DB COMP RM	POTP-007	2.34
06D	SLL	FSH3125B1	400/3	F>11SCFH	SHUTDOWN P-3125B/S	BP SEAL AIR	DB COMP RM	POTP-007	3.33
06D	SLL	FSH3125B2	400/3	F>11SCFH	SHUTDOWN P-3125B/S	BP SEAL AIR	DB COMP RM	POTP-007	3.34
06D	SLL	PSL3125A1	400/2	P<110PSIG	SHUTDOWN P3125A/S	BP SEAL AIR	DB COMP RM	POTP-007	2.35
06D	SLL	PSL3125A2	400/2	P<110PSIG	SHUTDOWN P3125A/S	BP SEAL AIR	DB COMP RM	POTP-007	2.36
06D	SLL	PSL3125B1	400/3	P<110PSIG	SHUTDOWN P-3125B/S	BP SEAL AIR	DB COMP RM	POTP-007	3.35
06D	SLL	PSL3125B2	400/3	P<110PSIG	SHUTDOWN P-3125B/S	BP SEAL AIR	DB COMP RM	POTP-007	3.36
06E	SLL	LSL3125A1	400/2	LEVEL LO	SHUTDOWN P3125A/S	BP OIL LEVEL	DB PUMP RM	POTP-007	2.31
06E	SLL	LSL3125A2	400/2	LEVEL LO	SHUTDOWN P3125A/S	BP OIL LEVEL	DB PUMP RM	POTP-007	2.32
06E	SLL	LSL3125B1	400/2	LEVEL LO	SHUTDOWN P-3125B/S	BP OIL LEVEL	DB PUMP RM	POTP-007	3.31
06E	SLL	LSL3125B2	400/2	LEVEL LO	SHUTDOWN P-3125B/S	BP OIL LEVEL	DB PUMP RM	POTP-007	3.32
06X	SLL	HS3125A	400/2	OFF	SHUTDOWN P3125A/S	HAND-OFF-AUTO	DB SWGR RM	POTP-007	7.2.1
06X	SLL	HS3125B	400/2	OFF	SHUTDOWN P-3125B/S	HAND-OFF -AUTO	DB SWGR RM	POTP-007	8.4.1
07	SLL	PT3125A	403	P<10PSIG	INHIBIT P3125A /S	BP-A INLET P	DB PUMP RM	POTP-007	2.38
07	SLL	PT3125B	403	P<10PSIG	INHIBIT P-3125B/S	BP-B INLET P	DB PUMP RM	POTP-007	3.38

W-058 Interlock Test Listing

(2/12/98)

