

Sta. 4 58

1. EDT 624744

2. To: (Receiving Organization) SST Retrieval Projects	3. From: (Originating Organization) SST Retrieval Projects	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: Project W-320	6. Design Authority/ Design Agent/Cog. Engr.: J. W. Bailey	7. Purchase Order No.: N/A
8. Originator Remarks: Revision 0 Supporting Document for Approval and Release		9. Equip./Component No.: WRSS Supernate Transfer System
		10. System/Bldg./Facility: 241-AY-102/241-C-106
11. Receiver Remarks: 11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		12. Major Assm. Dwg. No.: H-2-818423
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: ASAP

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-3057	ALL	0	Project W-320, Operational Test OTP-320-003 Test Report	SQ	1,2	N/A	N/A

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	1	Design Authority JW Bailey	<i>JW Bailey</i>	S2-48	7/20/98	1	1	Test Dir. JE Andrews	<i>JE Andrews</i>	S5-04	7/15/98
1	1	W-320 Cog.Eng JR Bellomy	<i>JR Bellomy</i>	S2-48	7/20/98	1	1	Test Dir. KJ Anderson	<i>KJ Anderson</i>	S5-04	7/15/98
1	1	Cog.Eng. RL Powers	<i>RL Powers</i>	S5-13	7/20/98	1	1	W-320 S/U Mgr RR Bevins	<i>RR Bevins</i>	S2-48	7/20/98
1	1	Cog. Mgr. DG Baide	<i>DG Baide</i>	S5-05	7/20/98			Project Files			
1	1	QA KC Conrad	<i>KC Conrad</i>	S2-48	7/20/98						
1	1	Safety SU Zaman	<i>SU Zaman</i>	S5-12	7/20/98						
1	1	W320 Proj. Mgr JW Lentsch	<i>JW Lentsch</i>	W320	7/20/98						

18. JR Bellomy <i>JR Bellomy</i> 7/20/98 Signature of EDT Date Originator	19. RE Larson 7/22/98 Authorized Representative Date for Receiving Organization	20. JW Bailey 7/20/98 Design Authority/ Cognizant Manager Date	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	----------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

# Project W-320, Operational Test Procedure OTP-320-003 Test Report

R.R. Bevins

Numatec Hanford Company, Richland, WA 99352

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

EDT/ECN: EDT 624744

UC: 510

Org Code: 8C400

Charge Code: D29PR

B&R Code: EW3130010

Total Pages: 258

Key Words: Project W-320, WRSS, Testing, OTP-320-003, Supernate Transfer System

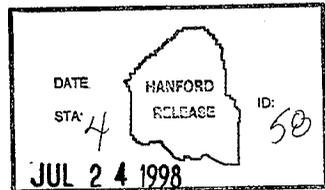
Abstract: This report documents and summarizes the results of OTP-320-003 Project W-320 Operational Testing of the WRSS Supernate Transfer System.

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

Printed in the United States of America. To obtain copies of this document, contact: Document Control Services, P.O. Box 950, Mailstop H6-08, Richland WA 99352, Phone (509) 372-2420; Fax (509) 376-4989.

*Kara A. Brea*  
Release Approval

*7/23/98*  
Date



Release Stamp

Approved for Public Release

HNF-3057  
Revision 0

Project W-320  
Operational Test OTP-320-003  
Test Report

Prepared By  
J. R. Bellomy  
July, 1997

**TEST SUMMARY****INTRODUCTION**

Project W-320 Operational Test OTP-320-003 was performed to verify components of the Waste Retrieval Sluicing System (WRSS) supernate transfer system functioned as designed following construction completion and turnover to operations. All equipment operation was performed by Tank Farms Operations personnel following the operational test procedure and referenced operating procedures.

Specific supernate transfer equipment tested by OTP-320-003 included the following WRSS components:

- 241-AY-102 Winch Assembly W-0621
- 241-AY-102 Immersible Pump P-0621
- 241-AY-102 Sluice Booster Pump Seal Nitrogen Gas System
- 241-AY-102 Sluice Booster Pump P-0622
- 241-C-106 Sluicer S-1361
- 241-AY-102 Pit 02E Chiller R-0621
- 241-AY-102 Valve HV-0625
- Supernate Transferline Flushing System

Testing was completed over the course of approximately 4 weeks as tank farm conditions and configuration, equipment availability, and operations resources allowed. All testing was performed with the 702-AZ ventilation system and the 296-P-16 ventilation systems in operation.

Test procedure OTP-320-003 required two revisions during testing to incorporate Procedure Changes Authorizations (PCAs) necessary to facilitate testing. Various sections of testing are documented on each procedure revision. The completed test procedure is included as Attachment A. Exception Reports generated during the course of testing are included as Attachment B.

## TESTING RESULTS

All equipment operated as designed and no equipment operational or performance deficiencies were identified which would preclude safe sluicing operations.

During the course of testing a total of ten test exceptions were prepared. The problems identified on the test reports were primarily procedure inaccuracies (improper criteria or operational characteristic or sequence identified), labeling problems, and instrument calibrations.

Excluding the exception documenting the frequent tripping of the seismic system (Exception Number 10), all of the conditions noted on the test exceptions have been corrected, retested as applicable, and appropriately closed. The test exception associated with the seismic triggers has been transferred to the Affidavits 5.1.A and 5.1.B allowing closure of the test exception and completion of the test. Each of the test exceptions are summarized below.

### Exception Number 1

Exception 1 was written to document problems noted with the Supernate Mag Flowmeter FQI/FIT-0621. OTP Section 5.8 required values be recorded from the flowmeter during flushing. Prior to and during flushing operations the flow indicator was reading full scale and the totalizer was counting at the maximum rate. The decision was made to continue testing as the flowmeter was not a critical instrument in support of the flushing operation. Subsequent troubleshooting of the mag flowmeter revealed a wiring problem associated with the signal conductors terminated at the mag flowmeter electronics. Following correction of the wiring problems, the mag flowmeter was energized and tested using a signal generator to verify it was wired correctly and responded properly.

### Exception Number 2

Exception Number 2 documented labeling problems noted at the 241-AY-102, Pit 02E Chiller (R-0621) and identified that the minimum clearance of 3 feet required by the National Electrical Code had not been maintained at the chiller main electrical control panel due to the location of the HV-0625 pneumatic flush valve operator station. Labels were corrected and the HV-0625 pneumatic flush valve operator station was relocated to provide the proper separation from the chiller main electrical control panel. Following relocation, the HV-0625 pneumatic flush valve operator station was tested to verify proper valve operation and position indication. Retesting was performed as part of the work package prepared to relocate the control station. A copy of the completed test record is attached to the exception report.

**Exception Number 3**

Exception Number 3 identified a procedure discrepancy only. The procedure required verification that the sluicer panel lights were illuminated upon energizing the sluicer hydraulic control system. As designed, the panel lights are not energized until switch HS-13616 (Sluicer System On/Off) is placed in the on position. The exception was closed and no further action was taken.

**Exception Number 4**

Exception Number 4 was written because the sluicer tilt angle as displayed on ZI-13613 did not indicate -40 degrees when the sluicer was positioned at the maximum tilt angle (-38 degrees displayed). This condition was noted as acceptable and testing was continued as the condition corresponded to factory test data and the sluicer is never planned to be operated at a -40 degree tilt angle.

**Exception Number 5**

Exception Number 5 was prepared to document problems associated with the sluicer bar graph not tracking properly with the digital display. The bargraph response is programmable and input values had apparently been reset following initial setup during acceptance testing. The bargraph was reprogrammed to track properly with the digital display and testing was continued. The bargraph set values can not be user protected without also disabling or locking out remote left and right setpoint adjustment which is required to be accessible to operators during sluicing. Because the instrument was operating as designed, Exception Number 5 was rescinded. The proper bargraph set point values were recorded, and the procedure for verifying proper values are programmed into the instrument were provided to the individuals developing sluicing operating procedures. The values and the steps required to verify proper values are entered into the instrument will be included in the sluicing operating procedure in the event they are accidentally readjusted in the future.

**Exception Number 6**

Exception Number 6 documented problems encountered with the Winch W-0621 position indicator ZI-0621. When the winch was in the fully retracted position the position indicator was reading approximately 45 inches (should have displayed 0 inches). During troubleshooting a multimeter confirmed that the proper input signal to the instrument was being transmitted from the winch resolver microprocessor. Instrument technicians recalibrated ZI-0621 and testing was resumed. The position indicator worked properly over the required range of travel and

indicated 0 inches when the winch was fully retracted. Although the position indicator worked properly after adjustment, the instrument has a recurring problem with the zero point drifting over time, requiring frequent calibration.

ZI-0621 is an analog instrument reading out in 5 inch increments and is not well suited for its application, as the winch position resolver/microprocessor is accurate to approximately .25 inches over the full range of travel. Because the instrument is subject to recurring drift from 0 and is not capable of displaying position more accurately than 2.5 inches it is recommended that it be replaced with a digital position indicator, as has been done at C-Farm. This would eliminate the need for frequent recalibration and enhance operator control.

### **Exception Number 7**

Exception Number 7 identified a procedure discrepancy only. During testing of the booster pump seal gas system, the procedure required the nitrogen flow indicator FI-0622 read less than 10%. Following system pressurization to 165 psig, the flow indicator was reading 15%. The system is operating properly if the indicated flow is less than 65% and the flow alarm is clear. The test exception was dispositioned accordingly and testing was continued. During testing the nitrogen system operated as designed.

### **Exception Number 8**

Exception Number 8 was generated during booster pump P-0622 operation. During operation of the pump, the motor amperage and pump speed were observed to be outside of the range specified by the test procedure. During the startup sequence, the booster pump keypad also did not display "RDY" as required by the test procedure. The pump motor amperage was consistent with previous motor amperages recorded during dry (unloaded) pump operation and noted as acceptable. The pump speed was consistent with that recorded during previous full speed dry operations and noted as acceptable as well. The VSD keypads are not programmed to display "RDY" following the diagnostic routine and also functioned as designed. All conditions noted on the exception report were concluded to be acceptable conditions, representative of proper system operation.

**Exception Number 9**

Exception Number 9 documented that several unlabeled wires were present within the 241-AY-02E Pit Chiller electrical cabinet. The majority of the wires were identified as unused thermocouple extension wires. These wires were removed and discarded as they did not serve a purpose. Remaining unlabeled conductors were identified as conductors installed by the vendor to support optional features not used in the Pit 02E application. These wires were labeled as vendor spares and taped at the request of operations.

**Exception Number 10**

Exception Number 10 was prepared to document nuisance tripping of the seismic system which occurred frequently throughout the duration of testing. Similar problems had been noted with the A cabinet triggers during acceptance testing and were resolved by installation of a transient voltage suppressor inline to the seismic detector battery charger. Tripping observed during performance of OTP-320-003 was associated with the tripping of the B cabinet trigger which does not have an inline voltage suppressor installed. During performance of OTP-320-002 frequent tripping of the seismic triggers was also noted. Neither of the C-Farm Seismic triggers are equipped with transient voltage suppressors.

This exception was closed and will be tracked as an open punchlist item by Project W-320 Affidavits 5.1.A and 5.1.B. An ECN will be generated to install transient voltage suppressors in all seismic cabinets. Following installation suppressors, system operation will be monitored to ensure nuisance tripping does not continue at an unacceptable frequency such as experienced during performance of OTP-320-002 and OTP-320-003.

In addition to the exceptions noted above, an additional deficiency was noted during testing and documented in the test log (reference 5-20-98 test log entry). While preparing for the system flush, the tank 241-AY-102 low pressure alarm was received. This caused an annunciation at ANN-0621, however the excessive vacuum alarm on the annunciator panel was illuminated. Subsequent troubleshooting was performed which revealed the annunciator windows for the tank low and high pressure alarms were improperly identified (switched). This condition was subsequently corrected in the field via ECN 647843.

**TEST CONCLUSIONS**

As a result of the testing performed under OTP-320-003, it can be concluded that with the exception of the seismic system, all components of the WRSS Supernate Transfer System function as designed and are in a state of readiness supportive of planned sluicing operations. Visual inspections performed during flushing operations confirm that jumper connections are leak tight and siphon holes are unobstructed. The flush valve has been shown to operate as designed and provide proper position indication. Raw water flush jumper has also been proven to be capable of remote installation and form a liquid tight seal during flushing operations. Testing has also demonstrated the proper operations of the supernate immersible pump, booster pump, winch assembly, sluicer, and pit chiller operation and control system.

Attachment A-1

Completed Test Procedure OTP-320-003, Revision A-1

## WRSS SUPERNATE TRANSFER SYSTEM OPERATIONAL TEST

Last Full Revision: A-0

Release Date: 5/19/98

USQ Screening Number: TF-98-0281

Approval Designator: ESQ

Current Modification: A-1

USQ Screening Number: TF-98-0281

Approval Designator: ESQ

PCA Incorporated: ETF-98-331

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/20/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/20/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/20/98</u>
OE/DST	<u>K.J. Anderson</u>	<u>5/20/98</u>
Environmental Eng.	<u>J.D. Guberski</u>	<u>5/20/98</u>
COG Engineer	<u>Randy L. Powers</u>	<u>5/20/98</u>
Acceptance Review	<u>L. Ross</u>	<u>5/20/98</u>
Approval Authority	<u>K.J. Anderson</u>	<u>5/20/98</u>

Justification: Correct labeling errors and insert LCO 3.2.1 limits.

## Summary of Changes:

Pg 8: Deleted step 2.4.10.2.

Pg 10: Added LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.

Pg 23: Deleted step 5.1.19.5.

Pg 27: Swapped step 5.2.9 and 5.2.10.

Pg 30: Changed "FI-0622" to "FI-06221" in steps 5.3.15.2 and 5.3.17.

Pg 34: Added window 6-1 for SBM Sluice Pump P-0621.

Pg 57: Deleted ZAL-0621 STATUS data block.

Pg 59: Changed nomenclature to FI-06221.

TABLE OF CONTENTS

PAGE

1.0 PURPOSE AND SCOPE . . . . . 3  
 1.1 PURPOSE . . . . . 3  
 1.2 SCOPE . . . . . 3

2.0 INFORMATION . . . . . 3  
 2.1 TERMS AND DEFINITIONS . . . . . 3  
 2.2 RESPONSIBILITIES . . . . . 4  
 2.3 REFERENCES . . . . . 5  
 2.4 GENERAL INFORMATION . . . . . 6  
 2.5 RECORDS . . . . . 8

3.0 PRECAUTIONS AND LIMITATIONS . . . . . 9  
 3.1 RADIATION AND CONTAMINATION CONTROL . . . . . 9  
 3.2 ENVIRONMENTAL COMPLIANCE . . . . . 9  
 3.3 LIMITS . . . . . 10

4.0 PREREQUISITES . . . . . 16  
 4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES . . . . . 16  
 4.2 PERFORMANCE DOCUMENTS . . . . . 16  
 4.3 CONDITIONS AND ACTIONS . . . . . 17

5.0 PROCEDURE . . . . . 20  
 5.1 WINCH ASSEMBLY W-0621 . . . . . 20  
 5.2 IMMERSIBLE SLUICE PUMP P-0621 . . . . . 25  
 5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM . . . . . 29  
 5.4 SLUICE BOOSTER PUMP P-0622 . . . . . 31  
 5.5 SLUICER S-1361 . . . . . 40  
 5.6 SLUICE PIT 241-AY-02E CHILLER . . . . . 45  
 5.7 VERIFY VALVE HV-0625 OPERATION . . . . . 49  
 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS . . . . . 51  
 5.9 TEST CLOSURE . . . . . 52

ATTACHMENT 1 - OTP-320-003 TEST LOG . . . . . 53  
 ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT . . . . . 54  
 ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG . . . . . 55  
 ATTACHMENT 4 - OTP-320-003 DATA SHEET . . . . . 56  
 ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP . . . . . 68  
 ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET . . . . . 71  
 FIGURE 1 - PRESSURE SIMULATOR CONNECTION . . . . . 72  
 PROCEDURE HISTORY SIGNATURE SHEET . . . . . 73

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	2 of 73

## 1.0 PURPOSE AND SCOPE

### 1.1 PURPOSE

This procedure provides instructions for operability testing of the Supernate Transfer portion of the Tank 241-AY-102 Waste Retrieval Sluicing System, and Sluice Pit 241-AY-102 Chiller.

### 1.2 SCOPE

- 1.2.1 This procedure involves the W-320 Tank 241-AY-102 Supernate Transfer System. Instructions are provided to verify correct operation of the components and portions of their associated instrumentation, controls, and alarms, but does not allow for the transfer of tank waste.
- 1.2.2 The following items will be tested for operation:
- Immersible Sluice Pump Winch Assembly W-0621
  - Immersible Sluice Pump P-0621
  - Sluice Booster Pump P-0622 Nitrogen Seal/Purge System
  - Sluice Booster Pump P-0622
  - Sluicer S-1361
  - Sluice Pit 241-AY-02E Chiller
  - Valve HV-0625

## 2.0 INFORMATION

### 2.1 TERMS AND DEFINITIONS

None.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	3 of 73

## 2.2 RESPONSIBILITIES

### 2.2.1 Test Engineer:

- Provide technical support during testing.
- Provide programming support during testing.
- Review test documents to validate acceptance.
- Record equipment status and data per this procedure.
- Record data exceptions and other notes as required on the Operational Test Procedure Data Sheets.
- Prepare post testing documents.

### 2.2.2 Craft (TWRS Maintenance and/or Construction Forces):

- Provide assistance during Operational Test Procedure testing.
- Provide equipment for performance of this Operational Test Procedure.

### 2.2.3 Quality Control Inspector:

- Review recorded test data for accuracy and completeness at completion of test.
- Perform activities associated with QC Hold Point.

### 2.2.4 Test Director:

- Verifies prerequisites complete prior to start of test.
- Overall control of the testing process and change record authorization for this Operational Test Procedure.
- Ensures all required data is collected.
- Responsible for Safe and productive accomplishment of testing.
- Ensure safe working conditions and practices.
- Ensure compliance with test documents and Technical Safety Requirements/Documents (TSRs/OSDs) during testing.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	4 of 73

## 2.2 RESPONSIBILITIES (Cont.)

- Communicate and coordinate testing with DST Shift Manager.
- Ensures review and approval of all modifications to test procedures are completed prior to return to testing.
- Act as direct line of communication and centralized point of control during normal, abnormal, and casualty situations.
- Conduct pretest briefings as required.
- Schedule/reschedule tests as required.
- Conduct pre-job system walkdowns.
- Review test documents to validate acceptance.
- Verify all test instrumentation is within current calibration cycle.

### 2.2.5 Operations:

- Perform all operations required by this procedure per direction of the Test Director.
- Operate ventilation systems as required.
- Record test data as required.

## 2.3 REFERENCES

- HNF-SD-WM-PCP-013, "Tank 241-C-106 Waste Retrieval Sluicing System Process Control Plan"
- T0-320-011, "OPERATE C-106 IN TANK IMAGING SYSTEM"
- T0-320-014, "WRSS Transfer Line Flushing"
- Certified Vendor Information #22668
- H-2-818559 SH. 2-5, PROJECT W-320 P&ID TANK 241-C-106
- H-2-818560 SH. 3, PROJECT W-320 P&ID TANK 241-AY-102
- H-2-818680 C FARM ONE-LINE DIAGRAM

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	5 of 73

## 2.4 GENERAL INFORMATION

### 2.4.1 CHANGE CONTROL

Change control shall be in accordance with HNF-IP-0842.

### 2.4.2 EXCEPTIONS

2.4.2.1 Test exceptions are used to document unexpected results and identify appropriate actions, not to circumvent performance requirements.

2.4.2.2 All test exceptions shall be given a sequential number and recorded on Attachment 1, OTP-320-003 TEST LOG.

2.4.2.3 Attachment 2, OTP-320-003 TEST EXCEPTION REPORT, shall be filled out to record and disposition each test exception.

### 2.4.3 ALARM RESPONSE

2.4.3.1 This Operational Test Procedure identifies all alarms expected as a result of testing and provides instructions for responding to those alarms.

2.4.3.2 Existing alarm response procedures shall be used when responding to unexpected alarms which occur during testing.

2.4.3.3 Unexpected alarms received during testing, that are associated with this test, shall be logged as test exceptions and evaluated by the Test Director for effect on the test.

2.4.4 Contact Test Director and Test Engineer for additional instructions if changing plant conditions affect testing or delays extend test duration past end of the (testing) shift.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	6 of 73

## 2.4 GENERAL INFORMATION (Cont.)

- 2.4.5 If during performance of this procedure, any of the following conditions are found, **IMMEDIATELY** notify the assigned Test Director and Test Engineer:
- Any equipment malfunction which could prevent fulfillment of functional requirements.
  - Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.
  - Any other unexpected anomalies.
- Test Director shall assess the effect on the plant and the test and direct either continuation of the test in the same section, proceeding to another attachment or section of the test, or suspension of the test per step 2.4.10 and establishing a safe condition for equipment.
- 2.4.6 Comply with the Hanford Site Wide Lock and Tag policy requirements, HNF-IP-0842, Vol. II, Section 4.9.1.
- 2.4.7 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 the desired range.
  - Have an accuracy (consistent with state-of-the-art limitations) equal to or greater than the accuracy specified in the procedure.
- 2.4.8 Timing measurements shall be made with commercially available timing devices.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	7 of 73

## 2.4 GENERAL INFORMATION (Cont.)

### 2.4.9 SYSTEM STATUS

Record all changes in equipment configuration, comments and observations by participants, and all other data pertinent to the test on Attachment 1, OTP-320-003 TEST LOG.

### 2.4.10 SUSPENSION OF TEST AND RESUMING TEST

2.4.10.1 Test Director may unilaterally, for any reason, stop testing, and place equipment in a safe condition. All suspension of testing shall be documented on Attachment 1, OTP-320-003 TEST LOG.

~~2.4.10.2 The Joint Test Review Group shall be notified of unplanned test stoppage and shall concur with resumption of testing. Concurrence shall be documented on Attachment 1, OTP 320 003 TEST LOG.~~

2.4.10.3 If a section of the test is suspended for any reason prior to completing all steps, the Test Director shall establish initial conditions necessary to resume testing for that section. Previously completed sections need not be repeated unless directed by the Test Director to establish conditions required to resume the test.

## 2.5 RECORDS

The performance copy of the Operational Test Procedure and all completed attachments shall be filed as a permanent test record (Operational Test Report).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-1	5/20/98	8 of 73

### 3.0 PRECAUTIONS AND LIMITATIONS

#### 3.1 RADIATION AND CONTAMINATION CONTROL

- 3.1.1 Work in Radiological Areas shall be review by Radiological Control Engineering and Technical Support prior to release (HNF-IP-0842 Vol. 1, Section 1.1).
- 3.1.2 High dose rates and loose contamination are possible during pit activities
- (HP) 3.1.3 Indicates Health Physics (Health Physics Technician) hold points.
- 3.1.4 When radiological contamination or radiation dose rate exceeds limiting conditions specified in Radiological Work Permit, stop work authority shall be initiated per HSRCM-1, Article 345.
- 3.1.5 Implement high radiation area physical access controls per HNF-IP-0842, Vol. VII, Section 2.2.
- 3.1.6 All equipment removed from tank or pits shall be treated as being radiologically contaminated.

#### 3.2 ENVIRONMENTAL COMPLIANCE

Any leakage detected during transfer line flushes must be reported to Environmental Operations Compliance per the Environmental Compliance On-Call list. Operations Compliance will determine reportability per Washington Administrative Code, Chapter 173-303 requirements.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	9 of 73

### 3.3 LIMITS

Tank Waste Remediation System Technical Safety Requirements, HNF-SD-WM-TSR-006

#### 3.1 CONFINEMENT

##### 3.1.1 Transfer System Covers

LCO 3.1.1 Transfer system covers shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA

APPLICABILITY: Transfer system covers that are:

- associated with structures that are PHYSICALLY CONNECTED to an ACTIVE WASTE transfer pump not under administrative lock; and
- not under the control of AC 5.22, "Transfer System Cover Removal Controls."

#### 3.2 FLAMMABLE GAS

##### 3.2.1 DST and AWF Tank Ventilation Systems

LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA

APPLICABILITY: DSTs and AWF tanks.

##### 3.2.2 SST Ventilation Systems - Active

LCO 3.2.2 An active ventilation system shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA SSTs with active ventilation systems (241-C-105 except

APPLICABILITY: during WRSS operations, C-106, SX-101, SX-102, SX-103, SX-104, SX-105, SX-106, SX-107, SX-108, SX-109, SX-110, SX-111, SX-112, and SX-114).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	10 of 73

## 3.3 LIMITS (Cont.)

## LIMIT - AC 5.10 Ignition Controls

5.10.2 Program Key Elementsb. Vehicle Controls

- Vehicle access within the tank farm boundary shall be limited to vehicles whose fuel systems are protected from damage to the integrity of the fuel systems caused by potential collisions with tank structures (e.g., mechanical protection such as a skid plate on the fuel tank or reservoir tanks physically located higher than risers or vehicle axles).

c. Flammable Gas Ignition ControlsIgnition Source Control Set #2

5. Electrical equipment shall be designed to meet NFPA 70, Class I, Division 2, Group B criteria or provide equivalent safety. As a minimum, this shall be interpreted to mean the equipment is nonsparking under normal operation or, if normally sparking, the sparking component(s) shall be continuously isolated (purged and pressurized) from the potentially flammable gas environment, or the design of the device enclosure shall be of sufficient strength (explosion-proof) to prevent propagation of a gas burn to the environment external to the enclosure (NFPA 70).
6. Either automatic shutdown or alarming with manual shutdown is required upon loss of protective gas pressure or flow as defined by NFPA 496 Type Z pressurization. In EX-TANK INTRUSIVE region applications, electrical equipment that does not meet Class I, Division 2, Group B may be used, if it is automatically shutdown by combustible gas detection systems.

5.10.3 Applicability

This program applies to SSTs, DSTs (except Tank 241-SY-101), AWF tanks, DCRTs, catch tanks, IMUSTs, WASTE transfer systems, 204-AR Waste Unloading Facility, 244-AR Vault, and the 244-CR Vault. Controls for Tank 241-SY-101 are included in AC 5.9, "Flammability Controls."

Flammable gas ignition controls apply to tanks with a potential flammable gas hazard, which include SSTs, DSTs, AWF tanks, DCRTs, catch tanks, IMUSTs, 244-AR Vault, and the 244-CR Vault.

INTRUSIVE controls and vehicle controls apply to tanks with a potential organic solvent hazard, which are identified in HNF-SD-WM-B10-001, Chapter 5.0, Table 5.3.2.15-6.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	GTP-320-003	A-1	5/20/98	11 of 73

### 3.3 LIMITS (Cont.)

LIMIT - AC 5.13 Encasement Seal Loop Controls

#### 5.13.1

##### Requirement for Encasement Seal Loop Controls

A program shall be maintained to control encasement seal loop drain line isolation valves (hydrostatic test valves).