4

IL	SYS	DEVICE	P&ID	ALARM	IL ACTION/(HW or SW)	FUNCTION	LOCATION	TESTED	COMMENTS
08	SLL	YAS841	405	RD FAIL	STOP P3125A/B/S	RUPT DISK MON	244A	POTP-004	9.70(A)/10.70(B) (Note 1)
08	SLL	YAS842	405	RD FAIL	STOP P 3125A/B/S	RUPT DISK MON	244A	POTP-004	9.79(A)/10.79(B) (Note 1)
09	SNL/SLL	P3125A or B	403	RUN	P102SY02A PERMSVE/S	XFER PUMP	DB PUMP RM	POTP-007	2.25/3.25
10	SNL/SLL	PT3125A	403	P > 70PSIG	STOP TRANSFER PUMP/S	BP-A INLET P	DB PUMP RM	POTP-007	2.38
10	SNL/SLL	PT3125B	403	P>70PSIG	STOP TRANSFER PUMP/S	BP-B INLET P	DB PUMP RM	POTP-007	3.38
11	SLL	LDE3151	404	LEAK	STOP P 3125A&B/H	SUMP LD	VS VAULT	POTP-005	10.23/10.24
11	SLL	LDE3151	404	LEAK	STOP P 3125A&B/H	SUMP LD	VS VAULT	POTP-008	2.48/2.49 (Note 5)
11	SLL	LDE3151A	404	LEAK	STOP P 3125A&B/H	SUMP LD	VS VAULT	POTP-008	2.62/2.63 (Note 5)
11	SLL	LDK3150	403	LEAK	STOP P 3125A&B/H	SUMP LD	DB PUMP RM	POTP-005	8.23/8.24
11	SLL	LDK3150	403	LEAK	STOP P 3125A&B/H	SUMP LD	DB PUMP RM	POTP-008	2.22/2.23 (Note 5)
11	SLL	LDK3150A	403	LEAK	STOP P 3125A&B/H	SUMP LD	DB PUMP RM	POTP-008	2.34/2.35 (Note 5)
12	SNL/SLL	LDE3151	404	LEAK	STOP XFER PMP SY-02A/H	SUMP LD	VS VAULT	POTP-005	10.19-10.22
12	SNL/SLL	LDE3151	404	LEAK	STOP XFER PMP SY-02A/H	SUMP LD	VS VAULT	POTP-008	2.46 (Note 5)
12	SNL/SLL	LDE3151A	404	LEAK	STOP XFER PMP SY-02A/H	SUMP LD	VS VAULT	POTP-008	2.60 (Note 5)
12	SNL/SLL	LDK3150	403	LEAK	STOP P102SY02A/H	SUMP LD	DB PUMP RM	POTP-005	8.19-8.22
12	SNL/SLL	LDK3150	403	LEAK	STOP P102SY02A/H	SUMP LD	DB PUMP RM	POTP-008	2.20 (Note 5)
12	SNL/SLL	LDK3150A	403	LEAK	STOP P102SY02A/H	SUMP LD	DB PUMP RM	POTP-008	2.32.1 (Note 5)
13	SNL/SLL	LDE3151	404	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	VS VAULT	POTP-005	10.25 (Note 3)
13	SNL/SLL	LDE3151	404	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	VS VAULT	POTP-008	2.47 (Note 5)
13	SNL/SLL	LDE3151A	404	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	VS VAULT	POTP-008	2.61 (Note 5)
13	SNL/SLL	LDK3150	403	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	DB PUMP RM	POTP-005	8.25 (Note 3)
13	SNL/SLL	LDK3150	403	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	DB PUMP RM	POTP-008	2.21 (Note 5)
13	SNL/SLL	LDK3150A	403	LEAK	INPUT TO 2E & 2W MPS/H	SUMP LD	DB PUMP RM	POTP-008	2.33 (Note 5)
14	SLL	PT3125C	403	P>1250PSIG	STOP P3125A/S	BP-A OUTLET P	DB PUMP RM	ATP-004//POTP007	9.10/2.39
14	SLL	PT3125D	403	P>1250SPIG	STOP P-3125B/S	BP-B OUTLET P	DB PUMP RM	ATP-004//POTP007	10.10/3.39
15	SLL	MOV3125AA	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40

HNF - 2381 Rev 0 41 Pg

ATT 2

W-058 Interlock Test Listing

(2/12/98)