#### 5.13.2

##### Program Key Elements

During WASTE transfer through a WASTE transfer system, all encasement seal loop drain line isolation valves associated with PHYSICALLY CONNECTED piping shall be in the "open," "drain," or "operate" position, as applicable to the particular valve to provide an open drain path.

LIMIT - AC 5.20 Transfer Pump Administrative Lock Controls

#### 5.20.1

##### Requirement for Transfer Pump Administrative Lock Controls

A program shall be maintained for administrative lock controls on WASTE transfer pumps to minimize the potential for inadvertent pump starts.

#### 5.20.2 Program Key Elements

- a. The administrative lock of a WASTE transfer pump is demonstrated by removing and securing the motive force from the pump (e.g., electrical power, steam, water, or air).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	12 of 73

**3.3 LIMITS (Cont.)**

b. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps locked in accordance with AC 5.20, Transfer Pump Administrative Lock Controls," shall normally be maintained OPERABLE. OPERABILITY is demonstrated by periodic VERIFICATION that the transfer system covers are in place, and periodic performance of a FUNCTIONAL TEST of the service water pressure detection systems and transfer leak detection systems.*

*Transfer system covers, service water pressure detection systems, and transfer leak detection systems may be inoperable provided they are specifically identified and periodic management reviews are performed to approve their continued inoperability. The frequency of management reviews is based on the number of affected transfer system covers, service water pressure detection systems, and transfer leak detection systems, and the duration of their inoperability.*

c. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps not locked in accordance with the administrative lock control program are controlled in accordance with LCO 3.1.1, "Transfer System Covers and Entry Doors;" LCO 3.1.2, "Service Water Pressure Detection Systems;" and LCO 3.1.3, "Transfer Leak Detection Systems," respectively.*

- 3.3.1 All portions of the test shall be completed before the system is either accepted or rejected.
- 3.3.2 All electrical and mechanical apparatus shall be operated as designed.

ACCEPTANCE CRITERIA

3.3.3 This Operational Test Procedure will be considered successful if all the following criteria are met:

3.3.3.1 Winch W-0621

- Winch shall lower and raise the immersible pump and stop raise movement when retracted travel limit is reached. This test is unable to verify the extended travel interlock.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-1	5/20/98	13 of 73

### 3.3 LIMITS (Cont.)

#### 3.3.3.2 Immersible Slurry Pump P-0621

- Pump P-0621 shall start and stop using START STOP switch.
- Pump P-0621 pump indicator lights shall work properly.

#### 3.3.3.3 Booster Pump Nitrogen Purge System

- PCV-06221 set at 325 (320 to 330) psig.
- PCV-06222 set at 50 (50 to 55) psig (Dry Impeller).
- FI-0622 indicates less than 10%.
- ANN-0621 Annunciator Window BOOSTER PUMP SEAL GAS TROUBLE (XA-06221) indicates ON when required.

#### 3.3.3.4 Booster Pump P-0622

- Pump P-0622 shall start and stop using the START and STOP switches.
- Pump P-0622 speed is adjustable from 1500 to approximately 3000 RPM locally.
- Pump P-0622 shall stop when COAST/STOP button is pushed.
- Pump P-0622 shall shutdown from local start when low suction pressure condition is present.
- Pump P-0622 indicators shall work properly.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	14 of 73

## 3.3 LIMITS (Cont.)

HNF-3057, Rev.0  
Page A1-153.3.3.5 Sluicer S-1361

- Sluicer S-1361 shall pan left and right and maintain set position when in manual.
- Sluicer S-1361 shall tilt up and down and maintain set position when in manual.
- Sluicer S-1361 shall sweep left to - 90°, and right to 90° when in Automatic Pan Control.
- Sluicer S-1361 indicators shall work properly.

3.3.3.6 Sluice Pit 241-AY-02E Chiller

- Pit 241-AY-02E Chiller shall start and decrease Pit 241-AY-02E temperature.
- Pit 241-AY-102 Chiller indicators shall work properly.

3.3.3.7 Valve HV-0625

- Valve HV-0625 shall cycle and route water to Tank 214-C-106 or 241-AY-102 as selected.
- No visible leakage from flush jumper connection.
- No visible leakage from transfer jumper connections.
- Identified instruments respond to flush water flow.



3.3.4 Indicates Quality Control (QC) Hold Points. When each hold point is reached no further steps are to be performed until a QC representative has signed off required step(s).



3.3.5 Indicates Health Physics (HP) Hold Points. When each hold point is reached no further steps are to be performed until a HP representative has signed off required step(s).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	15 of 73

## 4.0 PREREQUISITES

HNF-3057, Rev.0

Page A1-16

### 4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

- ACROTECH TS-350A Transducer Simulator for inserting pump suction pressure signal.
- Means of communication between control room and equipment locations (i.e. radios/cell phones).
- One large straight bladed screwdriver.
- Three (3) temporary cameras.

### 4.2 PERFORMANCE DOCUMENTS

- TO-320-011, "OPERATE C-106 IN-TANK IMAGING SYSTEM".
- TO-320-014, "TRANSFER LINE FLUSHING"
- TO-060-050, "296-P-16 HVAC"
- TO-060-350, "AY/AZ TANK VENTILATION PRIMARY EXHAUST SYSTEM."
- TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".
- TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".
- 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".
- Operating procedures for temporary cameras (to be provided in Job Control System Work Packages).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	16 of 73

## 4.3 CONDITIONS AND ACTIONS

HNF-3057, Rev.0

Page A1-17

4.3.1 **VERIFY** Health Physics Technician support availability.

NOTE - A daily pre-job briefing shall be performed by the Test Director and documented in Attachment 1, OTP-320-003 TEST LOG.

4.3.2 **CONDUCT** an initial pretest briefing for all personnel involved in the performance of this Operational Test Procedure.

TEST DIRECTOR INITIALS/DATE: JSA 5/20/98

NOTE - Signature Log requirement is ongoing as new individuals become involved in the procedure.

4.3.3 **ENSURE** all personnel to be involved with performance of this procedure have completed Attachment 3, OTP-320-003 SIGNATURE LOG.

TEST DIRECTOR INITIALS/DATE: JSA 5/20/98

4.3.4 **REVIEW** LOCK & TAG LOGBOOK to verify all components are available for the test.

TEST DIRECTOR INITIALS/DATE: JSA 5/20/98

4.3.5 **ENSURE** installed instrumentation requiring calibration is within current calibration cycle with calibration stickers affixed per ATTACHMENT 6, OTP-320-003 CALIBRATION DATA SHEET.

TEST DIRECTOR INITIALS/DATE: JSA 5/20/98

4.3.6 **PERFORM** a walkdown inspection of the work area for unusual and/or hazardous conditions.

TEST DIRECTOR INITIALS/DATE: JSA 5/20/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	17 of 73

## 4.3 CONDITIONS AND ACTIONS (Cont.)

4.3.7 ENSURE the following coverblocks are in place:

- Pit 241-C-06C.
- Pit 241-AY-02E.

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.8 ENSURE the following jumpers are installed:

- Sluice Pit 241-AY-02E jumper between Sluice Booster Pump P-0622 and nozzle U2.
- Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to Sluicer S-1361.

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.9 ENSURE Tank 241-C-106 Ventilation System is in operation per TO-060-050, "296-P16 HVAC."

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.10 ENSURE C-106 In-Tank Imaging System is in operation per TO-320-011, "Operate C-106 In Tank Imaging System."

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.11 ENSURE electrical circuit breakers are aligned per Attachment 5, OTP-320-003 Electrical Lineup.

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.12 ENSURE Tank 241-AY-102 Primary Ventilation System is in operation per TO-060-350, "AY/AZ Tank Ventilation Primary Exhaust System", AND NO "OUTLET PRIMARY VENT FLOW (LO)" alarms are activated.

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

4.3.13 ENSURE the official Operational Test Procedure copy and all other photocopies to be used during testing are the latest approved revision.

TEST DIRECTOR INITIALS/DATE: Jsa 15/20/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	18 of 73

## 4.3 CONDITIONS AND ACTIONS (Cont.)

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.14 **ENSURE** C-Farm transfer leak detector LDE-1368 has been functionally tested in the previous 92 days per TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.15 **ENSURE** AY-Farm transfer leak detector LDE-102-32 has been functionally tested in the previous 92 days per TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.16 **ENSURE** encasement leak detector LDE-1364 has been functionally tested in the previous 192 days per 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

4.3.17 **ENSURE** temporary cameras have been installed in the following locations per the Job Control System, **AND** the work package provides operating instructions:

- Tank 241-AY-102
- Sluice Pit 241-AY-02E CAMERA PORT #1
- Sluice Pit 241-C-06C CAMERA PORT

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

4.3.18 **ESTABLISH** communication between control room and equipment locations.

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

4.3.19 **OBTAIN** release from Operations management prior to continuing this test.

TEST DIRECTOR INITIALS/DATE: Jza / 5/20/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	19 of 73

## 5.0 PROCEDURE

- NOTE - "RECORD" in a step indicates that data and/or initials are to be entered on Attachment 4, OTP-320-003 Data Sheet when conditions in the step are met.
- The acceptable range for required information is listed on Attachment 4, OTP-320-003 Data Sheet.
  - Annunciators may be acknowledged/reset as required throughout this procedure. Alarm status should be taken after resetting the annunciator panel.
  - Alarms/Faceplates will not reset/change until RESET button is pushed.

### 5.1 WINCH ASSEMBLY W-0621

#### CAUTION

During testing of the winch system, immersible pump P-0621 must not contact the waste surface.

#### CAUTION

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

#### Preparation/Initial Checks

- 5.1.1 **ENSURE** Administrative Locks are on the following breaker and disconnect **AND**,

#### **RECORD:**

- 5.1.1.1 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.1.1.2 VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC), disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	20 of 73

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

5.1.2 **REMOVE** Administrative Lock from ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621 **AND**,

**POSITION** breaker to ON.

**THEN RECORD.**

5.1.3 **IF OFF, PRESS** to test the following indicator lights **RELEASE** test button **AND**,

**RECORD** the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 1.

**TABLE 1 - SLURRY SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

5.1.4 **RECORD** Alarm Conditions at annunciator ANN-0621 (located on IE-0621) per Table 2.

**TABLE 2 - SLURRY SBM PUMP POSITION ANN-1361 ALARM STATUS**

WINDOW #	WINDOW TEXT	STATUS
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
8-2	SBM SLUICE PUMP P-0621 PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621)	OFF

5.1.5 **RECORD** SBM SLUICE PUMP POSITION indicator ZI-0621 (ZSL/ZSH-0621A) reading (located on IE-0621).

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

HNF-3057, Rev.0

Page A1-22

NOTE - Immersible pump Upper (ZSH-0621A) and Lower (ZSL-0621A) position switches can be adjusted at SBM SLUICE PUMP POSITION indicator ZI-0621.

5.1.6 SET Upper position switch ZSH-0621A to 5 inches.

5.1.7 RECORD the following:

5.1.7.1 ZSH-0621A SET to 5 inches.

5.1.7.2 WINCH UPPER LIMIT light ZLH-0621 ON.

5.1.8 SET Lower position switch ZSL-0621A to 25 inches.

5.1.9 RECORD the following:

5.1.9.1 ZSL-0621A SET to 25 inches.

5.1.9.2 WINCH LOWER LIMIT light ZLL-0621 OFF.

5.1.10 IF OFF, PRESS to test the following lights:

- RAISE light YL-0626A.
- STOP light YL-0626B.
- LOWER light YL-0626C.

THEN RECORD.

**Verify Winch W-0621 Operation**

5.1.11 MONITOR Winch movement with temporary in-tank camera while performing steps 5.1.12 through 5.1.22.

5.1.12 POSITION AND HOLD Winch RAISE/STOP/LOWER switch HS-0626 to LOWER.

5.1.13 RECORD the following:

5.1.13.1 HS-0626 position.

5.1.13.2 LOWER light YL-0626C ON.

5.1.13.3 STOP light YL-0626B OFF.

5.1.14 MONITOR ZI-0621,  
WHEN ZI-0621 indicates approximately 15 inches,  
THEN RELEASE HS-0626.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	22 of 73

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

HNF-3057, Rev.0

Page A1-23

- 5.1.15 **RECORD** the following:
- 5.1.15.1 HS-0626 position.
  - 5.1.15.2 LOWER light YL-0626C OFF.
  - 5.1.15.3 STOP light YL-0626B ON.
  - 5.1.15.4 WINCH UPPER LIMIT light ZLH-0621 OFF.
  - 5.1.15.5 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) OFF.
- 5.1.16 **POSITION AND HOLD** switch HS-0626 to LOWER.
- 5.1.17 **RECORD** the following:
- 5.1.17.1 HS-0626 position.
  - 5.1.17.2 LOWER light YL-0626C ON.
  - 5.1.17.3 STOP light YL-0626B OFF.
- 5.1.18 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 30 inches, **RELEASE** HS-0626.
- 5.1.19 **RECORD** the following:
- 5.1.19.1 HS-0626 position.
  - 5.1.19.2 LOWER light YL-0626C OFF.
  - 5.1.19.3 STOP light YL-0626B ON.
  - 5.1.19.4 WINCH LOWER LIMIT light ZLL-0621 ON.
  - 5.1.19.5 ~~ANN-0621 Window #8-2 SBM SLUICE PUMP P-0621 PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621) ON.~~
- 5.1.20 **POSITION AND HOLD** switch HS-0626 to RAISE.
- 5.1.21 **RECORD** the following:
- 5.1.21.1 HS-0626 position.
  - 5.1.21.2 RAISE light YL-0626A ON.
  - 5.1.21.3 STOP light YL-0626B OFF.

## 5.1 WINCH ASSEMBLY W-0621 (Cont.)

HNF-3057, Rev.0

Page A1-24

- 5.1.22 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 0 inches, **RELEASE**  
switch HS-0626 **AND**,

**RECORD** the following:

- 5.1.22.1 ZI-0621 indicated position.  
5.1.22.2 RAISE light YL-0626A OFF.  
5.1.22.3 STOP light YL-0626B ON.  
5.1.22.4 WINCH UPPER LIMIT light ZLH-0621 ON.  
5.1.22.5 WINCH LOWER LIMIT light ZLL-0621 OFF.  
5.1.22.6 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621  
PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) ON.  
5.1.22.7 ANN-0621 alarm Window # 8-2 SBM SLUICE PUMP P-0621  
PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621) OFF.  
5.1.22.8 Alarm Horn XA-0621 SOUNDING.

**NOTE** - At this point the in-tank video imaging system is not  
required and may be shut off at the Test Directors  
discretion.

- 5.1.23 **POSITION** ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
breaker WINCH STARTER (480 VAC) W-0621 to OFF **AND**,

**INSTALL** Administrative Lock.

- 5.1.24 **RECORD** breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
WINCH STARTER position.

- 5.1.25 **RECORD** the following:

- 5.1.25.1 Test Director Section 5.1 complete.  
5.1.25.2 Quality Control Inspector **VERIFY** Section 5.1  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	24 of 73

**5.2 IMMERSIBLE SLUICE PUMP P-0621**

**CAUTION**

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

**Preparation/Initial Checks**

5.2.1 **ENSURE** Administrative Locks are on the following breaker and disconnect **AND**,

**RECORD:**

5.2.1.1 ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.

5.2.1.2 VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.

5.2.2 **REMOVE** Administrative Lock from ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC) **AND**,

**POSITION** breaker to ON.

5.2.3 **IF OFF, PRESS** to test the following indicator lights **RELEASE** test button **AND**,

**RECORD** the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 3.

**TABLE 3 - SLUICE SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZUH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

## 5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)

5.2.4 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 reading (located on IE-0621).

5.2.5 RECORD ANN-0621 alarm status per Table 4.

TABLE 4 - SLUICE SBM PUMP ANN-0621 ALARM STATUS

WINDOW #	WINDOW TEXT	STATUS
1-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0621)	OFF
2-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0621)	OFF
5-1	SBM SLUICE PUMP P-0621 MOTOR CURRENT HIGH (IAH-0621)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	ON
6-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	26 of 73

**5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)**

5.2.6 **RECORD** the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51):

- 5.2.6.1 PISL-0621
- 5.2.6.2 TISH-0621
- 5.2.6.3 TISHH-0621
- 5.2.6.4 TISH-0622A
- 5.2.6.5 IISH-0621A

**Verify Pump Operation**

**NOTE -** Annunciator ANN-0621, Window 5-1, SBM SLUICE PUMP MOTOR CURRENT HIGH (IAH-0621) will alarm each time Immersible Sluice Pump P-0621 is started.

5.2.7 **ENSURE** LOCAL REMOTE switch HS-0635 selected to LOCAL (located on IMMERSIBLE PUMP P-0621 SOFT STARTER) **AND**,

**RECORD** HS-0635 position.

5.2.8 **IF OFF, PRESS** to check the following lights, **RELEASE** test button **AND**,

**CHECK** the light status:

- LOCAL light YL-0635A ON.
- REMOTE light YL-0635B OFF.
- MOTOR RUN light YL-0621A OFF.
- MOTOR STOP light YL-0621B ON.

**THEN RECORD.**

~~5.2.105.2.9~~ **CHECK** Annunciator ANN-0621, Window 7-1, SBM SLUICE PUMP P-0621 MOTOR CASE LEAK DETECTOR (LDA-0621) OFF

~~5.2.95.2.10~~ **ROTATE** and **RELEASE** START STOP switch HS-0621A to START.

5.2.11 **RECORD** the following:

- 5.2.11.1 HS-0621A ROTATED to START.
- 5.2.11.2 MOTOR RUN light YL-0621A ON.
- 5.2.11.3 MOTOR STOP light YL-0621B OFF.

**5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)**

- 5.2.12 **OBSERVE** IISH-0621A (located on IE-0621),  
**WHEN** current reading has stabilized,  
**RECORD** pump current.
- 5.2.13 **ROTATE** and **RELEASE** START STOP switch HS-0621A to STOP.
- 5.2.14 **RECORD** the following:
- 5.2.14.1 HS-0621A ROTATED to STOP.
- 5.2.14.2 MOTOR RUN light YL-0621A OFF.
- 5.2.14.3 MOTOR STOP light YL-0621B ON.
- 5.2.15 **POSITION** breaker ELECTRICAL EQUIPMENT SKID GROUP  
CONTROLLER, IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC)  
to OFF **AND**,  
**INSTALL** Administrative Lock.
- 5.2.16 **RECORD** breaker ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER,  
IMMERSIBLE PUMP P-0621 position.
- 5.2.17 **RECORD** the following:
- 5.2.17.1 Test Director Section 5.2 complete.
- 5.2.17.2 Quality Control Inspector **VERIFY** Section 5.2  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	28 of 73

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM**Preparation/Initial Checks

- 5.3.1 **ENSURE** valve HV-06221 OPEN (located on Nitrogen Gas Control Panel).
- 5.3.2 **CHECK** Nitrogen Gas Bottles are in place and connected to the manifold at the Nitrogen Gas Bottle Station.
- 5.3.3 **ENSURE** all Nitrogen bottle valves are CLOSED.
- 5.3.4 **RECORD** ANN-0621 Window 4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) ON.

Slurry Booster Pump P-0622 Seal Gas Purge

- 5.3.5 **CHECK** nitrogen manifold valves are closed,
- 5.3.6 **SLOWLY OPEN** nitrogen bottle valve on right side nitrogen bottle.
- 5.3.7 **OPEN** nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.8 **ENSURE** PCV-06221 set at 325 (320 to 330) psig as indicated by the integral output pressure gauge (left gauge) **AND**,

**RECORD:**

- 5.3.8.1 PCV-06221 integral output pressure (left gauge).
  - 5.3.8.2 PCV-06221 inlet pressure (right gauge).
  - 5.3.8.3 PI-06220 right hand bottle pressure.
- \* 5.3.9 **OPEN** nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.10 **CLOSE** nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.11 **RECORD** the following:
- 5.3.11.1 PCV-06221 integral output pressure (left gauge).
  - 5.3.11.2 PCV-06221 inlet pressure (right gauge).
  - 5.3.11.3 PI-06221 middle bottle pressure.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	29 of 73

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM (Cont.)**

- 5.3.12 **OPEN** nitrogen bottle header manifold isolation valve for left side nitrogen bottle.
- 5.3.13 **CLOSE** nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.14 **RECORD** the following:
- 5.3.14.1 PCV-06221 integral output pressure (left gauge).
- 5.3.14.2 PCV-06221 inlet pressure (right gauge).
- 5.3.14.3 PI-06222 left bottle pressure.
- 171 5.3.15 **ENSURE** PCV-06222 set to 165 (165 to 175) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** the following:
- 5.3.15.1 PI-06223 Pressure.
- \* 5.3.15.2 FI-0622 ~~FI-06221~~ indicates less than 10%.
- 5.3.15.3 ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) OFF.
- 5.3.16 **ENSURE** PCV-06222 set to 50 (50 to 55) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** set pressure.
- 5.3.17 **CHECK** the FI-0622 ~~FI-06221~~ indicates less than 10% **AND**,
- RECORD** indicated % flow.
- 5.3.18 **RESET** Annunciator ANN-0621.
- 5.3.19 **RECORD** ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) ON.
- 5.3.20 **RECORD** the following:
- 5.3.20.1 Test Director Section 5.3 complete.
- 5.3.20.2 Quality Control Inspector **VERIFY** Section 5.3 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	30 of 73

## 5.4 SLUICE BOOSTER PUMP P-0622

HNF-3057, Rev.0

Page A1-31

**CAUTION**

Booster Pump P-0622 must not be started without Nitrogen Purge System Operating (see section 5.3). In addition, continuous operating time should be kept to a minimum (<30 minutes) and speed should be kept over 1500 RPM.

Preparation/Initial Checks

- 5.4.1 **ENSURE** Sluice Booster Pump Nitrogen Purge System is in operation per Section 5.3.
- 5.4.2 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51) **AND**,
- INSTALL** Lock and Tag:
- CK 10 OPER STATION RCPT, OFF
  - CK 12 OPER STATION IE-0621, OFF
- 5.4.3 Responsible Craft **PERFORM AND RECORD** the following to bypass Immersible Sluice Pump P-0621 discharge pressure interlock PISL-0621 (located in IE-0621 on back of (PISL-0621):
- 5.4.3.1 **DISCONNECT** PISL-0621 per FIGURE 1:
- 5.4.3.2 **CONNECT** pressure simulator per FIGURE 1.
- 5.4.4 **REMOVE** Lock and Tag **AND**,
- POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
- CK 10 OPER STATION RCPT, ON
  - CK 12 OPER STATION IE-0621, ON
- 5.4.5 **ADJUST** pressure simulator until PISL-0621 indicates a minimum of 50 psig **AND**,
- RECORD.**

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	31 of 73

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

HNF-3057, Rev.0

Page A1-32

**WARNING**

Removing shield plug may cause changes in tank pressure and activate tank pressurization alarms.

- 5.4.6 **NOTIFY** 702-AZ operator **AND** Computer Automated Surveillance System operator of potential alarm activation prior to the removal of tape or plug from 241-AY-02E winch vent.

jea 5/22/98  
 Test Director Initial Date

- NOTE - Winch vent is currently covered with tape for AY-102 ventilation in-leakage control.

- 5.4.7 **ENSURE** Sluice Pit 241-AY-02E winch vent is clear (free of plug, or tape).

- 5.4.8 **ENSURE** Administrative Locks are on the following breakers **AND**,

**RECORD:**

- 5.4.8.1 ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.
- 5.4.8.2 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.4.9 **REMOVE** Administrative Lock from VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH **AND**,

**POSITION** disconnect to ON.

**THEN RECORD.**

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	32 of 73

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

5.4.10 **IF OFF, PRESS** to test the following indicator lights, **RELEASE** test button **AND**,

**RECORD** the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 5.

**TABLE 5 - SLUICE SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATIONS LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATIONS LIQUID LEVEL HIGH	OFF

5.4.11 **RECORD** SBM SLUICE PUMP POSITION indicator ZI-0621 reading (located on IE-0621).

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

5.4.12 RECORD ANN-0621 alarm status per Table 6.

TABLE 6 - PUMP ANN-0621 ALARM STATUS

WINDOW #	WINDOW TEXT	STATUS
1-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0629)	OFF
2-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0629)	OFF
3-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #2 TEMP HIGH (TAH-06210B)	OFF
4-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #1 TEMP HIGH (TAH-06210A)	OFF
4-3	TANK 241-AY-102 BSTR PUMP SEAL GAS TROUBLE (XA-06221)	ON
5-2	SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-2	SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622)	ON
6-4	SBM PMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
7-2	SLUICE BOOSTER PUMP P-0622 VSD TROUBLE (XA-0622)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	OFF

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	34 of 73

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

- 5.4.13 **RECORD** the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51 and VARIABLE SPEED DRIVE P-0622 CONTROL PANEL C):
- 5.4.13.1 PISL-0622
  - 5.4.13.2 TI-06210A
  - 5.4.13.3 TI-06210B
  - 5.4.13.4 TI-0629
  - 5.4.13.5 II-0622
  - 5.4.13.6 EI-0621
- 5.4.14 **PRESS** FAULT RESET HS-0625.
- 5.4.15 **CHECK** that the keypad display on Control Panel A indicates "No Errors", **THEN** displays "RDY". ~~It~~
- 5.4.16 **ENSURE** COAST/STOP button HS-0624C RETRACTED.
- 5.4.17 **IF** OFF, **PRESS** to check the following lights, **RELEASE** test button **AND**,
- CHECK** the following:
- POWER ON light YL-0622 ON.
  - FAULT light YL-0625 OFF.
  - PUMP RUNNING light YL-0624A OFF
  - PUMP STOPPED light YL-0624B ON.
- THEN RECORD.**

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)****Pump Operation STOP Switch Shutdown**

NOTE - Annunciator ANN-0621, Window 5-2, SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622) will alarm each time Sluice Booster Pump P-0622 is started.

5.4.18 SET speed controller SC-0621 to 0% AND,  
RECORD.

5.4.19 ENSURE personnel are clear of Pit 241-AY-02E.

5.4.20 PRESS START switch HS-0624A.

5.4.21 RECORD the following:

5.4.21.1 HS-0624A PRESSED to START.

5.4.21.2 PUMP RUNNING light YL-0624A ON.

5.4.21.3 PUMP STOPPED light YL-0624B OFF.

5.4.22 RECORD readings from the following indicators.

5.4.22.1 IISH-0622.

5.4.22.2 II-0622.

5.4.22.3 EI-0621.

5.4.22.4 SI-0621.

5.4.23 ADJUST speed controller SC-0621 to 100%.

5.4.24 RECORD the following:

5.4.24.1 SC-0621 setting.

5.4.24.2 IISH-0622.

5.4.24.3 II-0622.

5.4.24.4 EI-0621.

5.4.24.5 SI-0621.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	36 of 73

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

NOTE - The Booster Pump will ramp down and then stop when the STOP switch is pushed.

5.4.25 **PRESS** STOP switch HS-0624B.

5.4.26 **RECORD** the following:

5.4.26.1 HS-0624B PRESSED to STOP.

5.4.26.2 PUMP RUNNING light YL-0624A OFF.

5.4.26.3 PUMP STOPPED light YL-0624B ON.

**Pump Operation COAST/STOP Button Shutdown**

5.4.27 **ENSURE** personnel are clear of Pit 241-AY-02E.

5.4.28 **PRESS** FAULT RESET HS-0625.

5.4.29 **PRESS** START switch HS-0624A.

5.4.30 **RECORD** the following:

5.4.30.1 HS-0624A PRESSED to START.

5.4.30.2 PUMP RUNNING light YL-0624A ON.

5.4.30.3 PUMP STOPPED light YL-0624B OFF.

5.4.31 **PRESS** COAST/STOP button HS-0624C to FULLY INSERTED.

5.4.32 **RECORD** the following:

5.4.32.1 HS-0624C position.

5.4.32.2 PUMP RUNNING light YL-0624A OFF.

5.4.32.3 PUMP STOPPED light YL-0624B ON.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	37 of 73

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

HNF-3057, Rev.0

Page A1-38

Verify Pump Low Suction Pressure Interlock

- 5.4.33 **POSITION** COAST/STOP button HS-0624C to FULLY RETRACTED  
**AND,**  
**RECORD.**
- 5.4.34 **ENSURE** personnel are clear of Pit 241-AY-02E.
- 5.4.35 **PRESS** FAULT RESET HS-0625.
- 5.4.36 **PRESS** START switch HS-0624A.
- 5.4.37 **RECORD** the following:
- 5.4.37.1 HS-0624A PRESSED to START.
  - 5.4.37.2 PUMP RUNNING light YL-0624A ON.
  - 5.4.37.3 PUMP STOPPED light YL-0624B OFF.
- 5.4.38 **SLOWLY DECREASE** pressure simulator setting.  
**UNTIL** PUMP RUNNING light YL-0624A indicates OFF.
- 5.4.39 **RECORD** the following:
- 5.4.39.1 PISL-0621 pressure.
  - 5.4.39.2 PUMP RUNNING light YL-0624A OFF.
  - 5.4.39.3 PUMP STOPPED light YL-0624B ON.
  - 5.4.39.4 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621), ON.
- 5.4.40 **POSITION** VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH to OFF **AND,**  
  
**INSTALL** Administrative Lock.
- 5.4.41 **RECORD** VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH position.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	38 of 73

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

- 5.4.42 Responsible Craft **PERFORM** the following to P-0622 suction pressure interlock:
- 5.4.42.1 **ENSURE** the following breakers OFF, and Locked and Tagged.
- CK 10 OPER STATION RCPT, OFF
  - CK 12 OPER STATION IE-0621, OFF
- 5.4.42.2 **DISCONNECT** pressure simulator per FIGURE 1 **AND**,  
**RECORD.**
- 5.4.42.3 **CONNECT** PISL-0621 leads per FIGURE 1 **AND**,  
**RECORD.**
- 5.4.42.4 **REMOVE** the Lock and Tag from the following breakers **AND POSITION** as follows:
- CK 10 OPER STATION RCPT, ON
  - CK 12 OPER STATION IE-0621, ON
- 5.4.43 **RECORD** the following:
- 5.4.43.1 Test Director Section 5.4 complete.
- 5.4.43.2 Quality Control Inspector **VERIFY** Section 5.4 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	39 of 73

## 5.5 SLUICER S-1361

Preparation/Initial Checks

- 5.5.1 **CHECK** fluid level in hydraulic reservoir (located at SHC-1361).
- 5.5.2 **IF** reservoir is less than 1/2 full, **REQUEST** Responsible Craft **FILL** reservoir to 1/2 full.
- 5.5.3 **ENSURE** breaker MCC-N1 1FB SLUICER HYDRAULIC POWER UNIT ON (located in 241-C-51).
- 5.5.4 **RECORD** the following (located at CB-01 in M0211):
- 5.5.4.1 Sluicer Pump OFF light YL-13613B ON.
  - \* 5.5.4.2 Sluicer Pump ON light YL-13613A OFF.
  - \* 5.5.4.3 Sluicer TILT OFF light YL-13615B ON.
  - \* 5.5.4.4 Sluicer TILT ON light YL-13615A OFF.
- 5.5.5 **POSITION** SLUICER PAN AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.6 **RECORD** the following:
- 5.5.6.1 HS-13614 position
  - \* 5.5.6.2 MAN light YL-13614B ON
  - \* 5.5.6.3 AUTO light YL-13614A OFF.
- 5.5.7 **REQUEST** Surveillance Operator **ALIGN** the 241-C-106 in-tank video imaging system per TO-320-011, "Operate C-106 In-Tank Imaging system" to view the sluicer **AND BEGIN RECORDING.**

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	40 of 73

## 5.5 SLUICER S-1361 (Cont.)

Sluicer Operation - Manual Pan Control

NOTE - Each movement of the sluicer nozzle should be checked with the in-tank video imaging system.

5.5.8 **POSITION** SLUICER SYSTEM ON/OFF switch HS-13613 to ON.

5.5.9 **RECORD** the following:

5.5.9.1 HS-13613 position

5.5.9.2 Sluicer Pump ON light YL-13613A ON

5.5.9.3 Sluicer Pump OFF light YL-13613B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.10 **BUMP** joystick ZC-1361 to right and left **AND**,

**RECORD** sluicer nozzle responded accordingly via in-tank video imaging system.

5.5.11 **POSITION** joystick ZC-1361 to the right **AND**,

**RECORD** reading on position indicator ZI-13614 **INCREASES**.

5.5.12 **RELEASE** joystick ZC-1361 **AND**,

**RECORD** ZI-13614 maintains reading.

5.5.13 **POSITION** joystick ZC-1361 to the left **AND**,

**RECORD** reading on position indicator ZI-13614 **DECREASES**.

5.5.14 **RELEASE** joystick ZC-1361 **AND**,

**RECORD** ZI-13614 maintains reading.

## 5.5 SLUICER S-1361 (Cont.)

### Sluicer Operation - Tilt Control

5.5.15 **POSITION** SLUICER TILT CONTROL ON/OFF switch HS-1364 to ON.

5.5.16 **RECORD** the following:

5.5.16.1 HS-1364 position

5.5.16.2 TILT ON light YL-13615A ON

5.5.16.3 TILT OFF light YL-13615B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.17 **BUMP** joystick ZC-1361 up and down **AND**,

**RECORD** sluicer nozzle responded accordingly via in-tank video imaging system.

✓ 5.5.18 **POSITION** Joystick ZC-1361 down (pushed forward) until ZI-13613 indicates -40 ° **AND**,

**RECORD** ZI-13613 reading.

\* 5.5.19 **RELEASE** joystick ZC-1361 **AND**,

**RECORD** ZI-13613 maintains reading.

5.5.20 **POSITION** Joystick ZC-1361 upward (pulled back) until ZI-13613 indicates 90 ° **AND**,

**RECORD** ZI-13613 reading.

5.5.21 **RELEASE** joystick ZC-1361 **AND**,

**RECORD** ZI-13613 maintains reading.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	42 of 73

## 5.5 SLUICER S-1361 (Cont.)

HNF-3057, Rev.0

Page A1-43

Sluicer Operation - Automatic Pan Control

- NOTE - Sluicer pan left and right limit switches ZS-13614L and ZS-13614R) can be manually adjusted at SLUICER PAN POSITION indicator ZI-13614.
- 5.5.22 SET sluicer pan left limit switch ZS-13614L to - 90° **AND**,  
**RECORD**.
- 5.5.23 SET sluicer pan right limit switch ZS-13614R to 90° **AND**,  
**RECORD**.
- 5.5.24 **POSITION** SLUICER PAN AUTO/MANUAL switch HS-13614 to AUTO.
- 5.5.25 **RECORD** the following:
- 5.5.25.1 HS-13614 position
- 5.5.25.2 MAN light YL-13614B OFF.
- 5.5.25.3 AUTO light YL-13614A ON.
- 5.5.26 **MONITOR** ZI-13614 **AND**,  
**RECORD** ZI-13614 indicates a continuous sweep from -90° to 90°.
- 5.5.27 **CHECK** via in-tank video imaging system that the sluicer is rotating.
- 5.5.28 **POSITION** SLUICER AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.29 **RECORD** the following:
- 5.5.29.1 HS-13614 position
- 5.5.29.2 MAN light YL-13614B ON.
- 5.5.29.3 AUTO light YL-13614A OFF.
- 5.5.30 **CHECK** via in-tank video imaging system that the sluicer has stopped rotating.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	43 of 73

## 5.5 SLUICER S-1361 (Cont.)

NOTE - At this point the in-tank video imaging system is not required and may be shut off at the Test Directors discretion.

5.5.31 POSITION SLUICER TILT CONTROL ON/OFF switch HS-1364 to OFF.

5.5.32 CHECK the following:

- TILT ON light YL-13615A OFF.
- TILT OFF light YL-13615B ON.

THEN RECORD.

5.5.33 POSITION SLUICER HYDRAULIC SYSTEM ON/OFF switch HS-13613 to OFF.

5.5.34 CHECK the following:

- Sluicer Pump ON light YL-13613A OFF.
- Sluicer Pump OFF light YL-13613B ON.

THEN RECORD.

5.5.35 OPEN breaker MCC-NI A1A SLUICER HYDRAULIC UNIT POWER.

5.5.36 RECORD the following:

5.5.36.1 Test Director Section 5.5 complete.

5.5.36.2 Quality Control Inspector VERIFY Section 5.5 complete.



Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-1	5/20/98	44 of 73

**5.6 SLUICE PIT 241-AY-02E CHILLER**

HNF-3057, Rev.0

Page A1-45

Preparation/Initial Checks

- 5.6.1 ENSURE PIT-02E COOLER FEEDER BRKR (480 VAC), OFF.
- 5.6.2 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.

**WARNING**

A Zero Energy Check is required when opening R-0621 MAIN ELECTRICAL CONTROL BOX.

- 5.6.3 ENSURE the following equipment circuit breakers in AUTO (located at Pit Chiller R-0621 MAIN ELECTRICAL CONTROL BOX) .
- Comp
  - Fan L
  - Fan H
  - S.P.
  - By-P
- 5.6.4 ENSURE the following Chiller control panel switches are in OFF (NOT ILLUMINATED) (located on chiller control panel):
- COMPRESSOR ON
  - SYSTEM PUMP ON
  - BY-PASS PUMP ON
- 5.6.5 CHECK Pit Chiller chilled water storage tank level is approximately 2 inches from top of tank (sight glass located on side of tank) as follows:
- 5.6.5.1 ENSURE the following valves OPEN:
- UPPER sight glass isolation valve
  - LOWER sight glass isolation valve
- 5.6.5.2 CHECK sight glass level (LG-0621)

**5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)**

- 5.6.5.3 IF chilled water storage tank level is greater than 2 inches from top of tank, **ADD** 46% glycol solution (freeze protection to - 20 ° F) to tank as follows:
- A. **ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
  - B. **SLOWLY REMOVE** fill cap and air eliminator
  - C. **ADD** glycol solution UNTIL sightglass indicates approximately 2 inches from top of tank.
  - D. **INSTALL** fill cap and air eliminator.
- 5.6.5.4 IF chilled water storage tank level is less than 1 inch from top of tank, **REMOVE** glycol solution from tank as follows:
- A. **ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
  - B. **SLOWLY REMOVE** fill cap and air eliminator
  - C. **OBTAIN** a small portable pump **AND PUMP** glycol solution into a suitable sized container UNTIL sightglass indicates approximately 2 inches from top of tank.
  - D. **INSTALL** fill cap and air eliminator.
- 5.6.6 **ENSURE** the following valves CLOSED:
- HV-0622
  - HV-0623
- 5.6.7 **ENSURE** "supply valve" from chiller storage tank to system and Bypass pump OPEN.
- 5.6.8 **ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), ON.
- 5.6.9 **RECORD** reading from temperature controller TIC-06213.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	46 of 73

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

HNF-3057, Rev.0

Page A1-47

**CAUTION**

To prevent equipment damage the power to this cooler must be on for 4 hours before the cooler is started.

**Chiller Operation**

- 5.6.10 **POSITION** FSC-1 to 1200 FT<sup>3</sup>/MIN.
  - 5.6.11 **POSITION** BY-PASS PUMP ON switch to ON.
  - 5.6.12 **CHECK** BY-PASS PUMP ON light switch ILLUMINATED.
  - 5.6.13 **POSITION** COMPRESSOR ON switch to ON.
  - 5.6.14 **CHECK** COMPRESSOR ON light switch ILLUMINATED.
  - 5.6.15 **MONITOR** TI-0621A (temperature of water out of chiller).  
**WHEN** it reads approximately 60°F **PERFORM** the following:
    - 5.6.15.1 **RECORD** the following:
      - A. Reading from temperature controller TIC-06213 and TIME and DATE
      - B. TI-0621A (temperature of water out of chiller, located at WATER CHILLER UNIT R-0621).
      - C. TI-0621B (temperature of water into chiller, located at WATER CHILLER UNIT R-0621).
      - D. Annunciator ANN-0621, Window 7-3, SLUICE PIT 02E PIT TEMP HIGH (TAH-06213) status
    - 5.6.15.2 **OPEN** valve HV-0623
    - 5.6.15.3 **OPEN** valve HV-0622
    - 5.6.15.4 **POSITION** SYSTEM PUMP ON switch to ON.
    - 5.6.15.5 **CHECK** SYSTEM PUMP ON light switch ILLUMINATED.
- NOTE - The length of time it will take to observe a decrease in the pit 241-AY-02E temperature will vary significantly depending on the ambient air temperature and initial pit temperature.
- 5.6.16 **MONITOR** pit temperature decreases as indicated on TIC-06213.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	47 of 73

**5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)**

- 5.6.17 **WHEN** TIC-06213 indicates approximately 2 °F less than the value recorded in step 5.6.15.1.A, **RECORD** the following:
- 5.6.17.1 Reading from temperature controller TIC-06213 and TIME and DATE
  - 5.6.17.2 TI-0621A (temperature of water out of chiller, located at WATER CHILLER UNIT R-0621)
  - 5.6.17.3 TI-0621B (temperature of water into chiller, located at WATER CHILLER UNIT R-0621)
  - 5.6.17.4 Annunciator ANN-0621, Window 7-3, SLUICE PIT 02E PIT TEMP HIGH (TAH-06213) status
- 5.6.18 **SHUT DOWN** the pit chiller as follows:
- 5.6.18.1 **POSITION** SYSTEM PUMP ON switch to OFF.
  - 5.6.18.2 **VERIFY** SYSTEM PUMP ON switch light OFF.
  - 5.6.18.3 **CLOSE** valve HV-0622.
  - 5.6.18.4 **CLOSE** valve HV-0623.
  - 5.6.18.5 **POSITION** COMPRESSOR ON switch to OFF.
  - 5.6.18.6 **VERIFY** COMPRESSOR ON switch light OFF.
  - 5.6.18.7 **POSITION** BY-PASS PUMP ON switch to OFF.
  - 5.6.18.8 **VERIFY** BY-PASS PUMP ON switch light OFF.
  - 5.6.18.9 **POSITION** PIT-02E COOLER DISCONNECT (480 VAC) to OFF.
  - 5.6.18.10 **POSITION** ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, PIT 02E CHILLER FEEDER BRKR to OFF.
- 5.6.19 **RECORD** the following:
- 5.6.19.1 Test Director Section 5.6 complete.
  - 5.6.19.2 Quality Control Inspector **VERIFY** Section 5.6 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	48 of 73

## 5.7 VERIFY VALVE HV-0625 OPERATION

- 5.7.1 **REQUEST** Surveillance Operator **ALIGN** the following cameras for viewing water addition activities:
- Tank 241-C-106 in-tank video imaging system per TO-320-011, "Operate C-106 In-Tank Imaging System".
  - Temporary camera in Sluice Pit 241-AY-02E CAMERA PORT #1 per Job Control System Work Package.
  - Tank 241-AY-102 temporary in-tank video imaging system per Job Control System Work Package.
  - Temporary camera in Sluice Pit 241-C-06C CAMERA PORT per Job Control System Work Package.
- 5.7.2 **ENSURE** HV-13611 (Supernate Line SN-200-M9 Encasement Drain, located in Sluice Pit 241-C-06C) positioned to OPER.
- 5.7.3 **MONITOR** the following while performing step 5.7.4 below **AND RECORD**:
- 5.7.3.1 Sluice Pit 241-AY-02E for leakage from flush jumper and transfer line nozzles U2 and A.
- 5.7.3.2 Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to sluicer.
- 5.7.3.3 Flow through Sluicer S-1361 into TANK 241-C-106 with HV-0625 CLOSED.
- 5.7.3.4 Indication of flow into TANK 241-AY-102 through Immersible Pump P-0621 suction (and possibly anti-syphon holes) with HV-0625 OPEN.
- NOTE - The following readings are located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51.
- The indicators must be checked when flow is routed to TK-241-AY-102.
- 5.7.3.5 PISL-0621
- 5.7.3.6 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRES LOW (PAL-0621) status.
- 5.7.3.7 PISL-0622

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	49 of 73

**5.7 VERIFY VALVE HV-0625 OPERATION (Cont.)**

- 5.7.3.8 Annunciator ANN-0621, Window 6-2, SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622) status.
- 5.7.3.9 FQI-0621
- 5.7.3.10 FI-0621
- 5.7.3.11 ZLH-0625 ON when HV-0625 OPEN (ZLL-0625 OFF).
- 5.7.3.12 ZLL-0625 ON when HV-0625 CLOSED (ZLH-0625 OFF).
- 5.7.4 **FLUSH** Supernate Line SL-200,  
**AND CYCLE** valve HV-0625 per TO-320-014 "WRSS Transfer Line Flushing.
- 5.7.5 **RECORD** the following:
  - 5.7.5.1 Test Director Section 5.7 complete.
  - 5.7.5.2 Quality Control Inspector **VERIFY** Section 5.7 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	50 of 73

## 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS

5.8.1 **PERFORM AND RECORD** the following:

- 5.8.1.1 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
  - A. CK 10 OPER STATION RCPT, OFF
  - B. CK 12 OPER STATION IE-0621, OFF
- 5.8.1.2 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621, OFF, **AND** Administrative Lock installed.
- 5.8.1.3 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC), OFF, **AND** Administrative Lock installed.
- 5.8.1.4 **ENSURE** VARIABLE SPEED DRIVE P-0622, PANEL B, INLINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH, OFF, **AND** Administrative Lock installed.
- 5.8.1.5 **CLOSE** nitrogen bottle valve opened in Section 5.3 step 5.3.5.
- 5.8.1.6 **INSTALL** Sluice Pit 241-AY-02E winch vent plug per Shift Managers instruction.
- 5.8.1.7 Test Director Section 5.8 complete.
- 5.8.1.8 Quality Control Inspector **VERIFY** Section 5.8 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	51 of 73

5.9 TEST CLOSURE

(QC)

5.9.1 QUALITY CONTROL: REVIEW all Attachments for completeness, legibility, and accuracy.

QUALITY CONTROL SIGNATURE/DATE: W.A. Adams 17/17/98

5.9.2 Listed reviewers SIGN below indicating all acceptance criteria has been met and that the installed WRSS Slurry Transfer System is functional and ready for operational use.

TEST DIRECTOR:	<i>J. E. Anderson</i>	DATE:	7/17/98
COG ENGINEER:	<i>Randy L. Parns</i> *	DATE:	07/17/98
DST SHIFT MANAGER:	0 N/A	DATE:	

\* CONCURRENCE WITH J.R. BELLAMY per telecon. *rdp*

ⓐ Test Director is qualified DST Shift Manager

OTP-320-003		Page: <u>1</u> of <u>7</u>
TIME/DATE	DESCRIPTION	
1600/5/20/98	Conducted Pre-job for section 5.7.	
1900/5/20/98	Received 102-AV Low Pressure alarm in the farm. In 241-AV-51 on ANN-0621 the excessive vacuum Alarm # 1-4 came in. It appears the Loss of Vacuum alarm # 2-4 and the excessive vacuum alarm are wired incorrectly.	
1915/5/20/98	Had to evacuate farm due to loss of flow indication at 702-AZ.	
1940/5/20/98	Access restored to A-Complex, proceeding with jumper install.	
2020/5/20/98	Completed 250 gal flush to 102-AV. No leaks observed from Nozzle A or flush jumper. A test exception (#1) was noted for FI-0621 and FQI-0621 during test. It appears the indications are wired backwards, at zero flow it's showing 100% flow. HV-0625 was placed in the open position.	
2030/5/20/98	HV-0625 was closed. started flush to 106-C	
2055/5/20/98	Completed 2500 gal Flush to 106-C. No leaks were noted in the OBE pit or the OBC pit. Flow was observed out of the sluicer.	
0915/5/21/98	Conducted pre-job for sections 5.5 & 5.6	
1020/5/21/98	Energized Chiller unit and performed	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	53 of 73

## ATTACHMENT 1 - OTP-320-003 TEST LOG

HNF-3057, Rev.0

Pg A1-53a

OTP-320-003		Page: <u>2</u> of <u>7</u>
TIME/DATE	DESCRIPTION	
continued	steps up to 5.6.9. Noted several discrepancies in labeling and the equipment location. They are:	
	Step 5.6.3 Pit Chiller R-0621 has no label identifying the unit.	
	Step 5.6.3 "Pit Chiller R-0621 Main Electrical Control Box" called out in the procedure, has no label identifying it as such.	
	Step 5.6.3 switches inside the control Box need permanent labels. They are currently magic marked on the switches.	
	Step 5.6.3 Fuses in panel are labeled with magic marker, they need permanent labels	
	Step 5.6.3 Grounding wires in Control Box are fed into one Lug. Electricians recommend a grounding bar be used. Also some of the grounding wires are fed in are not properly landed, insulation is being crimped.	
	Step 5.6.4 Chiller control panel need label stating "Chiller control panel".	
	Step 5.6.4 Chiller control panel does not have 3 feet of clearance per NEC.	
	Step 5.6.3 Main Electrical Control Box does not have 3 feet of clearance per NEC.	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-1	5/20/98	53 of 73

## ATTACHMENT 1 - OTP-320-003 TEST LOG

HNF-3057, Rev.0

Pg A1-53b

OTP-320-003		Page: 3 of 7
TIME/DATE	DESCRIPTION	
Continued	These above noted discrepancies are test exception # 2.	
1235/5/21/98	Started section 5.5 sluicer 5-1361. Test exception was noted on steps 5.5.4.3, 5.5.4.4, 5.5.6.2, 5.5.6.3. The lights could not be verified due to HS-13613 not being energized until step 5.5.8.1. This is test exception # 3.	
1245/5/21/98	During step 5.5.11, Position indicator ZI-13614 Did not respond when joystick was moved to the right. Cause determined to be due to indicator being in the wrong program mode, reprogrammed indicator and reformed steps 5.5.10 - 5.5.14. The sluicer in Manual Pan operated properly.	
1330/5/21/98	During step 5.5.18 the sluicer in tilt mode is required to be positioned to $-40^{\circ}$ . The sluicer could only be positioned to $-38.36^{\circ}$ . This is test exception # 4. It was also noted during the pan & tilt sections that the bar graph and digital indications on ZI-13613 and ZI-13614 did not track together correctly. Appears to be a calibration problem. This will be test exception # 5.	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	53 of 73

## ATTACHMENT 1 - OTP-320-003 TEST LOG

HNF-3057, Rev.0

pg A1-53c

OTP-320-003		Page: <u>4</u> of <u>7</u>
TIME/DATE	DESCRIPTION	
1400/5/21/98	Suspended test section 5.5 at step 5.5.35. Will perform troubleshooting to correct bar graph and digital indication problems and attempt to re-perform the manual Pan, tilt and automatic pan control sections	
1500/5/21/98	Recommenced section 5.6 after <sup>having</sup> chiller energized for 4 hours. Completed steps up to 5.6.15. The chill water out temperature did not go down as expected. Appears compressor and fan are not operating. Will suspend test and troubleshoot condition	
0900/5/22/98	Conducted pre-job for troubleshooting and re-performing sections 5.5 and 5.6.	
0930/5/22/98	Reprogrammed the indicators for the tilt and pan. Re-performed tilt, pan and auto sections. Test exception #5 is therefore recorded. Test exception #4 was still observed. In the tilt down mode only $-38^{\circ}$ was achieved.	
1645/5/26/98	Completed see job for sections 5.1 + 5.2	
2053 5/26/98	Z5-0621 INDICATES 45" VIDEO PICTURE INDICATES PUMP IS AT TOP OF TANK THIS WILL BE TEST EXCEPTION #6	
2116 5/26/98	LOWSEED LIMIT - RESET UPPER TRAVEL LIMIT	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	53 of 73

## ATTACHMENT 1 - OTP-320-003 TEST LOG

OTP-320-003		Page: <u>5</u> of <u>9</u>
TIME/DATE	DESCRIPTION	
2116 5/20/98	RAISED WINCH ZI-0621 DID NOT RESET TO ZERO WILL HAVE TO CALIBRATE ZI-0621 MODIFIED TEST EXCEPTION FOR TEST EXCEPTION #6 CLOSED OPENED WINCH STARTER (480 VAC) AND INSTALLED ADMIN LOCK	
2135	Completed Section 5.2 Pump P-0621 OPERATED AS REQUIRED TABLE 3 STATUS ZLI-0621 WAS OFF ZLI-0621 WAS ON DUE TO EXCEPTION 6 WINCH VERIFY TO BE AT TOP OF THE TANK ZI-0621 FROM 45"	
1300 5/20/98	Conducted pre-job for section 5.3 and 5.4	
1400 5/20/98	Started section 5.3, Nitrogen Purge System. Noted test exception on section 5.3.15.2. The regulator, PCU-06222, was set at 171 psig and the flow on FI-06221 indicated 15%. The requirement is < 10%. Test engineer confirms this is acceptable. This will be test exception # 7	
1400 5/20/98	Note: During initial setting of regulator PCU-06221, the procedure has you set pressure at 320-370 psig. The gauge is in 100 psig increments. Would recommended operating procedure give more of a realistic range for gauges i.e. 300 ± 50 psig.	
1530 5/20/98	Installed pressure simulator for section 5.4, secured N <sub>2</sub> system. Will restart N <sub>2</sub> system on 5/20/98	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	53 of 73

## ATTACHMENT 1 - OTP-320-003 TEST LOG

HNF-3057, Rev.0

Pg 41-53e

OTP-320-003		Page: 6 of 7
TIME/DATE	DESCRIPTION	
	cont. and complete section 5.4	
0800/5/28/98	Completed pre-job for section 5.4. Restarted N <sub>2</sub> system per section 5.3. Lab	
0830/5/28/98	Commenced section 5.4.	
0935/5/28/98	Noted exception with table 5 status and ZI-0621 Indication due to Winch Indicator (ZI-0621) reading 45". This was noted during testing on 5/26/98 and documented as test exception #6. Steps 5.4.10 & 5.4.11 will be added to test exception #6 due to indicating problem as <sup>signal</sup> cause for exception in section 5.1 and 5.4.	
0925/5/28/98	During testing noted the following exceptions: Steps 5.4.24.2 and 5.4.24.5, attachment 4 data sheet, requires the values to fall within expected ranges, step 5.4.24.2 requires booster pump amps to be between 36 - 38 amps. The actual value was 42 Amps. For step 5.4.24.5 the speed indication is required to be between 3000 to 3080 RPM. The actual value is 2942. These exceptions will be #8.	
0945/5/28/98	Completed section 5.4 testing.	
0925/5/28/98	(Late Entry) It was also noted during step 5.4.15,	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	53 of 73

ATTACHMENT 1 - OTP-320-003 TEST LOG

OTP-320-003

Page: 7 of 7

TIME/DATE

DESCRIPTION

cont

that the "RDY" indication was not observed on the control panel A VSD display. Believe-Ja Test Engineer believes this to be the correct operation of the system and the "RDY" indication will not be observed. This will be added to test exception # 8

**This page left intentionally blank**

**ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG**

INF-3057, Rev.0

Page A1-55

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall complete a log entry.