5

IL	SYS	DEVICE	P&ID	ALARM	IL ACTION/(HW or SW)	FUNCTION	LOCATION	TESTED	COMMENTS
15	SLL	MOV3125AB	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AC	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AD	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AE	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AF	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AG	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AH	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AJ	400/2	*CLOSED	INHIBIT P3125A/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125AK	400/2	*CLOSED	INHIBIT P3125A/S	BP VENT VALVE	DB PUMP RM	POTP-007	2.40
15	SLL	MOV3125BA	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BB	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BC	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BD	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BE	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BF	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BG	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BH	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BJ	400/2	*CLOSED	INHIBIT P-3125B/S	BP DRAIN VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	MOV3125BK	400/2	*CLOSED	INHIBIT P-3125B/S	BP VENT VALVE	DB PUMP RM	POTP-007	3.40
15	SLL	SOV3163	403	*CLOSED	INHIBIT P3125A/B/S	PROCESS VV	DB PUMP RM	POTP-007	2.40, 3.40
16	SNL	PSH3113	402	P>10PSIG	2W MPS SHUTDOWN/H	SYS. PRESS	241SYA VP	POTP-005	12.34-12.37 (Note 1)
16	SNL	PSH3113	402	P>10PSIG	2W MPS SHUTDOWN/H	SYS. PRESS	241SYA VP	POTP-008	2.66, 2.68 (Note 5)
16	SNL	PSH3113A	402	P>10PSIG	2W MPS SHUTDOWN/H	SYS. PRESS	241SYA VP	NEW	NEW (Note 4)
16	SNL	PSH3113A	402	P>10PSIG	2W MPS SHUTDOWN/H	SYS. PRESS	241SYA VP	POTP-008	2.71, 2.73 (Note 5)
17	SNL	ZSH3113	402	*CLOSED	2W MPS SHUTDOWN/H	VALVE POSITION	241SYA VP	POTP-005	12.39-12.43 (Note 1)
18	SNL/SLL	LIT302C-1	409	LEVEL<5'	STOP P3100A	FLUSH TK LEVEL	FLUSH TK	POTP-001	4.37-4.39

W-058 Interlock Test Listing

(2/12/98)

6

IL	SYS	DEVICE	P&ID	ALARM	IL ACTION/(HW or SW)	FUNCTION	LOCATION	TESTED	COMMENTS
19	SNL/SLL	FSL302C-4A	400/1	NO FLOW	SHUTDOWN HTR 2/H	FLUSH FLOW	FLUSH SKID	POTP-001	5.4-5.7
19	SNL/SLL	FSL302C-4B	400/1	NO FLOW	SHUTDOWN HTR 1/H	FLUSH FLOW	FLUSH SKID	POTP-001	5.4-5.7
19	SNL/SLL	TIC302C-4C	400/1	T>180°F	SHUTDOWN HTR 2/H	PROCESS TEMP HI	FLUSH SKID	POTP-001	5.72-5.80
19	SNL/SLL	TIC302C-4D	400/1	T>180°F	SHUTDOWN HTR 1/H	PROCESS TEMP HI	FLUSH SKID	POTP-001	5.26-5.34
19	SNL/SLL	TIC302C-4E	400/1	T>375°F	SHUTDOWN HTR 2/H	SHEATH TEMP HI	FLUSH SKID	POTP-001	5.87-5.94
19	SNL/SLL	TIC302C-4F	400/1	T>375°F	SHUTDOWN HTR 1/H	SHEATH TEMP HI	FLUSH SKID	POTP-001	5.41-5.48
20	SNL	PT3167	404	P>10PSIG	SHUT DOWN XFER PUMP/S	SUPER PRESS	VS PUMP RM	POTP-005	7.0-7.12
20	SNL	PT3173	403	P> 10PSIG	STOP P102SY02A/S	SUMP TO SUPER	DB PUMP RM	POTP-005	6.0-6.12
20	SNL	PT3185	404	P>10PSIG	SHUT DOWN XFER PUMP/S	SUPER PRESS	VS PUMP RM	POTP-007	2.44-2.56
21	SNL	PT3125E	403	P>0PSIG	INHIBIT SUMP VALVES	SUMP DISCHARGE	DB PUMP RM	POTP-005	5.8-5.14
21	SNL	PT3126E	404	P>0PSIG	INHIBIT SUMP VALVES	SUMP DISCHARGE	VS PUMP RM	POTP-005	4.9-4.14

W-058 Interlock Test Listing

(2/12/98)

7

Notes:

- 1 Jumpers not installed at the time of the test. Testing was performed, using appropriate signals, from the connection point at the pit interface.
- 2 LSL3102 (Level in Tank SY-102) does not show in the current design as a control element. (Wiring was removed per project ECN W-058-339, pages 4 and 9.) However, the functional control of this device was tested as part of ATP-003, section 9.1 in the event that it is reinstated..
- 3 In accordance with design requirements, W-058 leak detection is not connected to the 200E Tank Farm Master Pump Shutdown (MPS) scheme. Interposing relays are provided at the 244A lift station for future connection, if desired. These relays were tested for proper action. The project is connected to the 200W MPS and this connection was also tested.
- 4 Device PT3113A is redundant to PT3113. This device was not installed prior to the completion of testing for POTP-005.
- 5 Redundant devices PT3113A, LDE3150A, and LDE3151A were installed subsequent to the normal testing. POTP-008 was put in place to perform the testing of these devices and to retest the original instruments.