NAME (PRINT)	SIGNATURE	INITIALS
CW PRAKE	<i>CW Prake</i>	CWP
DR Jones	<i>Donald R Jones</i>	DJ
Gregory J. SULLIVAN	<i>Gregory J. Sullivan</i>	GJS
G.T. KIELY	<i>Gerald T. Kielly</i>	GTK
Brian Baku	<i>Brian Baku</i>	BB
ROGER FRIMSZ	<i>Roger Frimsz</i>	RF
M J WALLACE	<i>Michael Wallace</i>	MJW
M Aguilar	<i>M Aguilar</i>	MA
John Dyes	<i>John Dyes</i>	JD
DW. Henry	<i>DW Henry</i>	DWH
J E Borrowman	<i>JE Borrowman</i>	JEB
G.D. ZELLERS	<i>GD Zellers</i>	GZ
G/w Anderson	<i>Glen Anderson</i>	GA
MART GERKEN	<i>Mart Gerken</i>	MAG

ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG

HNF-3057, Rev.0

pg A1-55a

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall complete a log entry.

NAME (PRINT)	SIGNATURE	INITIALS
Jeff P Davis	<i>Jeff P Davis</i>	JPD
Rick Melbiness	<i>Rick Melbiness</i>	ROM
TED BERGEL	<i>Ted Bergel</i>	TEB
Tim Pyle	<i>Tim Pyle</i>	TAP
LISA Hartley	<i>Lisa Hartley</i>	LH
JOAN WRIGHT	<i>Joan Wright</i>	JW
Mike Lane	<i>Mike Lane</i>	ML
SHAWN HESTER	<i>Shawn Hester</i>	SAH
David Pattee	<i>David Pattee</i>	DP
DL WILLIAMS	<i>DL Williams</i>	DW
Darrell Scott	<i>Darrell Scott</i>	DS
L. Weiss	<i>L. Weiss</i>	LW
Ow Roake	<i>Ow Roake</i>	OR
Dan Haddles	<i>Dan Haddles</i>	DH

B.C.C Morris

*Bill Moore*

*W.M.*

**ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG**

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall complete a log entry.

NAME (PRINT)	SIGNATURE	INITIALS
Greg Hanson	<i>GH</i>	<i>GH</i>
Ken Anderson	<i>KA</i>	<i>KA</i>
RL WRIGHT	<i>RL Wright</i>	<i>RLW</i>
Paul A. Werner (QC)	<i>Paul A. Werner</i>	<i>PAW</i>
DL BARGER	<i>D-Barger</i>	<i>D-B</i>
JE Andrews	<i>JE Andrews</i>	<i>JEa</i>
STEVEN W. BURT	<i>Steven W. Burt</i>	<i>SWB</i>
Dave Witz	<i>Dave Witz</i>	<i>DW</i>
WL Adams	<i>WL Adams</i>	<i>WLA</i>

ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall complete a log entry.

NAME (PRINT)	SIGNATURE	INITIALS
V. Farley	<i>V. Farley</i>	VJF
Ti Clouse	<i>Terry Clouse</i>	T.C.
SL Fitzsimmons	<i>Stacey Fitzsimmons</i>	SLF

**ATTACHMENT 4 - OTP-320-003 DATA SHEET**

DATE OF TEST:			RECORD		
STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS	
<b>SECTION 5.1 WINCH ASSEMBLY W-0621</b>					
<b>Preparation/Initial Checks</b>					
5.1.1.1	P-0621 BREAKER	LOCKED OFF		N/A	
5.1.1.2	P-0622 DISCONNECT	LOCKED OFF			
5.1.2	ADMIN LOCKS REMOVED	YES			
5.1.3	TABLE 1 STATUS CORRECT	YES			
5.1.4	TABLE 2 STATUS CORRECT	YES			
5.1.5	ZI-0621 INDICATION	0 to 2.5 INCHES			
5.1.7.1	ZSH-0621A SET	5 INCHES			
5.1.7.2	ZLH-0621 INDICATION	ON			
5.1.9.1	ZSL-0621A SET	25 INCHES			
5.1.9.2	ZLL-0621 INDICATION	OFF			
5.1.10	LIGHT TEST	3 LIGHTS FUNCTION			
<b>Verify Winch W-0621 Operation</b>					
5.1.13.1	HS-0626 POSITION	LOWER			
5.1.13.2	YL-0626C INDICATION	ON			
5.1.13.3	YL-0626B INDICATION	OFF			
5.1.15.1	HS-0626 POSITION	STOP			
5.1.15.2	YL-0626C INDICATION	OFF			
5.1.15.3	YL-0626B INDICATION	ON			
5.1.15.4	ZLH-0621 INDICATION	OFF			
5.1.15.5	ZAH-0621 STATUS	OFF			
5.1.17.1	HS-0626 POSITION	LOWER			
5.1.17.2	YL-0626C INDICATION	ON			

Completed on REV A-2

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.1.17.3	YL-0626B INDICATION	OFF		
5.1.19.1	HS-0626 POSITION	STOP		
5.1.19.2	YL-0626C INDICATION	OFF		
5.1.19.3	YL-0626B INDICATION	ON		
5.1.19.4	ZLL-0621 INDICATION	ON		
5.1.19.5	ZAL-0621 STATUS	ON		
5.1.21.1	HS-0626 POSITION	RAISE		
5.1.21.2	YL-0626A INDICATION	ON		
5.1.21.3	YL-0626B INDICATION	OFF		
5.1.22.1	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.1.22.2	YL-0626A INDICATION	OFF		
5.1.22.3	YL-0626B INDICATION	ON		
5.1.22.4	ZLH-0621 INDICATION	ON		
5.1.22.5	ZLL-0621 INDICATION	OFF		
5.1.22.6	ZAH-0621 STATUS	ON		
5.1.22.7	ZAL-0621 STATUS	OFF		
5.1.22.8	XA-0621 STATUS	SOUNDING		
5.1.24	WINCH W-0621 BREAKER	LOCKED OFF		
5.1.25.1	SECTION 5.1 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.1.25.2	SECTION 5.1 COMPLETE	QC INSPECTOR INITIALS/DATE		

Completed on  
REV A-2

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.2 IMMERSIBLE SLUICE PUMP P-0621				
Preparation/Initial Checks				
5.2.1.1	WINCH W-0621 BREAKER	LOCKED OFF	LOCKED OFF	PKR
5.2.1.2	P-0622 DISCONNECT	LOCKED OFF	LOCKED OFF	PKR
5.2.3	TABLE 3 STATUS CORRECT	YES	N/A	PKR
5.2.4	ZI-0621 INDICATION	0 to 2.5 INCHES	5.0476 P-0 45"	PKR
5.2.5	TABLE 4 STATUS CORRECT	YES	YES	PKR
5.2.6.1	PISL-0621 INDICATION	LESS THAN 5 PSIG	0.9	PKR
5.2.6.2	TISH-0621 INDICATION	50 to 330 °F	69	PKR
5.2.6.3	TISH-0621 INDICATION	50 to 340 °F	69	PKR
5.2.6.4	TISH-0622A INDICATION	50 to 225 °F	71	PKR
5.2.6.5	TISH-0621A INDICATION	LESS THAN 2 AMPS	1.5 350	PKR
Verify Pump Operation				
5.2.7	HS-0635 POSITION	LOCAL	LOCAL	PKR
5.2.8	LIGHT TEST	4 LIGHTS FUNCTION	4 LIGHTS FUNCTION	PKR
5.2.11.1	HS-0621A POSITION	ROTATED TO START	ROTATED TO START	PKR
5.2.11.2	YL-0621A INDICATION	ON	ON	PKR
5.2.11.3	YL-0621B INDICATION	OFF	OFF	PKR
5.2.12	IISH-0621A INDICATION	20 to 24 AMPS	22	PKR
5.2.14.1	HS-0621A POSITION	ROTATED TO STOP	ROTATED TO STOP	PKR
5.2.14.2	YL-0621A INDICATION	OFF	OFF	PKR
5.2.14.3	YL-0621B INDICATION	ON	ON	PKR
5.2.16	P-0621 BREAKER	LOCKED OFF	LOCKED OFF	PKR
5.2.17.1	SECTION 5.2 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	SKR 5/26/98
5.2.17.2	SECTION 5.2 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	PKR 5-26-98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM</b>				
5.3.4	XA-06221 STATUS	ON	ON	Ja
5.3.8.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG	325	Ja
5.3.8.2	PCV-06221 INLET PRESSURE	AS FOUND	1925	Ja
5.3.8.3	PI-06220 INDICATION	AS FOUND	1800	Ja
5.3.11.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG	325	Ja
5.3.11.2	PCV-06221 INLET PRESSURE	AS FOUND	1600	Ja
5.3.11.3	PI-06221 INDICATION	AS FOUND	1400	Ja
5.3.14.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG	325	Ja
5.3.14.2	PCV-06221 INLET PRESSURE	AS FOUND	1920	Ja
5.3.14.3	PI-06222 INDICATION	AS FOUND	1800	Ja
5.3.15.1	PI-06223 INDICATION	165 to 175 PSIG	165 <sup>8/17/98</sup>	Ja
5.3.15.2	FI-0622 FI-06221 INDICATION	LESS THAN 10%	* 15%	Ja
5.3.15.3	XA-06221 STATUS	OFF	OFF	Ja
5.3.16	PI-06223 INDICATION	50 to 55 PSIG	55	Ja
5.3.17	FI-0622 FI-06221 INDICATION	LESS THAN 10%	0%	Ja
5.3.19	XA-06221 STATUS	ON	ON	Ja
5.3.20.1	SECTION 5.3 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	Ja 5/27/98
5.3.20.2	SECTION 5.3 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	MSB 5/27/98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.4 SLUICE BOOSTER PUMP P-0622 OPERATION</b>				
<b>Preparation/Initial Checks</b>				
5.4.3.1	PISL-0621 DISCONNECTED	YES	Yes	Jg
5.4.3.2	PRESSURE SIMULATOR CONNECTED	YES	Yes	Ja
5.4.5	PISL-0621 INDICATION	GREATER THAN 50 PSIG	52.7	Jg
5.4.8.1	WINCH W-0621 BREAKER	LOCKED OFF	Locked OFF	Jg
5.4.8.2	P-0621 BREAKER	LOCKED OFF	Locked OFF	Jg
5.4.9	ADMIN LOCKS REMOVED	YES	Yes	Ja
5.4.10	TABLE 5 STATUS CORRECT	YES	* NO	Jg
5.4.11	ZI-0621 INDICATION	0 to 2.5 INCHES	* 45"	Jg
5.4.12	TABLE 6 STATUS CORRECT	YES	Yes	Ja
5.4.13.1	PISL-0622 INDICATION	LESS THAN 5 PSIG	0.3	Jg
5.4.13.2	TI-06210A INDICATION	50 to 340 °F	65	Jg
5.4.13.3	TI-06210B INDICATION	50 to 225 °F	65	Jg
5.4.13.4	TI-0629 INDICATION	50 to 330 °F	65	Jg
5.4.13.5	TI-0622 INDICATION	LESS THAN 2 AMPS	0	Jg
5.4.13.6	EI-0621 INDICATION	RECORD AS FOUND	0	Ja
5.4.17	LIGHT TEST	4 LIGHTS FUNCTION	4 Lights Function	Jg
<b>Pump Operation Stop Switch Shutdown</b>				
5.4.18	SC-0621 SETTING	0%	0%	Jg
5.4.21.1	HS-0624A POSITION	PRESSED TO START	Start	Jg
5.4.21.2	YL-0624A INDICATION	ON	ON	Jg
5.4.21.3	YL-0624B INDICATION	OFF	OFF	Ja
5.4.22.1	ITSH-0622 INDICATION	RECORD AS FOUND	83	Jg
5.4.22.2	II-0622 INDICATION	RECORD AS FOUND	85	Ja
5.4.22.3	EI-0621 INDICATION	RECORD AS FOUND	460	Jg
5.4.22.4	SI-0621 INDICATION	1440 to 1550 RPM	1462	Jg

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.4.24.1	SC-0621 SETTING	100%	100%	ja
5.4.24.2	IISH-0622 INDICATION	36 to 38 AMPS	* 42	ja
5.4.24.3	II-0622 INDICATION	45 to 49 AMPS	45	ja
5.4.24.4	EI-0621 INDICATION	465 to 515 VOLTS	475	ja
5.4.24.5	SI-0621 INDICATION	3000 to 3060 RPM	* 2992	ja
5.4.26.1	HS-0624B POSITION	PRESSED TO STOP	stop	ja
5.4.26.2	YL-0624A INDICATION	OFF	OFF	ja
5.4.26.3	YL-0624B INDICATION	ON	ON	ja
Pump Operation COAST/STOP Button Shutdown				
5.4.30.1	HS-0624A POSITION	PRESSED TO START	start	ja
5.4.30.2	YL-0624A INDICATION	ON	ON	ja
5.4.30.3	YL-0624B INDICATION	OFF	OFF	ja
5.4.32.1	HS-0624C POSITION	FULLY INSERTED	Fully Inserted	ja
5.4.32.2	YL-0624A INDICATION	OFF	OFF	ja
5.4.32.3	YL-0624B INDICATION	ON	ON	ja
Verify Pump Low Suction Pressure Interlock				
5.4.33	HS-0624C POSITION	FULLY RETRACTED	Fully Retracted	ja
5.4.37.1	HS-0624A POSITION	PRESSED TO START	start	ja
5.4.37.2	YL-0624A INDICATION	ON	ON	ja
5.4.37.3	YL-0624B INDICATION	OFF	OFF	ja
5.4.39.1	PISL-0621 INDICATION	LESS THAN 30 PSIG	29.1	ja
5.4.39.2	YL-0624A INDICATION	OFF	OFF	ja
5.4.39.3	YL-0624B INDICATION	ON	ON	ja
5.4.39.4	WINDOW 6-1 STATUS	ON	ON	ja
5.4.41	P-0622 DISCONNECT	LOCKED OFF	Locked OFF	ja
5.4.42.2	PRESSURE SIMULATOR	DISCONNECTED	Disconnected	ja
5.4.42.3	PISL-0621	CONNECTED	Connected	ja
5.4.43.1	SECTION 5.4 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	ja 5/21/98
5.4.43.2	SECTION 5.4 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	MM 5/21/98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.5 SLUICER S-1361				
Preparation/Initial Checks				
5.5.4.1	YL-13613B INDICATION	ON	ON	JSA
5.5.4.2	YL-13613A INDICATION	OFF	OFF	JSA
5.5.4.3	YL-13615B INDICATION	ON	* OFF	JSA
5.5.4.4	YL-13615A INDICATION	OFF	OFF	JSA
5.5.6.1	HS-13614 POSITION	MAN	MAN	JSA
5.5.6.2	YL-13614B INDICATION	ON	* OFF	JSA
5.5.6.3	YL-13614A INDICATION	OFF	OFF	JSA
Sluice Operation - Manual Operation				
5.5.9.1	HS-13613 POSITION	ON	ON	JSA
5.5.9.2	YL-13613A INDICATION	ON	ON	JSA
5.5.9.3	YL-13613B INDICATION	OFF	OFF	JSA
5.5.10	ZC-1361 MOVEMENT	NOZZLE RESPONDED	Nozzle Responded	JSA
5.5.11	ZI-13614 INDICATION	INCREASES	increases	JSA
5.5.12	ZI-13614 INDICATION	READING CONSTANT	Constant	JSA
5.5.13	ZI-13614 INDICATION	DECREASES	Decreases	JSA
5.5.14	ZI-13614 INDICATION	READING CONSTANT	Constant	JSA
Sluicer Operation - Tilt Control				
5.5.16.1	HS-13614 POSITION	ON	ON	JSA
5.5.16.2	YL-13615A INDICATION	ON	ON	JSA
5.5.16.3	YL-13615B INDICATION	OFF	OFF	JSA
5.5.17	ZC-1361 MOVEMENT	NOZZLE RESPONDED	Nozzle Responded	JSA
5.5.18	ZI-13613 INDICATION	-40°	-38.30	JSA
5.5.19	ZI-13613 INDICATION	-40°	-38.30	JSA
5.5.20	ZI-13613 INDICATION	90°	90-20"	JSA
5.5.21	ZI-13613 INDICATION	90°	90-20"	JSA

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
Sluice Operation - Automatic Operation				
5.5.22	ZS-13614L SETPOINT	-90°	-90°	JEP
5.5.23	ZS-13614R SETPOINT	90°	90°	JEP
5.5.25.1	HS-13614 POSITION	AUTO	Auto	JEP
5.5.25.2	YL-13614B INDICATION	OFF	OFF	JEP
5.5.25.3	YL-13614A INDICATION	ON	ON	JEP
5.5.26	ZI-13614 INDICATION	SWEEPS -90° to 90°	Sweeps	JEP
5.5.29.1	HS-13614 POSITION	MAN	Man	JEP
5.5.29.2	YL-13614B INDICATION	ON	ON	JEP
5.5.29.3	YL-13614A INDICATION	OFF	OFF	JEP
5.5.32	TILT LIGHT STATUS	YL-13615A OFF YL-13615B ON	YL-13615A OFF YL-13615B ON	JEP
5.5.34	SLUICE PUMP LIGHT STATUS	YL-13613A OFF YL-13613B ON	YL-13613A OFF YL-13613B ON	JEP
5.5.36.1	SECTION 5.5 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	JEP 5/22/98
5.5.36.2	SECTION 5.5 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	MM 5/22/98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.6 SLUICE PIT 241-AY-02E CHILLER				
Preparation/Initial Checks				
5.6.9	TIC-06213 INDICATION	RECORD AS FOUND		
5.6.15.1.A	TIC-06213 INDICATION	RECORD AS FOUND	RECORD °F TEMP TIME DATE	
5.6.15.1.B	TI-0621A	RECORD AS FOUND		
5.6.15.1.C	TI-0621B	RECORD AS FOUND		
5.6.15.1.D	WINDOW 7-3 STATUS	RECORD AS FOUND		
5.6.17.1	TIC-06213 INDICATION	RECORD AS FOUND	RECORD °F TEMP TIME DATE	
5.6.17.2	TI-0621A	RECORD AS FOUND		
5.6.17.3	TI-0621B	RECORD AS FOUND		
5.6.17.4	WINDOW 7-3 STATUS	RECORD AS FOUND		
5.6.19.1	SECTION 5.6 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.6.19.2	SECTION 5.6 COMPLETE	QC INSPECTOR INITIALS/DATE		

Completed on REV  
A-2 7/7/98  
A-3

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.7 VERIFY VALVE HV-0625 OPERATION				
5.7.3.1	SLUICE PIT 241-AY-02E	NO LEAKAGE PRESENT	No Leakage Present	Ja
5.7.3.2	SLUICE PIT 241-C-06C	NO LEAKAGE PRESENT	No Leakage Present	Ja
5.7.3.3	FLOW INTO 241-C-106	FLOW OBSERVED	Flow Observed	Ja
5.7.3.4	FLOW INTO 241-AY-102	FLOW OBSERVED	Flow Observed	Jg
5.7.3.5	PISL-0621	AS FOUND	0.6	Jg
5.7.3.6	WINDOW 6-1	AS FOUND	ON	Jg
5.7.3.7	PISL-0622	AS FOUND	0.8	Ja
5.7.3.8	WINDOW 6-2	AS FOUND	ON	Jg
5.7.3.9	FQ1-0621	AS FOUND	4615025	Jg
5.7.3.10	FI-0621	AS FOUND	589	Jg
5.7.3.11	Z1H-0625 STATUS	ON	ON	Ja
5.7.3.12	Z1L-0625 STATUS	ON	ON	Jg
5.7.5.1	SECTION 5.7 COMPLETE	TEST DIRECTOR INITIALS/DATE	Jra	5/20/98
5.7.5.2	SECTION 5.7 COMPLETE	QC INSPECTOR INITIALS/DATE	PAW	5-20-98 PAW

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS</b>				
5.8.1.1.A	CK 10 BREAKER	OFF		
5.8.1.1.B	CK 12 BREAKER	OFF		
5.8.1.2	WINCH BREAKER	LOCKED OFF		
5.8.1.3	P-0621 BREAKER	LOCKED OFF		
5.8.1.4	P-0622 DISCONNECT	LOCKED OFF		
5.8.1.5	NITROGEN BOTTLE VALVE	CLOSED		
5.8.1.6	PIT 241-AY-02E VENT PLUG INSTALLED	YES		
5.8.1.7	SECTION 5.8 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.8.1.8	SECTION 5.8 COMPLETE	QC INSPECTOR INITIALS/DATE		

*Completed on  
REV A-2*



**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
<b>241-C-106 LINEUP</b>			
<b>C-PDP-1 TANK C-106 SLUICING POWER DISTRIBUTION PANEL</b>			
	<b>MCC-N1 FEEDER BREAKER</b>	ON	[Signature]
	<b>MAIN DISCONNECT</b>	ON	[Signature]
	<b>TRANSFORMER BREAKER SKID PRIMARY FEEDER BREAKER</b>	ON	[Signature]
<b>PROJECT W-320 TRANSFORMERS/CIRCUIT BREAKERS SKID</b>			
	<b>TRANSFORMER SPT PRIMARY FEEDER BREAKER</b>	ON	[Signature]
	<b>OFF-FB CONSTRUCTION OFFICE TRAILER FEEDER BREAKER</b>	ON	[Signature]
<b>M0-211 PANELBOARD PNL M0211 (INSIDE M0-211)</b>			
	<b>MAIN BREAKER</b>	ON	[Signature]
CK 1	<b>CP-02 IN TANK IMAGING RCPTS</b>	ON	[Signature]
CK 7	<b>CP-01/CB-01 OPER STA RCPTS</b>	ON	[Signature]
<b>MCC-N1 (INSIDE 241-C-51)</b>			
	<b>SLUICER HYDRAULIC POWER UNIT</b>	ON	[Signature]
1FM	<b>INCOMING SUPPLY</b>	ON	[Signature]
1FDR	<b>PROCESS BLDG</b>	ON	[Signature]
2FE	<b>SLURRY PUMP WINCH</b>	LOCKED OFF	[Signature]
2FK	<b>XFMR DISCONNECT</b>	ON	[Signature]
3FD	<b>600A TO SEISMIC SKID</b>	ON	[Signature]
	<b>BOOSTER PUMP P-1362 MOLDED CASE DISCONNECT SWITCH</b>	OFF	[Signature]
<b>MCC-N2 (INSIDE 241-C-51)</b>			
1FF	<b>INLINE SLURRY PUMP BOOSTER VSD P-1362</b>	LOCKED OFF	[Signature]
1FK	<b>SUBMERSIBLE SLURRY PUMP</b>	LOCKED OFF	[Signature]
<b>120/240VAC PNL RD C 106-PP2 (LOCATED 252-C-51, MCC-N1, 3FJ)</b>			
CK 1	<b>LIGHTING</b>	ON	[Signature]

ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP (Cont.)

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
CK 2	VSD CABINET LIGHTING	ON	[Handwritten Initials]
CK 5	C-PDP-1 LTG & RCPTS	ON	
CK 7	CATHODIC PROTECTION	ON	
CK 12	SSS-1A HVAC & RCPT	ON	
CK 13	IE-1362	OFF	
CK 14	SSS-1B HVAC & RCPT	ON	
CK 18	PANEL MAIN	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1A (INSIDE 241-C-51A)			
C-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	[Handwritten Initials]
YL-13651	C-SSS-1A POWER AVAILABLE (SET) LIGHT	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1B (INSIDE 241-C-51B)			
YL-13653	C-SSS-1B POWER AVAILABLE SET LIGHT	ON	[Handwritten Initials]
SEISMIC DETECTION SYSTEM 1A/1B EMERGENCY TRIP (LOCATED INSIDE M0-211 ON CP-01)			
HS-13650A	EMERGENCY TRIP SWITCH	RETRACTED	[Handwritten Initials]
C106-PP1 (LOCATED IN PROCESS BUILDING 241-C-91)			
CK 4	RCPT	ON	[Handwritten Initials]
CB 5	IN-TANK CCTV FCU-1361 RACK (GFCI)	ON	
ER-1362 (LOCATED OUTSIDE PROCESS BUILDING 241-C-91)			
CB-1	PROCESS BLDG POWER PANEL PP-1 SUPPLY	ON	[Handwritten Initials]
DS-1	PROCESS BUILDING MAIN DISCONNECT SWITCH	ON	
241-AY-102 LINEUP			
DISTRIBUTION PANEL AY-PDP-1			
7	AY102-PP1 EBS MAIN POWER PANEL FEEDER BREAKER	ON	[Handwritten Initials]
11	ELECTRICAL EQUIPMENT SKID: BLDG 241-AY-51	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1A) INSIDE 241-AY-51A			
AY-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	[Handwritten Initials]
YL-06210	C-SSS-1A POWER AVAILABLE LIGHT SET	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1B) INSIDE 241-AY-51B			
YL-06212	C-SSS-1B POWER AVAILABLE LIGHT SET	ON	[Handwritten Initials]

**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP (Cont.)**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS	
<b>ELECTRICAL EQUIPMENT SKID 241-AY-51 (OUTSIDE 241-AY-51)</b>				
	BLDG 241-AY-51 480V SERVICE DISCONNECT	ON	LSY	
<b>ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER (INSIDE 241-AY-51)</b>				
	WINCH STARTER W-0621	LOCKED OFF	LSY	
	IMMERSIBLE PUMP P-0621 FEEDER BREAKER (480V)	LOCKED OFF	LSY	
<b>VARIABLE SPEED DRIVE VC-0622 (INSIDE 241-AY-51)</b>				
	BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH	LOCKED OFF	LSY	
<b>MINI POWER PANEL AY102-PP1 (LOCATED INSIDE 241-AY-51)</b>				
	MAIN	ON	LSY	
	SECONDARY MAIN	ON		
CK 1	HEAT PUMP, 240V, 1PH AC-0623	ON		
CK 4	GFCI RCPT & LIGHTS	ON		
CK 5	241-AY-51B HVAC, RCPT & BATT CHGR	ON		
CK 6	241-AY-51A HVAC, RCPT & BATT CHGR	ON		
CK 9	241-AY-801A	ON		
CK 10	OPER STATION RCPT	ON		
CK 11	AY-PDP-1 LTG & RCPT	ON		
CK 12	OPER STATION IE-0621	ON		
CK 13	P-0622 VSD LIGHTING	ON		
<b>SEISMIC DETECTION SYSTEM IA/IB EMERGENCY TRIP (LOCATED INSIDE 241-AY-51 AT IE-0621)</b>				
HS-06211A	EMERGENCY TRIP SWITCH	RETRACTED		LSY
<b>ELECTRICAL DISTRIBUTION SKID EDS-DP-807 (LOCATED AT BUILDING 241-A-271)</b>				
CK 11	AREA MONITOR - RAT 44	ON	LSY	
CK 12	801-AY PANEL BAS	ON		

**ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET**

INSTRUMENT	DESCRIPTION/LOCATION	NEXT DUE DATE	INITIAL
ZI-0621	SBM SLUICE PUMP P-0621 POSITION (LOCATED ELECTRICAL EQUIPMENT SKID 241-A1-51, PANEL TE-0621)	1-21-99	LSJ
PISL-0621	SBM SLUICE PUMP P-0621 DISCHARGE PRESSURE (PISL-0621) (LOCATED PANEL TE-0621)	4-7-01	LSJ
PI-06223	NITROGEN PURGE LINE PRESSURE (LOCATED NITROGEN GAS CONTROL PANEL 6CP-0621)	4-6-01	LSJ
PSL-0622	NITROGEN PURGE LINE PRESSURE SWITCH LOW (LOCATED NITROGEN GAS CONTROL PANEL 6CP-0621)	4-7-01	LSJ
ZI-13613	SLUICER S-1361 TILT POSITION (LOCATED MO-211 PANEL CB-D1)	2-13-99	LSJ
ZI-13614	SLUICER S-1361 PAN POSITION (LOCATED MO-211 PANEL CB-D1)	2-13-99	LSJ
TIC/TSH-06213	AIR COOL CHILLER TEMP CONT/SW HIGH (LOCATED O 241-A1-102 PUMP PIT COOLER 241-A1-02E CONTROL PANEL)	2-24-01	LSJ

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-1	5/20/98	71 of 73

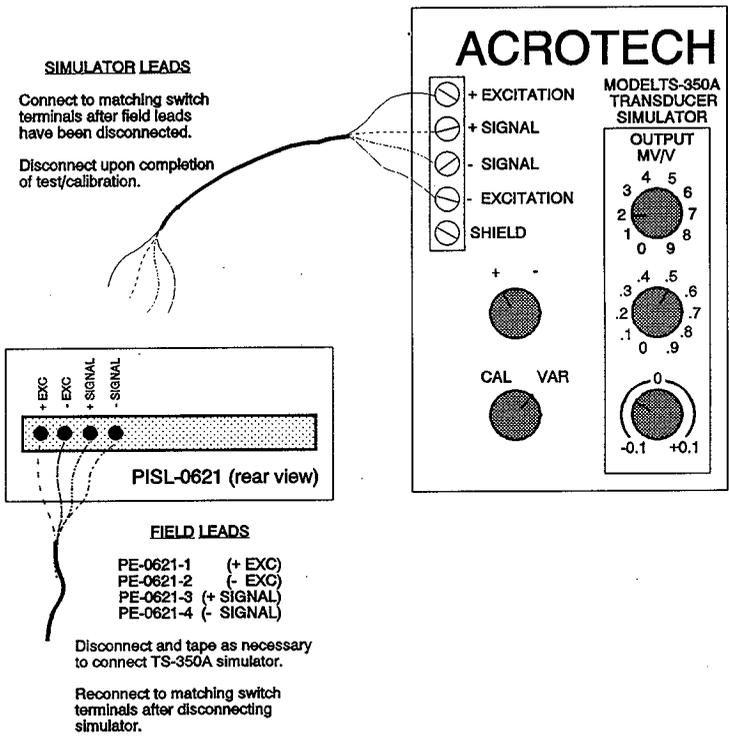


FIGURE 1 - PRESSURE SIMULATOR CONNECTION

## PROCEDURE HISTORY SIGNATURE SHEET

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/16/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>5/16/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/17/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/17/98</u>
Environmental Eng.	<u>P.C. Miller</u>	<u>5/17/98</u>
RadCon Engineer	<u>R.J. Reeder</u>	<u>5/17/98</u>
COG Engineer	<u>J.M. Jones</u>	<u>5/17/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>5/19/98</u>
Approval Authority	<u>T.J. Kelley</u>	<u>5/18/98</u>

Justification: Engineering Request W-320.

Summary of Changes: New Procedure to support Project W-320.

Attachment A-2

Completed Test Procedure OTP-320-003, Revision A-2

## WRSS SUPERNATE TRANSFER SYSTEM OPERATIONAL TEST

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

Current Modification: A-2  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ  
 PCA Incorporated: ETF-98-349

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>6/1/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>6/1/98</u>
QA Engineer	<u>W.L. Adams</u>	<u>6/1/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>6/1/98</u>
Environmental Eng.	<u>J.D. Guberski</u>	<u>6/1/98</u>
RadCon Engineer	<u>J. Pieper</u>	<u>6/1/98</u>
COG Engineer	<u>J.M. Jones</u>	<u>6/1/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>6/1/98</u>
Approval Authority	<u>J.E. Andrews</u>	<u>6/1/98</u>

Justification: RTD Simulator required to test Pit AY-02E Chiller Unit. Winch movement already verified.

Summary of Changes:  
 Section 5.6 - Rewrote section to provide for installation and removal of an RTD simulator.  
 Section 5.1 - Deleted Step 5.1.1 and Note on page 24.

TABLE OF CONTENTS

PAGE

1.0 PURPOSE AND SCOPE . . . . . 3  
 1.1 PURPOSE . . . . . 3  
 1.2 SCOPE . . . . . 3

2.0 INFORMATION . . . . . 3  
 2.1 TERMS AND DEFINITIONS . . . . . 3  
 2.2 RESPONSIBILITIES . . . . . 4  
 2.3 REFERENCES . . . . . 5  
 2.4 GENERAL INFORMATION . . . . . 6  
 2.5 RECORDS . . . . . 8

3.0 PRECAUTIONS AND LIMITATIONS . . . . . 9  
 3.1 RADIATION AND CONTAMINATION CONTROL . . . . . 9  
 3.2 ENVIRONMENTAL COMPLIANCE . . . . . 9  
 3.3 LIMITS . . . . . 10

4.0 PREREQUISITES . . . . . 16  
 4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES . . . . . 16  
 4.2 PERFORMANCE DOCUMENTS . . . . . 16  
 4.3 CONDITIONS AND ACTIONS . . . . . 17

5.0 PROCEDURE . . . . . 20  
 5.1 WINCH ASSEMBLY W-0621 . . . . . 20  
 5.2 IMMERSIBLE SLUICE PUMP P-0621 . . . . . 25  
 5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM . . . . . 29  
 5.4 SLUICE BOOSTER PUMP P-0622 . . . . . 31  
 5.5 SLUICER S-1361 . . . . . 40  
 5.6 SLUICE PIT 241-AY-02E CHILLER . . . . . 45  
 5.7 VERIFY VALVE HV-0625 OPERATION . . . . . 50  
 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS . . . . . 52  
 5.9 TEST CLOSURE . . . . . 53

ATTACHMENT 1 - OTP-320-003 TEST LOG . . . . . 54  
 ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT . . . . . 55  
 ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG . . . . . 56  
 ATTACHMENT 4 - OTP-320-003 DATA SHEET . . . . . 57  
 ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP . . . . . 69  
 ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET . . . . . 72  
 FIGURE 1 - PRESSURE SIMULATOR CONNECTION . . . . . 73  
 PROCEDURE HISTORY SIGNATURE SHEET . . . . . 74

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	2 of 75

## 1.0 PURPOSE AND SCOPE

### 1.1 PURPOSE

This procedure provides instructions for operability testing of the Supernate Transfer portion of the Tank 241-AY-102 Waste Retrieval Sluicing System, and Sluice Pit 241-AY-102 Chiller.

### 1.2 SCOPE

- 1.2.1 This procedure involves the W-320 Tank 241-AY-102 Supernate Transfer System. Instructions are provided to verify correct operation of the components and portions of their associated instrumentation, controls, and alarms, but does not allow for the transfer of tank waste.
- 1.2.2 The following items will be tested for operation:
- Immersible Sluice Pump Winch Assembly W-0621
  - Immersible Sluice Pump P-0621
  - Sluice Booster Pump P-0622 Nitrogen Seal/Purge System
  - Sluice Booster Pump P-0622
  - Sluicer S-1361
  - Sluice Pit 241-AY-02E Chiller
  - Valve HV-0625

## 2.0 INFORMATION

### 2.1 TERMS AND DEFINITIONS

None.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	3 of 75

## 2.2 RESPONSIBILITIES

### 2.2.1 Test Engineer:

- Provide technical support during testing.
- Provide programming support during testing.
- Review test documents to validate acceptance.
- Record equipment status and data per this procedure.
- Record data exceptions and other notes as required on the Operational Test Procedure Data Sheets.
- Prepare post testing documents.

### 2.2.2 Craft (TWRS Maintenance and/or Construction Forces):

- Provide assistance during Operational Test Procedure testing.
- Provide equipment for performance of this Operational Test Procedure.

### 2.2.3 Quality Control Inspector:

- Review recorded test data for accuracy and completeness at completion of test.
- Perform activities associated with QC Hold Point.

### 2.2.4 Test Director:

- Verifies prerequisites complete prior to start of test.
- Overall control of the testing process and change record authorization for this Operational Test Procedure.
- Ensures all required data is collected.
- Responsible for Safe and productive accomplishment of testing.
- Ensure safe working conditions and practices.
- Ensure compliance with test documents and Technical Safety Requirements/Documents (TSRs/OSDs) during testing.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	4 of 75

## 2.2 RESPONSIBILITIES (Cont.)

- Communicate and coordinate testing with DST Shift Manager.
- Ensures review and approval of all modifications to test procedures are completed prior to return to testing.
- Act as direct line of communication and centralized point of control during normal, abnormal, and casualty situations.
- Conduct pretest briefings as required.
- Schedule/reschedule tests as required.
- Conduct pre-job system walkdowns.
- Review test documents to validate acceptance.
- Verify all test instrumentation is within current calibration cycle.

### 2.2.5 Operations:

- Perform all operations required by this procedure per direction of the Test Director.
- Operate ventilation systems as required.
- Record test data as required.

## 2.3 REFERENCES

- HNF-SD-WM-PCP-013, "Tank 241-C-106 Waste Retrieval Sluicing System Process Control Plan"
- TO-320-011, "OPERATE C-106 IN TANK IMAGING SYSTEM"
- TO-320-014, "WRSS Transfer Line Flushing"
- Certified Vendor Information #22668
- H-2-818559 SH. 2-5, PROJECT W-320 P&ID TANK 241-C-106
- H-2-818560 SH. 3, PROJECT W-320 P&ID TANK 241-AY-102
- H-2-818680 C FARM ONE-LINE DIAGRAM

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	5 of 75

## 2.4 GENERAL INFORMATION

### 2.4.1 CHANGE CONTROL

Change control shall be in accordance with HNF-IP-0842.

### 2.4.2 EXCEPTIONS

2.4.2.1 Test exceptions are used to document unexpected results and identify appropriate actions, not to circumvent performance requirements.

2.4.2.2 All test exceptions shall be given a sequential number and recorded on Attachment 1, OTP-320-003 TEST LOG.

2.4.2.3 Attachment 2, OTP-320-003 TEST EXCEPTION REPORT, shall be filled out to record and disposition each test exception.

### 2.4.3 ALARM RESPONSE

2.4.3.1 This Operational Test Procedure identifies all alarms expected as a result of testing and provides instructions for responding to those alarms.

2.4.3.2 Existing alarm response procedures shall be used when responding to unexpected alarms which occur during testing.

2.4.3.3 Unexpected alarms received during testing, that are associated with this test, shall be logged as test exceptions and evaluated by the Test Director for effect on the test.

2.4.4 Contact Test Director and Test Engineer for additional instructions if changing plant conditions affect testing or delays extend test duration past end of the (testing) shift.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	6 of 75

## 2.4 GENERAL INFORMATION (Cont.)

- 2.4.5 If during performance of this procedure, any of the following conditions are found, **IMMEDIATELY** notify the assigned Test Director and Test Engineer:
- Any equipment malfunction which could prevent fulfillment of functional requirements.
  - Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.
  - Any other unexpected anomalies.

Test Director shall assess the effect on the plant and the test and direct either continuation of the test in the same section, proceeding to another attachment or section of the test, or suspension of the test per step 2.4.10 and establishing a safe condition for equipment.

- 2.4.6 Comply with the Hanford Site Wide Lock and Tag policy requirements, HNF-IP-0842, Vol. II, Section 4.9.1.
- 2.4.7 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 the desired range.
  - Have an accuracy (consistent with state-of-the-art limitations) equal to or greater than the accuracy specified in the procedure.
- 2.4.8 Timing measurements shall be made with commercially available timing devices.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	7 of 75

## 2.4 GENERAL INFORMATION (Cont.)

### 2.4.9 SYSTEM STATUS

Record all changes in equipment configuration, comments and observations by participants, and all other data pertinent to the test on Attachment 1, OTP-320-003 TEST LOG.

### 2.4.10 SUSPENSION OF TEST AND RESUMING TEST

- 2.4.10.1 Test Director may unilaterally, for any reason, stop testing, and place equipment in a safe condition. All suspension of testing shall be documented on Attachment 1, OTP-320-003 TEST LOG.
- 2.4.10.2 If a section of the test is suspended for any reason prior to completing all steps, the Test Director shall establish initial conditions necessary to resume testing for that section. Previously completed sections need not be repeated unless directed by the Test Director to establish conditions required to resume the test.

## 2.5 RECORDS

The performance copy of the Operational Test Procedure and all completed attachments shall be filed as a permanent test record (Operational Test Report).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	8 of 75

### 3.0 PRECAUTIONS AND LIMITATIONS

#### 3.1 RADIATION AND CONTAMINATION CONTROL

- 3.1.1 Work in Radiological Areas shall be review by Radiological Control Engineering and Technical Support prior to release (HNF-IP-0842 Vol. 1, Section 1.1).
- 3.1.2 High dose rates and loose contamination are possible during pit activities
- (HP) 3.1.3 Indicates Health Physics (Health Physics Technician) hold points.
- 3.1.4 When radiological contamination or radiation dose rate exceeds limiting conditions specified in Radiological Work Permit, stop work authority shall be initiated per HSRM-1, Article 345.
- 3.1.5 Implement high radiation area physical access controls per HNF-IP-0842, Vol. VII, Section 2.2.
- 3.1.6 All equipment removed from tank or pits shall be treated as being radiologically contaminated.

#### 3.2 ENVIRONMENTAL COMPLIANCE

Any leakage detected during transfer line flushes must be reported to Environmental Operations Compliance per the Environmental Compliance On-Call list. Operations Compliance will determine reportability per Washington Administrative Code, Chapter 173-303 requirements.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 2	6/1/98	9 of 75

### 3.3 LIMITS

Tank Waste Remediation System Technical Safety Requirements, HNF-SD-WM-TSR-006

#### 3.1 CONFINEMENT

##### 3.1.1 Transfer System Covers

LCO 3.1.1 Transfer system covers shall be OPERABLE.

##### MODE

APPLICABILITY: OPERATION and LIMITED.

##### PROCESS AREA

APPLICABILITY: Transfer system covers that are:

- associated with structures that are PHYSICALLY CONNECTED to an ACTIVE WASTE transfer pump not under administrative lock; and
- not under the control of AC 5.22, "Transfer System Cover Removal Controls."

#### 3.2 FLAMMABLE GAS

##### 3.2.1 DST and AWF Tank Ventilation Systems

LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.

##### MODE

APPLICABILITY: OPERATION and LIMITED.

##### PROCESS AREA

APPLICABILITY: DSTs and AWF tanks.

##### 3.2.2 SST Ventilation Systems - Active

LCO 3.2.2 An active ventilation system shall be OPERABLE.

##### MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA SSTs with active ventilation systems (241-C-105 except during WRSS operations, C-106, SX-101, SX-102, SX-103, SX-104, SX-105, SX-106, SX-107, SX-108, SX-109, SX-110, SX-111, SX-112, and SX-114).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	10 of 75

## 3.3 LIMITS (Cont.)

## LIMIT - AC 5.10 Ignition Controls

5.10.2 Program Key Elementsb. Vehicle Controls

- Vehicle access within the tank farm boundary shall be limited to vehicles whose fuel systems are protected from damage to the integrity of the fuel systems caused by potential collisions with tank structures (e.g., mechanical protection such as a skid plate on the fuel tank or reservoir tanks physically located higher than risers or vehicle axles).

c. Flammable Gas Ignition ControlsIgnition Source Control Set #2

5. Electrical equipment shall be designed to meet NFPA 70, Class I, Division 2, Group B criteria or provide equivalent safety. As a minimum, this shall be interpreted to mean the equipment is nonsparking under normal operation or, if normally sparking, the sparking component(s) shall be continuously isolated (purged and pressurized) from the potentially flammable gas environment, or the design of the device enclosure shall be of sufficient strength (explosion-proof) to prevent propagation of a gas burn to the environment external to the enclosure (NFPA 70).
6. Either automatic shutdown or alarming with manual shutdown is required upon loss of protective gas pressure or flow as defined by NFPA 496 Type Z pressurization. In EX-TANK INTRUSIVE region applications, electrical equipment that does not meet Class I, Division 2, Group B may be used, if it is automatically shutdown by combustible gas detection systems.

5.10.3 Applicability

This program applies to SSTs, DSTs (except Tank 241-SY-101), AWF tanks, DCRTs, catch tanks, IMUSTs, WASTE transfer systems, 204-AR Waste Unloading Facility, 244-AR Vault, and the 244-CR Vault. Controls for Tank 241-SY-101 are included in AC 5.9, "Flammability Controls."

Flammable gas ignition controls apply to tanks with a potential flammable gas hazard, which include SSTs, DSTs, AWF tanks, DCRTs, catch tanks, IMUSTs, 244-AR Vault, and the 244-CR Vault.

INTRUSIVE controls and vehicle controls apply to tanks with a potential organic solvent hazard, which are identified in HNF-SD-WM-BIO-001, Chapter 5.0, Table 5.3.2.15-6.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	11 of 75

### 3.3 LIMITS (Cont.)

#### LIMIT - AC 5.13 Encasement Seal Loop Controls

##### 5.13.1

##### Requirement for Encasement Seal Loop Controls

A program shall be maintained to control encasement seal loop drain line isolation valves (hydrostatic test valves).

##### 5.13.2

##### Program Key Elements

During WASTE transfer through a WASTE transfer system, all encasement seal loop drain line isolation valves associated with PHYSICALLY CONNECTED piping shall be in the "open," "drain," or "operate" position, as applicable to the particular valve to provide an open drain path.

#### LIMIT - AC 5.20 Transfer Pump Administrative Lock Controls

##### 5.20.1

##### Requirement for Transfer Pump Administrative Lock Controls

A program shall be maintained for administrative lock controls on WASTE transfer pumps to minimize the potential for inadvertent pump starts.

##### 5.20.2 Program Key Elements

- a. The administrative lock of a WASTE transfer pump is demonstrated by removing and securing the motive force from the pump (e.g., electrical power, steam, water, or air).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	12 of 75

## 3.3 LIMITS (Cont.)

- b. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps locked in accordance with AC 5.20, Transfer Pump Administrative Lock Controls," shall normally be maintained OPERABLE. OPERABILITY is demonstrated by periodic VERIFICATION that the transfer system covers are in place, and periodic performance of a FUNCTIONAL TEST of the service water pressure detection systems and transfer leak detection systems.*

*Transfer system covers, service water pressure detection systems, and transfer leak detection systems may be inoperable provided they are specifically identified and periodic management reviews are performed to approve their continued inoperability. The frequency of management reviews is based on the number of affected transfer system covers, service water pressure detection systems, and transfer leak detection systems, and the duration of their inoperability.*

- c. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps not locked in accordance with the administrative lock control program are controlled in accordance with LCO 3.1.1, "Transfer System Covers and Entry Doors;" LCO 3.1.2, "Service Water Pressure Detection Systems;" and LCO 3.1.3, "Transfer Leak Detection Systems," respectively.*

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	13 of 75

### 3.3 LIMITS (Cont.)

- 3.3.1 All portions of the test shall be completed before the system is either accepted or rejected.
- 3.3.2 All electrical and mechanical apparatus shall be operated as designed.

#### ACCEPTANCE CRITERIA

- 3.3.3 This Operational Test Procedure will be considered successful if all the following criteria are met:

##### 3.3.3.1 Winch W-0621

- Winch shall lower and raise the immersible pump and stop raise movement when retracted travel limit is reached. This test is unable to verify the extended travel interlock.

##### 3.3.3.2 Immersible Slurry Pump P-0621

- Pump P-0621 shall start and stop using START STOP switch.
- Pump P-0621 pump indicator lights shall work properly.

##### 3.3.3.3 Booster Pump Nitrogen Purge System

- PCV-06221 set at 325 (320 to 330) psig.
- PCV-06222 set at 50 (50 to 55) psig (Dry Impeller).
- FI-0622 indicates less than 10%.
- ANN-0621 Annunciator Window BOOSTER PUMP SEAL GAS TROUBLE (XA-06221) indicates ON when required.

##### 3.3.3.4 Booster Pump P-0622

- Pump P-0622 shall start and stop using the START and STOP switches.
- Pump P-0622 speed is adjustable from 1500 to approximately 3000 RPM locally.
- Pump P-0622 shall stop when COAST/STOP button is pushed.
- Pump P-0622 shall shutdown from local start when low suction pressure condition is present.
- Pump P-0622 indicators shall work properly.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 2	6/1/98	14 of 75

## 3.3 LIMITS (Cont.)

3.3.3.5 Sluicer S-1361

- Sluicer S-1361 shall pan left and right and maintain set position when in manual.
- Sluicer S-1361 shall tilt up and down and maintain set position when in manual.
- Sluicer S-1361 shall sweep left to - 90°, and right to 90° when in Automatic Pan Control.
- Sluicer S-1361 indicators shall work properly.

3.3.3.6 Sluice Pit 241-AY-02E Chiller

- Pit 241-AY-02E Chiller shall start and decrease Pit 241-AY-02E temperature.
- Pit 241-AY-102 Chiller indicators shall work properly.

3.3.3.7 Valve HV-0625

- Valve HV-0625 shall cycle and route water to Tank 214-C-106 or 241-AY-102 as selected.
- No visible leakage from flush jumper connection.
- No visible leakage from transfer jumper connections.
- Identified instruments respond to flush water flow.

(QC)

3.3.4 Indicates Quality Control (QC) Hold Points. When each hold point is reached no further steps are to be performed until a QC representative has signed off required step(s).

(HP)

3.3.5 Indicates Health Physics (HP) Hold Points. When each hold point is reached no further steps are to be performed until a HP representative has signed off required step(s).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	15 of 75

## 4.0 PREREQUISITES

### 4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

- ACROTECH TS-350A Transducer Simulator for inserting pump suction pressure signal.
- Means of communication between control room and equipment locations (i.e. radios/cell phones).
- One large straight bladed screwdriver.
- Three (3) temporary cameras.

### 4.2 PERFORMANCE DOCUMENTS

- TO-320-011, "OPERATE C-106 IN-TANK IMAGING SYSTEM".
- TO-320-014, "TRANSFER LINE FLUSHING"
- TO-060-050, "296-P-16 HVAC"
- TO-060-350, "AY/AZ TANK VENTILATION PRIMARY EXHAUST SYSTEM."
- TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".
- TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".
- 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".
- Operating procedures for temporary cameras (to be provided in Job Control System Work Packages).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	16 of 75

## 4.3 CONDITIONS AND ACTIONS

4.3.1 VERIFY Health Physics Technician support availability.

NOTE - A daily pre-job briefing shall be performed by the Test Director and documented in Attachment 1, OTP-320-003 TEST LOG.

4.3.2 CONDUCT an initial pretest briefing for all personnel involved in the performance of this Operational Test Procedure.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

NOTE - Signature Log requirement is ongoing as new individuals become involved in the procedure.

4.3.3 ENSURE all personnel to be involved with performance of this procedure have completed Attachment 3, OTP-320-003 SIGNATURE LOG.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.4 REVIEW LOCK & TAG LOGBOOK to verify all components are available for the test.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.5 ENSURE installed instrumentation requiring calibration is within current calibration cycle with calibration stickers affixed per ATTACHMENT 6, OTP-320-003 CALIBRATION DATA SHEET.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.6 PERFORM a walkdown inspection of the work area for unusual and/or hazardous conditions.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	17 of 75

## 4.3 CONDITIONS AND ACTIONS (Cont.)

4.3.7 ENSURE the following coverblocks are in place:

- Pit 241-C-06C.
- Pit 241-AY-02E.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.8 ENSURE the following jumpers are installed:

- Sluice Pit 241-AY-02E jumper between Sluice Booster Pump P-0622 and nozzle U2.
- Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to Sluicer S-1361.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.9 ENSURE Tank 241-C-106 Ventilation System is in operation per TO-060-050, "296-P16 HVAC."

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.10 ENSURE C-106 In-Tank Imaging System is in operation per TO-320-011, "Operate C-106 In Tank Imaging System."