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 644835

Proj. ECN W-058-389

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input type="checkbox"/> Change ECN <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. M. L. ALEXANDER, FDNW, G3-14, 372-3664	4. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Date 3-13-98	
	6. Project Title/No./Work Order No. REPLACEMENT OF CROSS-SITE TRANSFER SYSTEM/W-058/C12300	7. Bldg./Sys./Fac. No. 241-SY-271	8. Approval Designator Q/SC-1 (SAFETY CLASS)	
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) H-2-822501. SH 2 REV 1	10. Related ECN No(s). W-058-381	11. Related PO No. NONE	

12a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. NA	12c. Modification Work Complete NA	12d. Restored to Original Condition (Temp. or Standby ECN only) NA
Design Authority/Cog. Engineer Signature & Date		Design Authority/Cog. Engineer Signature & Date	

13a. Description of Change

13b. Design Baseline Document? Yes No

SC-3 (General Service)

This ECN revises ECN W-058-381 Page 10.

Revise the wiring to the PSH-3113 and PSH-3113A Limit Alarms to series connect A and B channel contacts of both alarms together to provide loss of signal shutdown capability as detailed below:

PSH-3113 Limit Alarm - (1) Remove jumper wire from Terminal 9. Install new jumper wire from Terminal 9 to Terminal 7. (2) Install new jumper wire from Terminal 6 to Terminal 10 of PSH-3113A Limit Alarm. (3) Wire # B18-H will remain on Terminal 10.

PSH-3113A Limit Alarm - (1) Remove jumper wire on Terminal 7 and scrap. Install new jumper wire from Terminal 9 to Terminal 7. (2) Wire # PCU-1 will remain on Terminal 6.

14a. Justification (mark one)

Criteria Change Design Improvement Environmental Ability Deactivation
 As-Found Facilitate Const Const. Error/Omission Design Error/Omission

14b. Justification Details

Wire Limit Alarm contacts in series to ensure that a loss of signal will shut down the the SY supernate pump.

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

FDNW

Const. Doc. Control S2-53

WH Bryant LMHC S0-09
 RL Schlosser LMHC R1-59
 C. van Katwijk NHC R3-47

DISTRIBUTION

RELEASE STAMP

3-16-98

DATE: 3-16-98
 STA: 4

HANFORD RELEASE

ID: 6

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	E.A. Pacquet - W-058 Testing	Date 03/16/98
Project Title/Work Order		EDT No. 623668
Replacement Cross-Site Transfer System		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./Appendix Only	EDT/ECN Only
R.J. Brown, LMHC	T4-08	X			
W.G. Brown, LMHC	T4-07	X			
J.E. Dunks, FDNW	R3-47	X			
L.R. Hall, FDNW	R3-47	X			
B.J. Harp, DOE-RL	S7-54	X			
D.A. Greenaway, LMHC	T4-09	X			
J.L. Henderson, FDNW	G3-14	X			
O.M. Jaka, LMHC	S5-12	X			
R.L. Legg, LMHC	R2-50	X			
D.R. Nunamaker, LMHC	T4-07	X			
E.A. Pacquet, NHC	R3-47*	X			
G.L. Parsons, NHC	R3-47*	X			
C.R. Reichmuth, LMHC	T4-07*	X			
M.J. Sutey, LMHC	T4-08	X			
C. van Katwijk, NHC	R3-47	X			
M.D. Gerken, NHC	R3-47*	X			
D.O. Dobson, LMHC	R2-50	X			
M.J. Bailey, LMHC	T4-07	X			
Project Files	R1-29	X			

* Advance Copy