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.11 ENSURE electrical circuit breakers are aligned per Attachment 5, OTP-320-003 Electrical Lineup.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.12 ENSURE Tank 241-AY-102 Primary Ventilation System is in operation per TO-060-350, "AY/AZ Tank Ventilation Primary Exhaust System", AND NO "OUTLET PRIMARY VENT FLOW (LO)" alarms are activated.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.13 ENSURE the official Operational Test Procedure copy and all other photocopies to be used during testing are the latest approved revision.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

Type	Document No	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	18 of 75

4.3 CONDITIONS AND ACTIONS (Cont.)

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.14 ENSURE C-Farm transfer leak detector LDE-1368 has been functionally tested in the previous 92 days per TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.15 ENSURE AY-Farm transfer leak detector LDE-102-32 has been functionally tested in the previous 92 days per TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.16 ENSURE encasement leak detector LDE-1364 has been functionally tested in the previous 192 days per 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.17 ENSURE temporary cameras have been installed in the following locations per the Job Control System, AND the work package provides operating instructions:

- Tank 241-AY-102
- Sluice Pit 241-AY-02E CAMERA PORT #1
- Sluice Pit 241-C-06C CAMERA PORT

Completed on  
Rev A1. Camera's not  
required for remainder of  
N/A / test ja

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.18 ESTABLISH communication between control room and equipment locations.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

4.3.19 OBTAIN release from Operations management prior to continuing this test.

TEST DIRECTOR INITIALS/DATE: ja / 6/2/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	19 of 75

## 5.0 PROCEDURE

- NOTE - "RECORD" in a step indicates that data and/or initials are to be entered on Attachment 4, OTP-320-003 Data Sheet when conditions in the step are met.
- The acceptable range for required information is listed on Attachment 4, OTP-320-003 Data Sheet.
  - Annunciators may be acknowledged/reset as required throughout this procedure. Alarm status should be taken after resetting the annunciator panel.
  - Alarms/Faceplates will not reset/change until RESET button is pushed.

### 5.1 WINCH ASSEMBLY W-0621

#### CAUTION

During testing of the winch system, immersible pump P-0621 must not contact the waste surface.

#### CAUTION

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

#### Preparation/Initial Checks

- 5.1.1 ENSURE Administrative Locks are on the following breaker and disconnect AND,

#### RECORD:

- 5.1.1.1 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.1.1.2 VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC), disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A 2	6/1/98	20 of 75

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

5.1.2 REMOVE Administrative Lock from ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621 AND,

POSITION breaker to ON.

THEN RECORD.

5.1.3 IF OFF, PRESS to test the following indicator lights RELEASE test button AND,

RECORD the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 1.

**TABLE 1 - SLURRY SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

5.1.4 RECORD Alarm Conditions at annunciator ANN-0621 (located on IE-0621) per Table 2.

**TABLE 2 - SLURRY SBM PUMP POSITION ANN-1361 ALARM STATUS**

WINDOW #	WINDOW TEXT	STATUS
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
8-2	SBM SLUICE PUMP P-0621 PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621)	OFF

5.1.5 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 (ZSL/ZSH-0621A) reading (located on IE-0621).

## 5.1 WINCH ASSEMBLY W-0621 (Cont.)

NOTE - Immersible pump Upper (ZSH-0621A) and Lower (ZSL-0621A) position switches can be adjusted at SBM SLUICE PUMP POSITION indicator ZI-0621.

5.1.6 SET Upper position switch ZSH-0621A to 5 inches.

5.1.7 RECORD the following:

5.1.7.1 ZSH-0621A SET to 5 inches.

5.1.7.2 WINCH UPPER LIMIT light ZLH-0621 ON.

5.1.8 SET Lower position switch ZSL-0621A to 25 inches.

5.1.9 RECORD the following:

5.1.9.1 ZSL-0621A SET to 25 inches.

5.1.9.2 WINCH LOWER LIMIT light ZLL-0621 OFF.

5.1.10 IF OFF, PRESS to test the following lights:

- RAISE light YL-0626A.
- STOP light YL-0626B.
- LOWER light YL-0626C.

THEN RECORD.

Verify Winch W-0621 Operation

~~5.1.11 MONITOR Winch movement with temporary in tank camera while performing steps 5.1.12 through 5.1.22.~~

5.1.12 POSITION AND HOLD Winch RAISE/STOP/LOWER switch HS-0626 to LOWER.

5.1.13 RECORD the following:

5.1.13.1 HS-0626 position.

5.1.13.2 LOWER light YL-0626C ON.

5.1.13.3 STOP light YL-0626B OFF.

5.1.14 MONITOR ZI-0621,  
WHEN ZI-0621 indicates approximately 15 inches,  
THEN RELEASE HS-0626.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	22 of 75

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

- 5.1.15 **RECORD** the following:
- 5.1.15.1 HS-0626 position.
  - 5.1.15.2 LOWER light YL-0626C OFF.
  - 5.1.15.3 STOP light YL-0626B ON.
  - 5.1.15.4 WINCH UPPER LIMIT light ZLH-0621 OFF.
  - 5.1.15.5 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) OFF.
- 5.1.16 **POSITION AND HOLD** switch HS-0626 to LOWER.
- 5.1.17 **RECORD** the following:
- 5.1.17.1 HS-0626 position.
  - 5.1.17.2 LOWER light YL-0626C ON.
  - 5.1.17.3 STOP light YL-0626B OFF.
- 5.1.18 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 30 inches, **RELEASE** HS-0626.
- 5.1.19 **RECORD** the following:
- 5.1.19.1 HS-0626 position.
  - 5.1.19.2 LOWER light YL-0626C OFF.
  - 5.1.19.3 STOP light YL-0626B ON.
  - 5.1.19.4 WINCH LOWER LIMIT light ZLL-0621 ON.
- 5.1.20 **POSITION AND HOLD** switch HS-0626 to RAISE.
- 5.1.21 **RECORD** the following:
- 5.1.21.1 HS-0626 position.
  - 5.1.21.2 RAISE light YL-0626A ON.
  - 5.1.21.3 STOP light YL-0626B OFF.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	23 of 75

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

- 5.1.22 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 0 inches, **RELEASE**  
switch HS-0626 **AND**,

**RECORD** the following:

- 5.1.22.1 ZI-0621 indicated position.
- 5.1.22.2 RAISE light YL-0626A OFF.
- 5.1.22.3 STOP light YL-0626B ON.
- 5.1.22.4 WINCH UPPER LIMIT light ZLH-0621 ON.
- 5.1.22.5 WINCH LOWER LIMIT light ZLL-0621 OFF.
- 5.1.22.6 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621  
PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) ON.
- 5.1.22.7 ANN-0621 alarm Window # 8-2 SBM SLUICE PUMP P-0621  
PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621) OFF.
- 5.1.22.8 Alarm Horn XA-0621 SOUNDING.

~~NOTE — At this point the in tank video imaging system is not  
required and may be shut off at the Test Directors  
discretion.~~

- 5.1.23 **POSITION** ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
breaker WINCH STARTER (480 VAC) W-0621 to OFF **AND**,
- INSTALL** Administrative Lock.
- 5.1.24 **RECORD** breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
WINCH STARTER position.
- 5.1.25 **RECORD** the following:
- 5.1.25.1 Test Director Section 5.1 complete.
  - 5.1.25.2 Quality Control Inspector **VERIFY** Section 5.1  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	24 of 75

## 5.2 IMMERSIBLE SLUICE PUMP P-0621

**CAUTION**

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

**Preparation/Initial Checks**

- 5.2.1 **ENSURE** Administrative Locks are on the following breaker and disconnect **AND**,

**RECORD:**

- 5.2.1.1 ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.
- 5.2.1.2 VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.
- 5.2.2 **REMOVE** Administrative Lock from ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC) **AND**,
- POSITION** breaker to ON.
- 5.2.3 **IF OFF, PRESS** to test the following indicator lights **RELEASE** test button **AND**,

**RECORD** the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 3.

**TABLE 3 - SLUICE SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	25 of 75

**5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)**

5.2.4 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 reading (located on IE-0621).

5.2.5 RECORD ANN-0621 alarm status per Table 4.

**TABLE 4 - SLUICE SBM PUMP ANN-0621 ALARM STATUS**

WINDOW #	WINDOW TEXT	STATUS
1-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0621)	OFF
2-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0621)	OFF
5-1	SBM SLUICE PUMP P-0621 MOTOR CURRENT HIGH (IAH-0621)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	ON
6-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON

## 5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)

Page A2-27

5.2.6 RECORD the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51):

5.2.6.1 PISL-0621

5.2.6.2 TISH-0621

5.2.6.3 TISHH-0621

5.2.6.4 TISH-0622A

5.2.6.5 IISH-0621A

Verify Pump Operation

NOTE - Annunciator ANN-0621, Window 5-1, SBM SLUICE PUMP MOTOR CURRENT HIGH (IAH-0621) will alarm each time Immersible Sluice Pump P-0621 is started.

5.2.7 ENSURE LOCAL REMOTE switch HS-0635 selected to LOCAL (located on IMMERSIBLE PUMP P-0621 SOFT STARTER) AND,

RECORD HS-0635 position.

5.2.8 IF OFF, PRESS to check the following lights, RELEASE test button AND,

CHECK the light status:

- LOCAL light YL-0635A ON.
- REMOTE light YL-0635B OFF.
- MOTOR RUN light YL-0621A OFF.
- MOTOR STOP light YL-0621B ON.

THEN RECORD.

5.2.9 CHECK Annunciator ANN-0621, Window 7-1, SBM SLUICE PUMP P-0621 MOTOR CASE LEAK DETECTOR (LDA-0621) OFF

5.2.10 ROTATE and RELEASE START STOP switch HS-0621A to START.

5.2.11 RECORD the following:

5.2.11.1 HS-0621A ROTATED to START.

5.2.11.2 MOTOR RUN light YL-0621A ON.

5.2.11.3 MOTOR STOP light YL-0621B OFF.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	27 of 75

**5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)**

- 5.2.12 **OBSERVE** IISH-0621A (located on IE-0621),  
**WHEN** current reading has stabilized,  
  
**RECORD** pump current.
- 5.2.13 **ROTATE** and **RELEASE** START STOP switch HS-0621A to STOP.
- 5.2.14 **RECORD** the following:
- 5.2.14.1 HS-0621A ROTATED to STOP.
- 5.2.14.2 MOTOR RUN light YL-0621A OFF.
- 5.2.14.3 MOTOR STOP light YL-0621B ON.
- 5.2.15 **POSITION** breaker ELECTRICAL EQUIPMENT SKID GROUP  
CONTROLLER, IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC)  
to OFF **AND**,  
  
**INSTALL** Administrative Lock.
- 5.2.16 **RECORD** breaker ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER,  
IMMERSIBLE PUMP P-0621 position.
- 5.2.17 **RECORD** the following:
- 5.2.17.1 Test Director Section 5.2 complete.
- 5.2.17.2 Quality Control Inspector **VERIFY** Section 5.2  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	28 of 75

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM**Preparation/Initial Checks

- 5.3.1 ENSURE valve HV-06221 OPEN (located on Nitrogen Gas Control Panel).
- 5.3.2 CHECK Nitrogen Gas Bottles are in place and connected to the manifold at the Nitrogen Gas Bottle Station.
- 5.3.3 ENSURE all Nitrogen bottle valves are CLOSED.
- 5.3.4 RECORD ANN-0621 Window 4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) ON.

Slurry Booster Pump P-0622 Seal Gas Purge

- 5.3.5 CHECK nitrogen manifold valves are closed,
- 5.3.6 SLOWLY OPEN nitrogen bottle valve on right side nitrogen bottle.
- 5.3.7 OPEN nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.8 ENSURE PCV-06221 set at 325 (320 to 330) psig as indicated by the integral output pressure gauge (left gauge) AND,

**RECORD:**

- 5.3.8.1 PCV-06221 integral output pressure (left gauge).
- 5.3.8.2 PCV-06221 inlet pressure (right gauge).
- 5.3.8.3 PI-06220 right hand bottle pressure.
- 5.3.9 OPEN nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.10 CLOSE nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.11 RECORD the following:
  - 5.3.11.1 PCV-06221 integral output pressure (left gauge).
  - 5.3.11.2 PCV-06221 inlet pressure (right gauge).
  - 5.3.11.3 PI-06221 middle bottle pressure.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 2	6/1/98	29 of 75

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM (Cont.)**

- 5.3.12 **OPEN** nitrogen bottle header manifold isolation valve for left side nitrogen bottle.
- 5.3.13 **CLOSE** nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.14 **RECORD** the following:
- 5.3.14.1 PCV-06221 integral output pressure (left gauge).
- 5.3.14.2 PCV-06221 inlet pressure (right gauge).
- 5.3.14.3 PI-06222 left bottle pressure.
- 5.3.15 **ENSURE** PCV-06222 set to 165 (165 to 175) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** the following:
- 5.3.15.1 PI-06223 Pressure.
- 5.3.15.2 FI-06221 indicates less than 10%.
- 5.3.15.3 ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) OFF.
- 5.3.16 **ENSURE** PCV-06222 set to 50 (50 to 55) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** set pressure.
- 5.3.17 **CHECK** the FI-06221 indicates less than 10% **AND**,
- RECORD** indicated % flow.
- 5.3.18 **RESET** Annunciator ANN-0621.
- 5.3.19 **RECORD** ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) ON.
- 5.3.20 **RECORD** the following:
- 5.3.20.1 Test Director Section 5.3 complete.
- 5.3.20.2 Quality Control Inspector **VERIFY** Section 5.3 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	30 of 75

## 5.4 SLUICE BOOSTER PUMP P-0622

**CAUTION**

Booster Pump P-0622 must not be started without Nitrogen Purge System Operating (see section 5.3). In addition, continuous operating time should be kept to a minimum (<30 minutes) and speed should be kept over 1500 RPM.

Preparation/Initial Checks

- 5.4.1 **ENSURE** Sluice Booster Pump Nitrogen Purge System is in operation per Section 5.3.
- 5.4.2 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51) **AND**,
- INSTALL** Lock and Tag:
- CK 10 OPER STATION RCPT, OFF
  - CK 12 OPER STATION IE-0621, OFF
- 5.4.3 Responsible Craft **PERFORM AND RECORD** the following to bypass Immersible Sluice Pump P-0621 discharge pressure interlock PISL-0621 (located in IE-0621 on back of (PISL-0621):
- 5.4.3.1 **DISCONNECT** PISL-0621 per FIGURE 1:
- 5.4.3.2 **CONNECT** pressure simulator per FIGURE 1.
- 5.4.4 **REMOVE** Lock and Tag **AND**,
- POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
- CK 10 OPER STATION RCPT, ON
  - CK 12 OPER STATION IE-0621, ON
- 5.4.5 **ADJUST** pressure simulator until PISL-0621 indicates a minimum of 50 psig **AND**,
- RECORD.**

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	31 of 75

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

**WARNING**

Removing shield plug may cause changes in tank pressure and activate tank pressurization alarms.

- 5.4.6 NOTIFY 702-AZ operator AND Computer Automated Surveillance System operator of potential alarm activation prior to the removal of tape or plug from 241-AY-02E winch vent.

*N/A performed this section on Red A-1. N/A for Red A-3 only performing section 4*  
 Test Director Initial \_\_\_\_\_ Date \_\_\_\_\_

NOTE - Winch vent is currently covered with tape for AY-102 ventilation in-leakage control.

- 5.4.7 ENSURE Sluice Pit 241-AY-02E winch vent is clear (free of plug, or tape).

- 5.4.8 ENSURE Administrative Locks are on the following breakers AND,

**RECORD:**

- 5.4.8.1 ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.
- 5.4.8.2 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.4.9 REMOVE Administrative Lock from VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH AND,

POSITION disconnect to ON.

THEN RECORD.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	32 of 75

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

5.4.10 IF OFF, PRESS to test the following indicator lights, RELEASE test button AND,

RECORD the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 5.

**TABLE 5 - SLUICE SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATIONS LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATIONS LIQUID LEVEL HIGH	OFF

5.4.11 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 reading (located on IE-0621).

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

5.4.12 RECORD ANN-0621 alarm status per Table 6.

TABLE 6 - PUMP ANN-0621 ALARM STATUS

WINDOW #	WINDOW TEXT	STATUS
1-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0629)	OFF
2-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0629)	OFF
3-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #2 TEMP HIGH (TAH-06210B)	OFF
4-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #1 TEMP HIGH (TAH-06210A)	OFF
4-3	TANK 241-AY-102 BSTR PUMP SEAL GAS TROUBLE (XA-06221)	ON
5-2	SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-2	SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622)	ON
6-4	SBM PMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
7-2	SLUICE BOOSTER PUMP P-0622 VSD TROUBLE (XA-0622)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	OFF

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	34 of 75

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

- 5.4.13 **RECORD** the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51 and VARIABLE SPEED DRIVE P-0622 CONTROL PANEL C):
- 5.4.13.1 PISL-0622
  - 5.4.13.2 TI-06210A
  - 5.4.13.3 TI-06210B
  - 5.4.13.4 TI-0629
  - 5.4.13.5 II-0622
  - 5.4.13.6 EI-0621
- 5.4.14 **PRESS** FAULT RESET HS-0625.
- 5.4.15 **CHECK** that the keypad display on Control Panel A indicates "No Errors", **THEN** displays "RDY".
- 5.4.16 **ENSURE** COAST/STOP button HS-0624C RETRACTED.
- 5.4.17 **IF** OFF, **PRESS** to check the following lights, **RELEASE** test button **AND**,
- CHECK** the following:
- POWER ON light YL-0622 ON.
  - FAULT light YL-0625 OFF.
  - PUMP RUNNING light YL-0624A OFF
  - PUMP STOPPED light YL-0624B ON.
- THEN RECORD.**

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	35 of 75

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**Pump Operation STOP Switch Shutdown

NOTE - Annunciator ANN-0621, Window 5-2, SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622) will alarm each time Sluice Booster Pump P-0622 is started.

- 5.4.18 SET speed controller SC-0621 to 0% **AND**,  
**RECORD**.
- 5.4.19 ENSURE personnel are clear of Pit 241-AY-02E.
- 5.4.20 PRESS START switch HS-0624A.
- 5.4.21 RECORD the following:
  - 5.4.21.1 HS-0624A PRESSED to START.
  - 5.4.21.2 PUMP RUNNING light YL-0624A ON.
  - 5.4.21.3 PUMP STOPPED light YL-0624B OFF.
- 5.4.22 RECORD readings from the following indicators.
  - 5.4.22.1 IISH-0622.
  - 5.4.22.2 II-0622.
  - 5.4.22.3 EI-0621.
  - 5.4.22.4 SI-0621.
- 5.4.23 ADJUST speed controller SC-0621 to 100%.
- 5.4.24 RECORD the following:
  - 5.4.24.1 SC-0621 setting.
  - 5.4.24.2 IISH-0622.
  - 5.4.24.3 II-0622.
  - 5.4.24.4 EI-0621.
  - 5.4.24.5 SI-0621.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	36 of 75

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

NOTE - The Booster Pump will ramp down and then stop when the STOP switch is pushed.

5.4.25 **PRESS** STOP switch HS-0624B.

5.4.26 **RECORD** the following:

5.4.26.1 HS-0624B PRESSED to STOP.

5.4.26.2 PUMP RUNNING light YL-0624A OFF.

5.4.26.3 PUMP STOPPED light YL-0624B ON.

**Pump Operation COAST/STOP Button Shutdown**

5.4.27 **ENSURE** personnel are clear of Pit 241-AV-02E.

5.4.28 **PRESS** FAULT RESET HS-0625.

5.4.29 **PRESS** START switch HS-0624A.

5.4.30 **RECORD** the following:

5.4.30.1 HS-0624A PRESSED to START.

5.4.30.2 PUMP RUNNING light YL-0624A ON.

5.4.30.3 PUMP STOPPED light YL-0624B OFF.

5.4.31 **PRESS** COAST/STOP button HS-0624C to FULLY INSERTED.

5.4.32 **RECORD** the following:

5.4.32.1 HS-0624C position.

5.4.32.2 PUMP RUNNING light YL-0624A OFF.

5.4.32.3 PUMP STOPPED light YL-0624B ON.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	37 of 75

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

Verify Pump Low Suction Pressure Interlock

- 5.4.33 POSITION COAST/STOP button HS-0624C to FULLY RETRACTED AND,  
RECORD.
- 5.4.34 ENSURE personnel are clear of Pit 241-AY-02E.
- 5.4.35 PRESS FAULT RESET HS-0625.
- 5.4.36 PRESS START switch HS-0624A.
- 5.4.37 RECORD the following:
- 5.4.37.1 HS-0624A PRESSED to START.
- 5.4.37.2 PUMP RUNNING light YL-0624A ON.
- 5.4.37.3 PUMP STOPPED light YL-0624B OFF.
- 5.4.38 SLOWLY DECREASE pressure simulator setting.  
UNTIL PUMP RUNNING light YL-0624A indicates OFF.
- 5.4.39 RECORD the following:
- 5.4.39.1 PISL-0621 pressure.
- 5.4.39.2 PUMP RUNNING light YL-0624A OFF.
- 5.4.39.3 PUMP STOPPED light YL-0624B ON.
- 5.4.39.4 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621), ON.
- 5.4.40 POSITION VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH to OFF AND,  
INSTALL Administrative Lock.
- 5.4.41 RECORD VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH position.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	38 of 75

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

5.4.42 Responsible Craft **PERFORM** the following to P-0622 suction pressure interlock:

5.4.42.1 **ENSURE** the following breakers OFF, and Locked and Tagged.

- CK 10 OPER STATION RCPT, OFF
- CK 12 OPER STATION IE-0621, OFF

5.4.42.2 **DISCONNECT** pressure simulator per FIGURE 1 **AND**,  
**RECORD**.

5.4.42.3 **CONNECT** PISL-0621 leads per FIGURE 1 **AND**,  
**RECORD**.

5.4.42.4 **REMOVE** the Lock and Tag from the following breakers **AND POSITION** as follows:

- CK 10 OPER STATION RCPT, ON
- CK 12 OPER STATION IE-0621, ON

5.4.43 **RECORD** the following:

5.4.43.1 Test Director Section 5.4 complete.

5.4.43.2 Quality Control Inspector **VERIFY** Section 5.4 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	39 of 75

**5.5 SLUICER S-1361**Preparation/Initial Checks

- 5.5.1 **CHECK** fluid level in hydraulic reservoir (located at SHC-1361).
- 5.5.2 **IF** reservoir is less than 1/2 full, **REQUEST** Responsible Craft **FILL** reservoir to 1/2 full.
- 5.5.3 **ENSURE** breaker MCC-N1 1FB SLUICER HYDRAULIC POWER UNIT ON (located in 241-C-51).
- 5.5.4 **RECORD** the following (located at CB-01 in M0211):
  - 5.5.4.1 Sluicer Pump OFF light YL-13613B ON.
  - 5.5.4.2 Sluicer Pump ON light YL-13613A OFF.
  - 5.5.4.3 Sluicer TILT OFF light YL-13615B ON.
  - 5.5.4.4 Sluicer TILT ON light YL-13615A OFF.
- 5.5.5 **POSITION** SLUICER PAN AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.6 **RECORD** the following:
  - 5.5.6.1 HS-13614 position
  - 5.5.6.2 MAN light YL-13614B ON
  - 5.5.6.3 AUTO light YL-13614A OFF.
- 5.5.7 **REQUEST** Surveillance Operator **ALIGN** the 241-C-106 in-tank video imaging system per TO-320-011, "Operate C-106 In-Tank Imaging system" to view the sluicer **AND BEGIN RECORDING**.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A 2	6/1/98	40 of 75

## 5.5 SLUICER S-1361 (Cont.)

Sluicer Operation - Manual Pan Control

NOTE - Each movement of the sluicer nozzle should be checked with the in-tank video imaging system.

5.5.8 POSITION SLUICER SYSTEM ON/OFF switch HS-13613 to ON.

5.5.9 RECORD the following:

5.5.9.1 HS-13613 position

5.5.9.2 Sluicer Pump ON light YL-13613A ON

5.5.9.3 Sluicer Pump OFF light YL-13613B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.10 BUMP joystick ZC-1361 to right and left AND,

RECORD sluicer nozzle responded accordingly via in-tank video imaging system.

5.5.11 POSITION joystick ZC-1361 to the right AND,

RECORD reading on position indicator ZI-13614 INCREASES.

5.5.12 RELEASE joystick ZC-1361 AND,

RECORD ZI-13614 maintains reading.

5.5.13 POSITION joystick ZC-1361 to the left AND,

RECORD reading on position indicator ZI-13614 DECREASES.

5.5.14 RELEASE joystick ZC-1361 AND,

RECORD ZI-13614 maintains reading.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	41 of 75

## 5.5 SLUICER S-1361 (Cont.)

Sluicer Operation - Tilt Control

5.5.15 POSITION SLUICER TILT CONTROL ON/OFF switch HS-1364 to ON.

5.5.16 RECORD the following:

5.5.16.1 HS-1364 position

5.5.16.2 TILT ON light YL-13615A ON

5.5.16.3 TILT OFF light YL-13615B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.17 BUMP joystick ZC-1361 up and down AND,

RECORD sluicer nozzle responded accordingly via in-tank video imaging system.

5.5.18 POSITION Joystick ZC-1361 down (pushed forward) until ZI-13613 indicates -40 ° AND,

RECORD ZI-13613 reading.

5.5.19 RELEASE joystick ZC-1361 AND,

RECORD ZI-13613 maintains reading.

5.5.20 POSITION Joystick ZC-1361 upward (pulled back) until ZI-13613 indicates 90 ° AND,

RECORD ZI-13613 reading.

5.5.21 RELEASE joystick ZC-1361 AND,

RECORD ZI-13613 maintains reading.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	42 of 75

**5.5 SLUICER S-1361 (Cont.)****Sluicer Operation - Automatic Pan Control**

- NOTE - Sluicer pan left and right limit switches (ZS-13614L and ZS-13614R) can be manually adjusted at SLUICER PAN POSITION indicator ZI-13614.
- 5.5.22 SET sluicer pan left limit switch ZS-13614L to - 90° AND, RECORD.
- 5.5.23 SET sluicer pan right limit switch ZS-13614R to 90° AND, RECORD.
- 5.5.24 POSITION SLUICER PAN AUTO/MANUAL switch HS-13614 to AUTO.
- 5.5.25 RECORD the following:
- 5.5.25.1 HS-13614 position
  - 5.5.25.2 MAN light YL-13614B OFF.
  - 5.5.25.3 AUTO light YL-13614A ON.
- 5.5.26 MONITOR ZI-13614 AND, RECORD ZI-13614 indicates a continuous sweep from -90° to 90°.
- 5.5.27 CHECK via in-tank video imaging system that the sluicer is rotating.
- 5.5.28 POSITION SLUICER AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.29 RECORD the following:
- 5.5.29.1 HS-13614 position
  - 5.5.29.2 MAN light YL-13614B ON.
  - 5.5.29.3 AUTO light YL-13614A OFF.
- 5.5.30 CHECK via in-tank video imaging system that the sluicer has stopped rotating.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	43 of 75

## 5.5 SLUICER S-1361 (Cont.)

NOTE - At this point the in-tank video imaging system is not required and may be shut off at the Test Directors discretion.

5.5.31 POSITION SLUICER TILT CONTROL ON/OFF switch HS-1364 to OFF.

5.5.32 CHECK the following:

- TILT ON light YL-13615A OFF.
- TILT OFF light YL-13615B ON.

THEN RECORD.

5.5.33 POSITION SLUICER HYDRAULIC SYSTEM ON/OFF switch HS-13613 to OFF.

5.5.34 CHECK the following:

- Sluicer Pump ON light YL-13613A OFF.
- Sluicer Pump OFF light YL-13613B ON.

THEN RECORD.

5.5.35 OPEN breaker MCC-N1 A1A SLUICER HYDRAULIC UNIT POWER.

5.5.36 RECORD the following:

5.5.36.1 Test Director Section 5.5 complete.

5.5.36.2 Quality Control Inspector VERIFY Section 5.5 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	44 of 75

## 5.6 SLUICE PIT 241-AY-02E CHILLER

HNF-3057, Rev.0

Page A2-45

Preparation/Initial Checks

- 5.6.1 ENSURE PIT-02E COOLER FEEDER BRKR (480 VAC), OFF.
- 5.6.2 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.

**WARNING**

A Zero Energy Check is required when opening R-0621 MAIN ELECTRICAL CONTROL BOX.

- 5.6.3 ENSURE the following equipment circuit breakers in AUTO (located at Pit Chiller R-0621 MAIN ELECTRICAL CONTROL BOX) .
- Comp
  - Fan L
  - Fan H
  - S.P.
  - By-P
- 5.6.4 ENSURE the following Chiller control panel switches are in OFF (NOT ILLUMINATED) (located on chiller control panel):
- COMPRESSOR ON
  - SYSTEM PUMP ON
  - BY-PASS PUMP ON
- 5.6.5 CHECK Pit Chiller chilled water storage tank level is approximately 2 inches from top of tank (sight glass located on side of tank) as follows:
- 5.6.5.1 ENSURE the following valves OPEN:
- UPPER sight glass isolation valve
  - LOWER sight glass isolation valve
- 5.6.5.2 CHECK sight glass level (LG-0621)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	45 of 75

**5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)**

5.6.5.3 IF chilled water storage tank level is greater than 2 inches from top of tank, ADD 46% glycol solution (freeze protection to - 20 ° F) to tank as follows:

- A. ENSURE PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
- B. SLOWLY REMOVE fill cap and air eliminator
- C. ADD glycol solution UNTIL sightglass indicates approximately 2 inches from top of tank.
- D. INSTALL fill cap and air eliminator.

5.6.5.4 IF chilled water storage tank level is less than 1 inch from top of tank, REMOVE glycol solution from tank as follows:

- A. ENSURE PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
- B. SLOWLY REMOVE fill cap and air eliminator
- C. OBTAIN a small portable pump AND PUMP glycol solution into a suitable sized container UNTIL sightglass indicates approximately 2 inches from top of tank.
- D. INSTALL fill cap and air eliminator.

5.6.6 ENSURE the following valves CLOSED:

- HV-0622
- HV-0623

5.6.7 ENSURE "supply valve" from chiller storage tank to system and Bypass pump OPEN.

5.6.8 ENSURE PIT-02E COOLER FEEDER BRKR (480 VAC), ON.

5.6.9 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to OFF

5.6.10 INSTALL Personal Locking Device

5.6.11 In Pit Chiller Control Panel R-0621, and on the rear of TIC-06213, DISCONNECT TE-06213 lead wires from terminals 6, 7, AND 8.

5.6.12 CONNECT RTD simulator, set at 85° F, to terminals 6, 7, AND 8.

5.6.13 REMOVE Personal Locking Device

5.6.14 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.

817-63-02-010  
Dec 3-4-99  
111.68 Ω

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	46 of 75

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

5.6.15 RECORD reading from temperature controller TIC-06213.

**CAUTION**

To prevent equipment damage the power to this cooler must be on for 4 hours before the cooler is started.

Chiller Operation

5.6.16 POSITION FSC-1 to 1200 FT<sup>3</sup>/MIN.

5.6.17 POSITION BY-PASS PUMP ON switch to ON.

5.6.18 CHECK BY-PASS PUMP ON light switch ILLUMINATED.

5.6.19 POSITION COMPRESSOR ON switch to ON.

~~5.6.20 ADJUST RTD simulator until TIC-06213 reads 100° F.~~

5.6.21 ~~CHECK~~VERIFY COMPRESSOR ON light switch ILLUMINATES at ~~90° F on TIC-06213.~~

~~5.6.22 RECORD TIC-06213 indication when compressor starts.~~

5.6.23 MONITOR TI-0621A (temperature of water out of chiller). WHEN it reads approximately 60°F PERFORM the following:

5.6.23.1 RECORD the following:

~~A. Reading from temperature controller TIC-06213 and TIME and DATE~~

B. TI-0621A (temperature of water out of chiller, located at WATER CHILLER UNIT R-0621).

C. TI-0621B (temperature of water into chiller, located at WATER CHILLER UNIT R-0621).

D. Annunciator ANN-0621, Window 7-3, SLUICE PIT 02E PIT TEMP HIGH (TAH-06213) status

5.6.23.2 OPEN valve HV-0623

5.6.23.3 OPEN valve HV-0622

5.6.23.4 POSITION SYSTEM PUMP ON switch to ON.

5.6.23.5 CHECK SYSTEM PUMP ON light switch ILLUMINATED.

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

~~NOTE~~ — The length of time it will take to observe a decrease in the pit 241 AY 02E temperature will vary significantly depending on the ambient air temperature and initial pit temperature.

~~5.6.24~~ — ~~MONITOR~~ pit temperature decreases as indicated on TIC 06213.

~~5.6.25~~ — ~~WHEN~~ TIC 06213 indicates approximately 2 °F less than the value recorded in step 5.6.23.1.A, ~~RECORD~~ the following:

~~5.6.25.1~~ Reading from temperature controller TIC 06213 and TIME and DATE

~~5.6.25.2~~ TI 0621A (temperature of water out of chiller, located at WATER CHILLER UNIT R 0621)

~~5.6.25.3~~ TI 0621B (temperature of water into chiller, located at WATER CHILLER UNIT R 0621)

~~5.6.25.4~~ Annunciator ANN 0621, Window 7 3, SLUICE PIT 02E PIT TEMP HIGH (TAH 06213) status

5.6.26 ADJUST RTD simulator to 85° F on TIC-06213

5.6.27 VERIFY COMPRESSOR ON light goes OFF at -90° F

5.6.28 RECORD TIC-06213 indication when compressor shuts down

5.6.29 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to OFF

5.6.30 INSTALL Personal Locking Device

5.6.31 In Pit Chiller Control Panel R-0621, and on the rear of TIC-06213, DISCONNECT RTD simulator from terminals 6, 7, AND 8.

5.6.32 CONNECT TE-06213 lead wires to terminals 6, 7, AND 8.

5.6.33 REMOVE Personal Locking Device

5.6.34 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.

5.6.35 RECORD that TE-06213 leads wires have been re-connected.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	48 of 75

**5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)**

- 5.6.36 **SHUT DOWN** the pit chiller as follows:
- 5.6.36.1 **POSITION** SYSTEM PUMP ON switch to OFF.
  - 5.6.36.2 **VERIFY** SYSTEM PUMP ON switch light OFF.
  - 5.6.36.3 **CLOSE** valve HV-0622.
  - 5.6.36.4 **CLOSE** valve HV-0623.
  - 5.6.36.5 **POSITION** COMPRESSOR ON switch to OFF.
  - 5.6.36.6 **VERIFY** COMPRESSOR ON switch light OFF.
  - 5.6.36.7 **POSITION** BY-PASS PUMP ON switch to OFF.
  - 5.6.36.8 **VERIFY** BY-PASS PUMP ON switch light OFF.
  - 5.6.36.9 **POSITION** PIT-02E COOLER DISCONNECT (480 VAC) to OFF.
  - 5.6.36.10 **POSITION** ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, PIT 02E CHILLER FEEDER BRKR to OFF.
- 5.6.37 **RECORD** the following:
- 5.6.37.1 Test Director Section 5.6 complete.
  - 5.6.37.2 Quality Control Inspector **VERIFY** Section 5.6 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	49 of 75

**5.7 VERIFY VALVE HV-0625 OPERATION**

- 5.7.1 **REQUEST** Surveillance Operator **ALIGN** the following cameras for viewing water addition activities:
- Tank 241-C-106 in-tank video imaging system per T0-320-011, "Operate C-106 In-Tank Imaging System".
  - Temporary camera in Sluice Pit 241-AY-02E CAMERA PORT #1 per Job Control System Work Package.
  - Tank 241-AY-102 temporary in-tank video imaging system per Job Control System Work Package.
  - Temporary camera in Sluice Pit 241-C-06C CAMERA PORT per Job Control System Work Package.
- 5.7.2 **ENSURE** HV-13611 (Supernate Line SN-200-M9 Encasement Drain, located in Sluice Pit 241-C-06C) positioned to OPER.
- 5.7.3 **MONITOR** the following while performing step 5.7.4 below **AND RECORD**:
- 5.7.3.1 Sluice Pit 241-AY-02E for leakage from flush jumper and transfer line nozzles U2 and A.
- 5.7.3.2 Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to sluicer.
- 5.7.3.3 Flow through Sluicer S-1361 into TANK 241-C-106 with HV-0625 CLOSED.
- 5.7.3.4 Indication of flow into TANK 241-AY-102 through Immersible Pump P-0621 suction (and possibly anti-syphon holes) with HV-0625 OPEN.
- NOTE - The following readings are located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51.
- The indicators must be checked when flow is routed to TK-241-AY-102.
- 5.7.3.5 PISL-0621
- 5.7.3.6 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRES LOW (PAL-0621) status.
- 5.7.3.7 PISL-0622

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 2	6/1/98	50 of 75

**5.7 VERIFY VALVE HV-0625 OPERATION (Cont.)**

- 5.7.3.8 Annunciator ANN-0621, Window 6-2, SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622) status.
- 5.7.3.9 FQI-0621
- 5.7.3.10 FI-0621
- 5.7.3.11 ZLH-0625 ON when HV-0625 OPEN (ZLL-0625 OFF).
- 5.7.3.12 ZLL-0625 ON when HV-0625 CLOSED (ZLH-0625 OFF).
- 5.7.4 **FLUSH** Supernate Line SL-200,  
**AND CYCLE** valve HV-0625 per TO-320-014 "WRSS Transfer Line Flushing.
- 5.7.5 **RECORD** the following:
  - 5.7.5.1 Test Director Section 5.7 complete.
  - 5.7.5.2 Quality Control Inspector **VERIFY** Section 5.7 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-2	6/1/98	51 of 75

## 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS

### 5.8.1 PERFORM AND RECORD the following:

- 5.8.1.1 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
- A. CK 10 OPER STATION RCPT, OFF
  - B. CK 12 OPER STATION IE-0621, OFF
- 5.8.1.2 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621, OFF, **AND** Administrative Lock installed.
- 5.8.1.3 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC), OFF, **AND** Administrative Lock installed.
- 5.8.1.4 **ENSURE** VARIABLE SPEED DRIVE P-0622, PANEL B, INLINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH, OFF, **AND** Administrative Lock installed.
- 5.8.1.5 **CLOSE** nitrogen bottle valve opened in Section 5.3 step 5.3.5.
- 5.8.1.6 **INSTALL** Sluice Pit 241-AY-02E winch vent plug per Shift Managers instruction.
- 5.8.1.7 Test Director Section 5.8 complete.
- 5.8.1.8 Quality Control Inspector **VERIFY** Section 5.8 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	52 of 75

5.9 TEST CLOSURE

5.9.1 QUALITY CONTROL: REVIEW all Attachments for completeness, legibility, and accuracy.

(QC)

QUALITY CONTROL SIGNATURE/DATE: W. Adams 17/17/98

5.9.2 Listed reviewers SIGN below indicating all acceptance criteria has been met and that the installed WRSS Slurry Transfer System is functional and ready for operational use.

TEST DIRECTOR:	<i>J. S. Anderson</i>	DATE:	<i>7/17/98</i>
COG ENGINEER:	<i>Randy L. Parnell*</i>	DATE:	<i>07/17/98</i>
DST SHIFT MANAGER:	<i>① N/A</i>	DATE:	

\* CONCURRENCE WITH J.R. BELLEMY per telecon RSP  
~~with~~  
~~with~~

① Test Director is qualified DST Shift Manager

## ATTACHMENT 1 - OTP-320-003 TEST LOG

HNF-3057, Rev.0

Page A2-54

OTP-320-003		Page: <u>1</u> of <u>2</u>
TIME/DATE	DESCRIPTION	
0800/6/2/98	Conducted pre-job for section 5.1	
0900/6/2/98	Completed section 5.1 with no exceptions. Cleared exception # 6. It was noted during the test that the indicator, ZI-0621, was very sensitive to any type of bumping. Test Engineer noted gauge is liquid filled.	
0915/6/3/98	Conducted pre-job for section 5.6.	
0950/6/3/98	Installed RTD simulator and re-energized chiller. Will wait 4 hours prior to recommencing test.	
1400 0930 / 6/3/98	After 4 hour wait, started into section 5.6. Chiller started after LO/HI pressure reset switch was <sup>reset</sup> tripped. System cooled down in recirc mode to $\approx 75^{\circ}\text{F}$ and then compressor and fan shut off. Will troubleshoot to determine reason for shutdown.	
0800/6/11/98	Conducted pre-job for troubleshooting and testing of section 5.6. (Pit Chiller)	
1010/6/11/98	Continued troubleshooting chiller. Determined procedure modification is needed prior to continuing with test. Procedure needs to be modified to incorporate info on setting of temperature switch in the Pit Chiller Main Electrical Control Box. It <del>was</del> was	

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	54 of 75

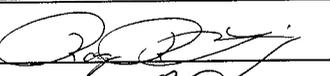
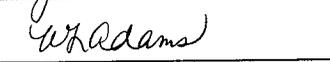


**This page left intentionally blank**

ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG

HNF-3057, Rev.0  
Page A2-56

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall complete a log entry.

NAME (PRINT)	SIGNATURE	INITIALS
ROGER R FRIESEN		RF
Michael C. Wingfield		MW
ED F. ENCOLE POH-AI		EF
JE Andrews		JEA
WL Adams		WLA

**ATTACHMENT 4 - OTP-320-003 DATA SHEET**

DATE OF TEST:			RECORD	
STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.1 WINCH ASSEMBLY W-0621</b>				
<b>Preparation/Initial Checks</b>				
5.1.1.1	P-0621 BREAKER	LOCKED OFF	Locked OFF	JG
5.1.1.2	P-0622 DISCONNECT	LOCKED OFF	Locked OFF	JG
5.1.2	ADMIN LOCKS REMOVED	YES	Yes	JG
5.1.3	TABLE 1 STATUS CORRECT	YES	Yes	JG
5.1.4	TABLE 2 STATUS CORRECT	YES	Yes	JG
* 5.1.5	ZI-0621 INDICATION	0 to 2.5 INCHES	2.5 inches	JG
5.1.7.1	ZSH-0621A SET	5 INCHES	5 inches	JG
5.1.7.2	ZLH-0621 INDICATION	ON	ON	JG
5.1.9.1	ZSL-0621A SET	25 INCHES	25 inches	JG
5.1.9.2	ZLL-0621 INDICATION	OFF	OFF	JG
5.1.10	LIGHT TEST	3 LIGHTS FUNCTION	3 Lights function	JG
<b>Verify Winch W-0621 Operation</b>				
5.1.13.1	HS-0626 POSITION	LOWER	Lower	JG
5.1.13.2	YL-0626C INDICATION	ON	ON	JG
5.1.13.3	YL-0626B INDICATION	OFF	OFF	JG
5.1.15.1	HS-0626 POSITION	STOP	stop	JG
5.1.15.2	YL-0626C INDICATION	OFF	OFF	JG
5.1.15.3	YL-0626B INDICATION	ON	ON	JG
5.1.15.4	ZLH-0621 INDICATION	OFF	OFF	JG
* 5.1.15.5	ZAH-0621 STATUS	OFF	OFF	JG
5.1.17.1	HS-0626 POSITION	LOWER	Lower	JG
5.1.17.2	YL-0626C INDICATION	ON	ON	JG

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.1.17.3	YL-0626B INDICATION	OFF	OFF	JA
5.1.19.1	HS-0626 POSITION	STOP	stop	JA
5.1.19.2	YL-0626C INDICATION	OFF	OFF	JA
5.1.19.3	YL-0626B INDICATION	ON	ON	JA
5.1.19.4	ZLL-0621 INDICATION	ON	ON	JA
5.1.21.1	HS-0626 POSITION	RAISE	Raise	JA
5.1.21.2	YL-0626A INDICATION	ON	ON	JA
5.1.21.3	YL-0626B INDICATION	OFF	OFF	JA
5.1.22.1	ZI-0621 INDICATION	0 to 2.5 INCHES	2.5	JA
5.1.22.2	YL-0626A INDICATION	OFF	OFF	JA
5.1.22.3	YL-0626B INDICATION	ON	ON	JA
5.1.22.4	ZLH-0621 INDICATION	ON	ON	JA
5.1.22.5	ZLL-0621 INDICATION	OFF	OFF	JA
5.1.22.6	ZAH-0621 STATUS	ON	ON	JA
5.1.22.7	ZAL-0621 STATUS	OFF	OFF	JA
5.1.22.8	XA-0621 STATUS	SOUNDING	Sounding	JA
5.1.24	WINCH W-0621 BREAKER	LOCKED OFF	Locked off	JA
5.1.25.1	SECTION 5.1 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	JA 6/2/98
5.1.25.2	SECTION 5.1 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	MA 6/2/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.2 IMMERSIBLE SLUICE PUMP P-0621</b>				
<b>Preparation/Initial Checks</b>				
5.2.1.1	WINCH W-0621 BREAKER	LOCKED OFF		
5.2.1.2	P-0622 DISCONNECT	LOCKED OFF		
5.2.3	TABLE 3 STATUS CORRECT	YES		
5.2.4	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.2.5	TABLE 4 STATUS CORRECT	YES		
5.2.6.1	PISL-0621 INDICATION	LESS THAN 5 PSIG		
5.2.6.2	TISH-0621 INDICATION	50 to 330 °F		
5.2.6.3	TISHH-0621 INDICATION	50 to 340 °F		
5.2.6.4	TISH-0622A INDICATION	50 to 225 °F		
5.2.6.5	IISH-0621A INDICATION	LESS THAN 2 AMPS		
<b>Verify Pump Operation</b>				
5.2.7	HS-0635 POSITION	LOCAL		
5.2.8	LIGHT TEST	4 LIGHTS FUNCTION		
5.2.11.1	HS-0621A POSITION	ROTATED TO START		
5.2.11.2	YL-0621A INDICATION	ON		
5.2.11.3	YL-0621B INDICATION	OFF		
5.2.12	IISH-0621A INDICATION	20 to 24 AMPS		
5.2.14.1	HS-0621A POSITION	ROTATED TO STOP		
5.2.14.2	YL-0621A INDICATION	OFF		
5.2.14.3	YL-0621B INDICATION	ON		
5.2.16	P-0621 BREAKER	LOCKED OFF		
5.2.17.1	SECTION 5.2 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.2.17.2	SECTION 5.2 COMPLETE	QC INSPECTOR INITIALS/DATE		

Performed on  
 Rev A-1 Jg  
 6/18/98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM				
5.3.4	XA-06221 STATUS	ON		
5.3.8.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.8.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.8.3	PI-06220 INDICATION	AS FOUND		
5.3.11.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.11.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.11.3	PI-06221 INDICATION	AS FOUND		
5.3.14.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.14.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.14.3	PI-06222 INDICATION	AS FOUND		
5.3.15.1	PI-06223 INDICATION	165 to 175 PSIG		
5.3.15.2	FI-06221 INDICATION	LESS THAN 10%		
5.3.15.3	XA-06221 STATUS	OFF		
5.3.16	PI-06223 INDICATION	50 to 55 PSIG		
5.3.17	FI-06221 INDICATION	LESS THAN 10%		
5.3.19	XA-06221 STATUS	ON		
5.3.20.1	SECTION 5.3 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.3.20.2	SECTION 5.3 COMPLETE	QC INSPECTOR INITIALS/DATE		

N  
A

Performed on Rev A-1  
JA 6/19/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.4 SLUICE BOOSTER PUMP P-0622 OPERATION</b>				
<b>Preparation/Initial Checks</b>				
5.4.3.1	PISL-0621 DISCONNECTED	YES		N/A
5.4.3.2	PRESSURE SIMULATOR CONNECTED	YES		
5.4.5	PISL-0621 INDICATION	GREATER THAN 50 PSIG		
5.4.8.1	WINCH W-0621 BREAKER	LOCKED OFF		
5.4.8.2	P-0621 BREAKER	LOCKED OFF		
5.4.9	ADMIN LOCKS REMOVED	YES		
5.4.10	TABLE 5 STATUS CORRECT	YES		
5.4.11	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.4.12	TABLE 6 STATUS CORRECT	YES		
5.4.13.1	PISL-0622 INDICATION	LESS THAN 5 PSIG		
5.4.13.2	TI-06210A INDICATION	50 to 340 °F		
5.4.13.3	TI-06210B INDICATION	50 to 225 °F		
5.4.13.4	TI-0629 INDICATION	50 to 330 °F		
5.4.13.5	II-0622 INDICATION	LESS THAN 2 AMPS		
5.4.13.6	EI-0621 INDICATION	RECORD AS FOUND		
5.4.17	LIGHT TEST	4 LIGHTS FUNCTION		
<b>Pump Operation Stop Switch Shutdown</b>				
5.4.18	SC-0621 SETTING	0%		
5.4.21.1	HS-0624A POSITION	PRESSED TO START		
5.4.21.2	YL-0624A INDICATION	ON		
5.4.21.3	YL-0624B INDICATION	OFF		
5.4.22.1	IISH-0622 INDICATION	RECORD AS FOUND		
5.4.22.2	II-0622 INDICATION	RECORD AS FOUND		
5.4.22.3	EI-0621 INDICATION	RECORD AS FOUND		
5.4.22.4	SI-0621 INDICATION	1440 to 1550 RPM		

*Performed on Rev A-  
Jg 6/1/98*

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.4.24.1	SC-0621 SETTING	100%		
5.4.24.2	IISH-0622 INDICATION	36 to 38 AMPS		
5.4.24.3	II-0622 INDICATION	45 to 49 AMPS		
5.4.24.4	EI-0621 INDICATION	465 to 515 VOLTS		
5.4.24.5	SI-0621 INDICATION	3000 to 3060 RPM		
5.4.26.1	HS-0624B POSITION	PRESSED TO STOP		
5.4.26.2	YL-0624A INDICATION	OFF		
5.4.26.3	YL-0624B INDICATION	ON		
Pump Operation COAST/STOP Button Shutdown				
5.4.30.1	HS-0624A POSITION	PRESSED TO START		
5.4.30.2	YL-0624A INDICATION	ON		
5.4.30.3	YL-0624B INDICATION	OFF		
5.4.32.1	HS-0624C POSITION	FULLY INSERTED		
5.4.32.2	YL-0624A INDICATION	OFF		
5.4.32.3	YL-0624B INDICATION	ON		
Verify Pump Low Suction Pressure Interlock				
5.4.33	HS-0624C POSITION	FULLY RETRACTED		
5.4.37.1	HS-0624A POSITION	PRESSED TO START		
5.4.37.2	YL-0624A INDICATION	ON		
5.4.37.3	YL-0624B INDICATION	OFF		
5.4.39.1	PISL-0621 INDICATION	LESS THAN 30 PSIG		
5.4.39.2	YL-0624A INDICATION	OFF		
5.4.39.3	YL-0624B INDICATION	ON		
5.4.39.4	WINDOW 6-1 STATUS	ON		
5.4.41	P-0622 DISCONNECT	LOCKED OFF		
5.4.42.2	PRESSURE SIMULATOR	DISCONNECTED		
5.4.42.3	PISL-0621	CONNECTED		
5.4.43.1	SECTION 5.4 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.4.43.2	SECTION 5.4 COMPLETE	QC INSPECTOR INITIALS/DATE		

Performed on Res A-1

6/2/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.5 SLICER S-1361</b>				
<b>Preparation/Initial Checks</b>				
5.5.4.1	YL-13613B INDICATION	ON		
5.5.4.2	YL-13613A INDICATION	OFF		
5.5.4.3	YL-13615B INDICATION	ON		
5.5.4.4	YL-13615A INDICATION	OFF		
5.5.6.1	HS-13614 POSITION	MAN		
5.5.6.2	YL-13614B INDICATION	ON		
5.5.6.3	YL-13614A INDICATION	OFF		
<b>Sluice Operation - Manual Operation</b>				
5.5.9.1	HS-13613 POSITION	ON		
5.5.9.2	YL-13613A INDICATION	ON		
5.5.9.3	YL-13613B INDICATION	OFF		
5.5.10	ZC-1361 MOVEMENT	NOZZLE RESPONDED		
5.5.11	ZI-13614 INDICATION	INCREASES		
5.5.12	ZI-13614 INDICATION	READING CONSTANT		
5.5.13	ZI-13614 INDICATION	DECREASES		
5.5.14	ZI-13614 INDICATION	READING CONSTANT		
<b>Sluicer Operation - Tilt Control</b>				
5.5.16.1	HS-13614 POSITION	ON		
5.5.16.2	YL-13615A INDICATION	ON		
5.5.16.3	YL-13615B INDICATION	OFF		
5.5.17	ZC-1361 MOVEMENT	NOZZLE RESPONDED		
5.5.18	ZI-13613 INDICATION	-40°		
5.5.19	ZI-13613 INDICATION	-40°		
5.5.20	ZI-13613 INDICATION	90°		
5.5.21	ZI-13613 INDICATION	90°		

*N/A*

*Performed on Rev A-1  
JA 6/19/98*

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
Sluice Operation - Automatic Operation				
5.5.22	ZS-13614L SETPOINT	-90°		
5.5.23	ZS-13614R SETPOINT	90°		
5.5.25.1	HS-13614 POSITION	AUTO		
5.5.25.2	YL-13614B INDICATION	OFF		
5.5.25.3	YL-13614A INDICATION	ON		
5.5.26	ZI-13614 INDICATION	SWEEPS -90° to 90°		
5.5.29.1	HS-13614 POSITION	MAN		<i>WJ</i>
5.5.29.2	YL-13614B INDICATION	ON		<i>WJ</i>
5.5.29.3	YL-13614A INDICATION	OFF		
5.5.32	TILT LIGHT STATUS	YL-13615A OFF YL-13615B ON		
5.5.34	SLUICE PUMP LIGHT STATUS	YL-13613A OFF YL-13613B ON		
5.5.36.1	SECTION 5.5 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.5.36.2	SECTION 5.5 COMPLETE	QC INSPECTOR INITIALS/DATE		

Performed on  
Rev A-1 JA 6/1/98

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.6 SLUICE PIT 241-AY-02E CHILLER				
Preparation/Initial Checks				
5.6.15	TIC-06213 INDICATION	RECORD AS FOUND	85	Jg
5.6.22	COMPRESSOR STARTS	STARTS @ $\geq 90^{\circ}$ F	100	Jg
5.6.23.1.A	TIC-06213 INDICATION	RECORD AS FOUND	RECORD TEMP _____ °F TIME _____ DATE _____	/
5.6.23.1.B	TI-0621A	RECORD AS FOUND		
5.6.23.1.C	TI-0621B	RECORD AS FOUND		
5.6.23.1.D	WINDOW 7-3 STATUS	RECORD AS FOUND		
5.6.25.1	TIC-06213 INDICATION	RECORD AS FOUND	RECORD TEMP _____ °F TIME _____ DATE N/A	
5.6.25.2	TI-0621A	RECORD AS FOUND		
5.6.25.3	TI-0621B	RECORD AS FOUND		
5.6.25.4	WINDOW 7-3 STATUS	RECORD AS FOUND		
5.6.28	COMPRESSOR SHUTS DOWN	STOPS @ $\leq 90^{\circ}$ F		
5.6.35	TE-06213 LEAD WIRES RE-CONNECTED	RECORD AS LEFT		
5.6.37.1	SECTION 5.6 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.6.37.2	SECTION 5.6 COMPLETE	QC INSPECTOR INITIALS/DATE		

Retest performed on Rev A-3 Jg 6/19/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.7 VERIFY VALVE HV-0625 OPERATION</b>				
5.7.3.1	SLUICE PIT 241-AY-02E	NO LEAKAGE PRESENT		
5.7.3.2	SLUICE PIT 241-C-06C	NO LEAKAGE PRESENT		
5.7.3.3	FLOW INTO 241-C-106	FLOW OBSERVED		
5.7.3.4	FLOW INTO 241-AY-102	FLOW OBSERVED		
5.7.3.5	PISL-0621	AS FOUND		
5.7.3.6	WINDOW 6-1	AS FOUND		
5.7.3.7	PISL-0622	AS FOUND		
5.7.3.8	WINDOW 6-2	AS FOUND		
5.7.3.9	FQI-0621	AS FOUND		
5.7.3.10	FI-0621	AS FOUND		
5.7.3.11	ZLH-0625 STATUS	ON		
5.7.3.12	ZLL-0625 STATUS	ON		
5.7.5.1	SECTION 5.7 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.7.5.2	SECTION 5.7 COMPLETE	QC INSPECTOR INITIALS/DATE		

*W A*

*Performed on Rev A-/  
Ja 6/19/98*

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS</b>				
5.8.1.1.A	CK 10 BREAKER	OFF		<i>N/A</i>
5.8.1.1.B	CK 12 BREAKER	OFF		
5.8.1.2	WINCH BREAKER	LOCKED OFF		
5.8.1.3	P-0621 BREAKER	LOCKED OFF		
5.8.1.4	P-0622 DISCONNECT	LOCKED OFF		
5.8.1.5	NITROGEN BOTTLE VALVE	CLOSED		
5.8.1.6	PIT 241-AY-02E VENT PLUG INSTALLED	YES		
5.8.1.7	SECTION 5.8 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.8.1.8	SECTION 5.8 COMPLETE	QC INSPECTOR INITIALS/DATE		

*Performed on Red A-  
Ja 6/19/98*



**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
<b>241-C-106 LINEUP</b>			
<b>C-PDP-1 TANK C-106 SLUICING POWER DISTRIBUTION PANEL</b>			
	MCC-N1 FEEDER BREAKER	ON	
	MAIN DISCONNECT	ON	
	TRANSFORMER BREAKER SKID PRIMARY FEEDER BREAKER	ON	
<b>PROJECT W-320 TRANSFORMERS/CIRCUIT BREAKERS SKID</b>			
	TRANSFORMER SPT PRIMARY FEEDER BREAKER	ON	
	OFF-FB CONSTRUCTION OFFICE TRAILER FEEDER BREAKER	ON	
<b>MO-211 PANELBOARD PNL-MO211 (INSIDE MO-211)</b>			
	MAIN BREAKER	ON	
CK 1	CP-02 IN TANK IMAGING RPTS	ON	
CK 7	CP-01/CB-01 OPER STA RECPTS	ON	
<b>MCC-N1 (INSIDE 241-C-51)</b>			
	SLUICER HYDRAULIC POWER UNIT	ON	
1FM	INCOMING SUPPLY	ON	
1FDR	PROCESS BLDG	ON	
2FE	SLURRY PUMP WINCH	LOCKED OFF	
2FK	XFMR DISCONNECT	ON	
3FD	600A TO SEISMIC SKID	ON	
	BOOSTER PUMP P-1362 MOLDED CASE DISCONNECT SWITCH	OFF	
<b>MCC-N2 (INSIDE 241-C-51)</b>			
1FF	INLINE SLURRY PUMP BOOSTER VSD P-1362	LOCKED OFF	
1FK	SUBMERSIBLE SLURRY PUMP	LOCKED OFF	
<b>120/240VAC PNL BD C 106-PP2 (LOCATED 252-C-51, MCC-N1, 3FJ)</b>			
CK 1	LIGHTING	ON	

*Electrical lineup completed on Rev A-1*

**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP (Cont.)**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
CK 2	VSD CABINET LIGHTING	ON	
CK 5	C-PDP-1 LTG & RCPTS	ON	
CK 7	CATHODIC PROTECTION	ON	
CK 12	SSS-1A HVAC & RCPT	ON	
CK 13	1E-1362	OFF	
CK 14	SSS-1B HVAC & RCPT	ON	
CK 18	PANEL MAIN	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1A (INSIDE 241-C-51A)			
C-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	
YL-13651	C-SSS-1A POWER AVAILABLE (SET) LIGHT	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1B (INSIDE 241-C-51B)			
YL-13653	C-SSS-1B POWER AVAILABLE SET LIGHT	ON	
SEISMIC DETECTION SYSTEM 1A/1B EMERGENCY TRIP (LOCATED INSIDE MO-211 ON CP-01)			
HS-13650A	EMERGENCY TRIP SWITCH	RETRACTED	
C106-PP1 (LOCATED IN PROCESS BUILDING 241-C-91)			
CK 4	RCPT	ON	
CB 5	IN-TANK CCTV FCU-1361 RACK (GFCI)	ON	
ER-1362 (LOCATED OUTSIDE PROCESS BUILDING 241-C-91)			
CB-1	PROCESS BLDG POWER PANEL PP-1 SUPPLY	ON	
DS-1	PROCESS BUILDING MAIN DISCONNECT SWITCH	ON	
241-AY-102 LINEUP			
DISTRIBUTION PANEL AY-PDP-1			
7	AY102-PP1 EES MINI POWER PANEL FEEDER BREAKER	ON	
11	ELECTRICAL EQUIPMENT SKID: BLDG 241-AY-51	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1A) INSIDE 241-AY-51A			
AY-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	
YL-06210	C-SSS-1A POWER AVAILABLE LIGHT SET	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1B) INSIDE 241-AY-51B			
YL-06212	C-SSS-1B POWER AVAILABLE LIGHT SET	ON	

*Electrical Line-up  
completed on REV A-1*

**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP (Cont.)**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
ELECTRICAL EQUIPMENT SKID 241-AY-51 (OUTSIDE 241-AY-51)			
	BLDG 241-AY-51 480V SERVICE DISCONNECT	ON	
ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER (INSIDE 241-AY-51)			
	WINCH STARTER W-0621	LOCKED OFF	
	IMMERSIBLE PUMP P-0621 FEEDER BREAKER (480V)	LOCKED OFF	
VARIABLE SPEED DRIVE VC-0622 (INSIDE 241-AY-51)			
	BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH	LOCKED OFF	
MINI POWER PANEL AY102-PP1 (LOCATED INSIDE 241-AY-51)			
	MAIN	ON	
	SECONDARY MAIN	ON	
CK 1	HEAT PUMP, 240V, 1PH AC-0623	ON	
CK 4	GFCI RCPT & LIGHTS	ON	
CK 5	241-AY-51B HVAC, RCPT & BATT CHGR	ON	
CK 6	241-AY-51A HVAC, RCPT & BATT CHGR	ON	
CK 9	241-AY-801A	ON	
CK 10	OPER STATION RCPT	ON	
CK 11	AY-PDP-1 LTG & RCPT	ON	
CK 12	OPER STATION IE-0621	ON	
CK 13	P-0622 VSD LIGHTING	ON	
SEISMIC DETECTION SYSTEM IA/IB EMERGENCY TRIP (LOCATED INSIDE 241-AY-51 AT IE-0621)			
HS-06211A	EMERGENCY TRIP SWITCH	RETRACTED	
ELECTRICAL DISTRIBUTION SKID EDS-DP-807 (LOCATED AT BUILDING 241-A-271)			
CK 11	AREA MONITOR - RAT 44	ON	
CK 12	801-AY PANEL DAS	ON	

*Electrical Line-up  
Completed on REV A-1*

**ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET**

INSTRUMENT	DESCRIPTION/LOCATION	NEXT DUE DATE	INITIAL
ZI-0621	SBM SLUICE PUMP P-0621 POSITION (LOCATED ELECTRICAL EQUIPMENT SKID 241-A1-51, PANEL 1E-0621)	1/22/99	ja
PISL-0621	SBM SLUICE PUMP P-0621 DISCHARGE PRESSURE (PISL-0621) (LOCATED PANEL 1E-0621)	4-7-01	ja
PI-06223	NITROGEN PURGE LINE PRESSURE (LOCATED NITROGEN GAS CONTROL PANEL GCP-0621)	4-6-01	ja
PSL-0622	NITROGEN PURGE LINE PRESSURE SWITCH LOW (LOCATED NITROGEN GAS CONTROL PANEL GCP-0621)	4-7-01	ja
ZI-13613	SLUICER S-1361 TILT POSITION (LOCATED NO-211 PANEL CB-01)	2-13-99	ja
ZI-13614	SLUICER S-1361 PAN POSITION (LOCATED NO-211 PANEL CB-01)	2-13-99	ja
TIC/TSH-06213	AIR COOL CHILLER TEMP CONT/SW HIGH (LOCATED @ 241-A1-102 PUMP PIT COOLER 241-A1-02E CONTROL PANEL)	2-24-01	ja

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	72 of 75

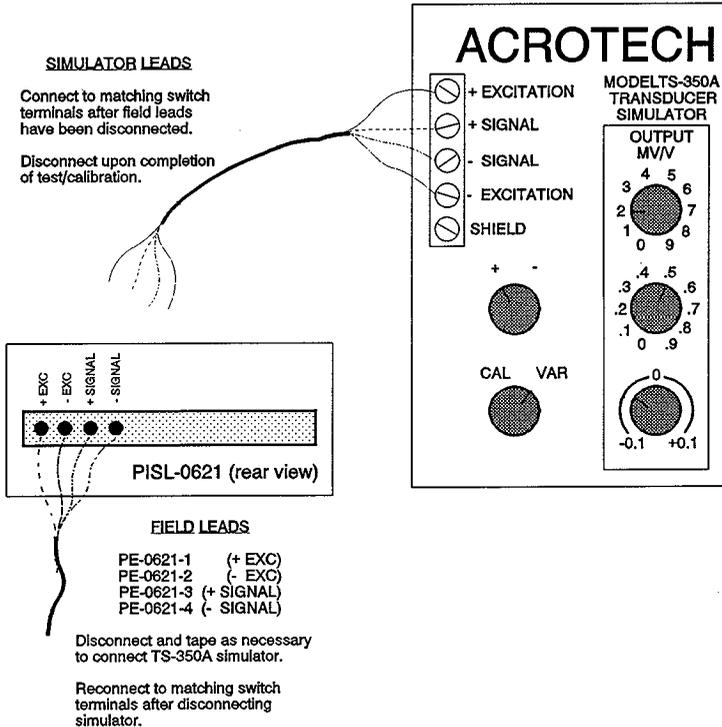


FIGURE 1 - PRESSURE SIMULATOR CONNECTION

## PROCEDURE HISTORY SIGNATURE SHEET

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/16/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>5/16/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/17/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/17/98</u>
Environmental Eng.	<u>P.C. Miller</u>	<u>5/17/98</u>
RadCon Engineer	<u>R.J. Reeder</u>	<u>5/17/98</u>
COG Engineer	<u>J.M. Jones</u>	<u>5/17/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>5/19/98</u>
Approval Authority	<u>T.J. Kelley</u>	<u>5/18/98</u>

Justification: Engineering Request W-320.

Summary of Changes: New Procedure to support Project W-320.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-2	6/1/98	74 of 75

**PROCEDURE HISTORY SIGNATURE SHEET (Cont.)**

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

Current Modification: A-1  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ  
 PCA Incorporated: ETF-98-331

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/20/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/20/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/20/98</u>
OE/DST	<u>K.J. Anderson</u>	<u>5/20/98</u>
Environmental Eng.	<u>J.D. Guberski</u>	<u>5/20/98</u>
COG Engineer	<u>Randy L. Powers</u>	<u>5/20/98</u>
Acceptance Review	<u>L. Ross</u>	<u>5/20/98</u>
Approval Authority	<u>K.J. Anderson</u>	<u>5/20/98</u>

Justification: Correct labeling errors and insert LCO 3.2.1 limits.

Summary of Changes:

- Pg 8: Deleted step 2.4.10.2.
- Pg 10: Added LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.
- Pg 23: Deleted step 5.1.19.5.
- Pg 27: Swapped step 5.2.9 and 5.2.10.
- Pg 30: Changed "FI-0622" to "FI-06221" in steps 5.3.15.2 and 5.3.17.
- Pg 34: Added window 6-1 for SBM Sluice Pump P-0621.
- Pg 57: Deleted ZAL-0621 STATUS data block.
- Pg 59: Changed nomenclature to FI-06221.

Attachment A-3

Completed Test Procedure OTP-320-003, Revision A-3

**WRSS SUPERNATE TRANSFER SYSTEM OPERATIONAL TEST**

Last Full Revision: A-0 Release Date: 5/19/98 USQ Screening Number: TF-98-0281 Approval Designator: ESQ		
Current Modification: A-3 USQ Screening Number: TF-98-0387 Approval Designator: ESQ PCA Incorporated: ETF-98-387		
POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz</u>	<u>6/17/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>6/17/98</u>
QA Engineer	<u>W.L. Adams</u>	<u>6/17/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>6/17/98</u>
Environmental Eng.	<u>P.C. Miller</u>	<u>6/17/98</u>
COG Engineer	<u>R.L. Powers</u>	<u>6/17/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>6/17/98</u>
Approval Authority	<u>J.E. Andrews</u>	<u>6/17/98</u>
Justification: Clarification of chiller test process		
Summary of Changes: Section 5.6 and Attachment 4 - Added steps for connecting and disconnecting RTD Readout to TE-06213. Added new steps for checking and recording RTD Readout values. Deleted original steps for verifying compressor on/off status. Corrected data entry points for Section 5.6 to match changes to text.		

**TABLE OF CONTENTS**

**PAGE**

1.0	PURPOSE AND SCOPE . . . . .	3
1.1	PURPOSE . . . . .	3
1.2	SCOPE . . . . .	3
2.0	INFORMATION . . . . .	3
2.1	TERMS AND DEFINITIONS . . . . .	3
2.2	RESPONSIBILITIES . . . . .	4
2.3	REFERENCES . . . . .	5
2.4	GENERAL INFORMATION . . . . .	6
2.5	RECORDS . . . . .	8
3.0	PRECAUTIONS AND LIMITATIONS . . . . .	9
3.1	RADIATION AND CONTAMINATION CONTROL . . . . .	9
3.2	ENVIRONMENTAL COMPLIANCE . . . . .	9
3.3	LIMITS . . . . .	10
4.0	PREREQUISITES . . . . .	16
4.1	SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES . . . . .	16
4.2	PERFORMANCE DOCUMENTS . . . . .	16
4.3	CONDITIONS AND ACTIONS . . . . .	17
5.0	PROCEDURE . . . . .	20
5.1	WINCH ASSEMBLY W-0621 . . . . .	20
5.2	IMMERSIBLE SLUICE PUMP P-0621 . . . . .	25
5.3	SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM . . . . .	29
5.4	SLUICE BOOSTER PUMP P-0622 . . . . .	31
5.5	SLUICER S-1361 . . . . .	40
5.6	SLUICE PIT 241-AY-02E CHILLER . . . . .	45
5.7	VERIFY VALVE HV-0625 OPERATION . . . . .	50
5.8	RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS . . . . .	52
5.9	TEST CLOSURE . . . . .	53
	ATTACHMENT 1 - OTP-320-003 TEST LOG . . . . .	54
	ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT . . . . .	55
	ATTACHMENT 3 - OTP-320-003 SIGNATURE LOG . . . . .	56
	ATTACHMENT 4 - OTP-320-003 DATA SHEET . . . . .	57
	ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP . . . . .	69
	ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET . . . . .	72
	FIGURE 1 - PRESSURE SIMULATOR CONNECTION . . . . .	73
	PROCEDURE HISTORY SIGNATURE SHEET . . . . .	74

## 1.0 PURPOSE AND SCOPE

### 1.1 PURPOSE

This procedure provides instructions for operability testing of the Supernate Transfer portion of the Tank 241-AY-102 Waste Retrieval Sluicing System, and Sluice Pit 241-AY-102 Chiller.

### 1.2 SCOPE

- 1.2.1 This procedure involves the W-320 Tank 241-AY-102 Supernate Transfer System. Instructions are provided to verify correct operation of the components and portions of their associated instrumentation, controls, and alarms, but does not allow for the transfer of tank waste.
- 1.2.2 The following items will be tested for operation:
- Immersible Sluice Pump Winch Assembly W-0621
  - Immersible Sluice Pump P-0621
  - Sluice Booster Pump P-0622 Nitrogen Seal/Purge System
  - Sluice Booster Pump P-0622
  - Sluicer S-1361
  - Sluice Pit 241-AY-02E Chiller
  - Valve HV-0625

## 2.0 INFORMATION

### 2.1 TERMS AND DEFINITIONS

None.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	3 of 76

## 2.2 RESPONSIBILITIES

### 2.2.1 Test Engineer:

- Provide technical support during testing.
- Provide programming support during testing.
- Review test documents to validate acceptance.
- Record equipment status and data per this procedure.
- Record data exceptions and other notes as required on the Operational Test Procedure Data Sheets.
- Prepare post testing documents.

### 2.2.2 Craft (TWRS Maintenance and/or Construction Forces):

- Provide assistance during Operational Test Procedure testing.
- Provide equipment for performance of this Operational Test Procedure.

### 2.2.3 Quality Control Inspector:

- Review recorded test data for accuracy and completeness at completion of test.
- Perform activities associated with QC Hold Point.

### 2.2.4 Test Director:

- Verifies prerequisites complete prior to start of test.
- Overall control of the testing process and change record authorization for this Operational Test Procedure.
- Ensures all required data is collected.
- Responsible for Safe and productive accomplishment of testing.
- Ensure safe working conditions and practices.
- Ensure compliance with test documents and Technical Safety Requirements/Documents (TSRs/OSDs) during testing.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	4 of 76

## 2.2 RESPONSIBILITIES (Cont.)

- Communicate and coordinate testing with DST Shift Manager.
- Ensures review and approval of all modifications to test procedures are completed prior to return to testing.
- Act as direct line of communication and centralized point of control during normal, abnormal, and casualty situations.
- Conduct pretest briefings as required.
- Schedule/reschedule tests as required.
- Conduct pre-job system walkdowns.
- Review test documents to validate acceptance.
- Verify all test instrumentation is within current calibration cycle.

### 2.2.5 Operations:

- Perform all operations required by this procedure per direction of the Test Director.
- Operate ventilation systems as required.
- Record test data as required.

## 2.3 REFERENCES

- HNF-SD-WM-PCP-013, "Tank 241-C-106 Waste Retrieval Sluicing System Process Control Plan"
- TO-320-011, "OPERATE C-106 IN TANK IMAGING SYSTEM"
- TO-320-014, "WRSS Transfer Line Flushing"
- Certified Vendor Information #22668
- H-2-818559 SH. 2-5, PROJECT W-320 P&ID TANK 241-C-106
- H-2-818560 SH. 3, PROJECT W-320 P&ID TANK 241-AY-102
- H-2-818680 C FARM ONE-LINE DIAGRAM

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	5 of 76

## 2.4 GENERAL INFORMATION

### 2.4.1 CHANGE CONTROL

Change control shall be in accordance with HNF-IP-0842.

### 2.4.2 EXCEPTIONS

2.4.2.1 Test exceptions are used to document unexpected results and identify appropriate actions, not to circumvent performance requirements.

2.4.2.2 All test exceptions shall be given a sequential number and recorded on Attachment 1, OTP-320-003 TEST LOG.

2.4.2.3 Attachment 2, OTP-320-003 TEST EXCEPTION REPORT, shall be filled out to record and disposition each test exception.

### 2.4.3 ALARM RESPONSE

2.4.3.1 This Operational Test Procedure identifies all alarms expected as a result of testing and provides instructions for responding to those alarms.

2.4.3.2 Existing alarm response procedures shall be used when responding to unexpected alarms which occur during testing.

2.4.3.3 Unexpected alarms received during testing, that are associated with this test, shall be logged as test exceptions and evaluated by the Test Director for effect on the test.

2.4.4 Contact Test Director and Test Engineer for additional instructions if changing plant conditions affect testing or delays extend test duration past end of the (testing) shift.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	6 of 76

## 2.4 GENERAL INFORMATION (Cont.)

2.4.5 If during performance of this procedure, any of the following conditions are found, **IMMEDIATELY** notify the assigned Test Director and Test Engineer:

- Any equipment malfunction which could prevent fulfillment of functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.
- Any other unexpected anomalies.

Test Director shall assess the effect on the plant and the test and direct either continuation of the test in the same section, proceeding to another attachment or section of the test, or suspension of the test per step 2.4.10 and establishing a safe condition for equipment.

2.4.6 Comply with the Hanford Site Wide Lock and Tag policy requirements, HNF-IP-0842, Vol. II, Section 4.9.1.

2.4.7 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 the desired range.
- Have an accuracy (consistent with state-of-the-art limitations) equal to or greater than the accuracy specified in the procedure.

2.4.8 Timing measurements shall be made with commercially available timing devices.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	7 of 76

## 2.4 GENERAL INFORMATION (Cont.)

### 2.4.9 SYSTEM STATUS

Record all changes in equipment configuration, comments and observations by participants, and all other data pertinent to the test on Attachment 1, OTP-320-003 TEST LOG.

### 2.4.10 SUSPENSION OF TEST AND RESUMING TEST

- 2.4.10.1 Test Director may unilaterally, for any reason, stop testing, and place equipment in a safe condition. All suspension of testing shall be documented on Attachment 1, OTP-320-003 TEST LOG.
- 2.4.10.2 If a section of the test is suspended for any reason prior to completing all steps, the Test Director shall establish initial conditions necessary to resume testing for that section. Previously completed sections need not be repeated unless directed by the Test Director to establish conditions required to resume the test.

## 2.5 RECORDS

The performance copy of the Operational Test Procedure and all completed attachments shall be filed as a permanent test record (Operational Test Report).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	8 of 76

## 3.0 PRECAUTIONS AND LIMITATIONS

### 3.1 RADIATION AND CONTAMINATION CONTROL

- 3.1.1 Work in Radiological Areas shall be review by Radiological Control Engineering and Technical Support prior to release (HNF-IP-0842 Vol. 1, Section 1.1).
- 3.1.2 High dose rates and loose contamination are possible during pit activities
- 3.1.3 Indicates Health Physics (Health Physics Technician) hold points.
- 3.1.4 When radiological contamination or radiation dose rate exceeds limiting conditions specified in Radiological Work Permit, stop work authority shall be initiated per HSRCM-1, Article 345.
- 3.1.5 Implement high radiation area physical access controls per HNF-IP-0842, Vol. VII, Section 2.2.
- 3.1.6 All equipment removed from tank or pits shall be treated as being radiologically contaminated.



### 3.2 ENVIRONMENTAL COMPLIANCE

Any leakage detected during transfer line flushes must be reported to Environmental Operations Compliance per the Environmental Compliance On-Call list. Operations Compliance will determine reportability per Washington Administrative Code, Chapter 173-303 requirements.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	9 of 76

### 3.3 LIMITS

Tank Waste Remediation System Technical Safety Requirements, HNF-SD-WM-TSR-006

#### 3.1 CONFINEMENT

##### 3.1.1 Transfer System Covers

LCO 3.1.1 Transfer system covers shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA

APPLICABILITY: Transfer system covers that are:

- associated with structures that are PHYSICALLY CONNECTED to an ACTIVE WASTE transfer pump not under administrative lock; and
- not under the control of AC 5.22, "Transfer System Cover Removal Controls."

#### 3.2 FLAMMABLE GAS

##### 3.2.1 DST and AWF Tank Ventilation Systems

LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA

APPLICABILITY: DSTs and AWF tanks.

##### 3.2.2 SST Ventilation Systems - Active

LCO 3.2.2 An active ventilation system shall be OPERABLE.

MODE

APPLICABILITY: OPERATION and LIMITED.

PROCESS AREA SSTs with active ventilation systems (241-C-105 except  
 APPLICABILITY: during WRSS operations, C-106, SX-101, SX-102, SX-103, SX-104, SX-105, SX-106, SX-107, SX-108, SX-109, SX-110, SX-111, SX-112, and SX-114).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	10 of 76

**3.3 LIMITS (Cont.)****LIMIT - AC 5.10 Ignition Controls****5.10.2 Program Key Elements****b. Vehicle Controls**

- Vehicle access within the tank farm boundary shall be limited to vehicles whose fuel systems are protected from damage to the integrity of the fuel systems caused by potential collisions with tank structures (e.g., mechanical protection such as a skid plate on the fuel tank or reservoir tanks physically located higher than risers or vehicle axles).

**c. Flammable Gas Ignition Controls****Ignition Source Control Set #2**

5. Electrical equipment shall be designed to meet NFPA 70, Class I, Division 2, Group B criteria or provide equivalent safety. As a minimum, this shall be interpreted to mean the equipment is nonsparking under normal operation or, if normally sparking, the sparking component(s) shall be continuously isolated (purged and pressurized) from the potentially flammable gas environment, or the design of the device enclosure shall be of sufficient strength (explosion-proof) to prevent propagation of a gas burn to the environment external to the enclosure (NFPA 70).
6. Either automatic shutdown or alarming with manual shutdown is required upon loss of protective gas pressure or flow as defined by NFPA 496 Type Z pressurization. In EX-TANK INTRUSIVE region applications, electrical equipment that does not meet Class I, Division 2, Group B may be used, if it is automatically shutdown by combustible gas detection systems.

**5.10.3 Applicability**

This program applies to SSTs, DSTs (except Tank 241-SY-101), AWF tanks, DCRTs, catch tanks, IMUSTs, WASTE transfer systems, 204-AR Waste Unloading Facility, 244-AR Vault, and the 244-CR Vault. Controls for Tank 241-SY-101 are included in AC 5.9, "Flammability Controls."

Flammable gas ignition controls apply to tanks with a potential flammable gas hazard, which include SSTs, DSTs, AWF tanks, DCRTs, catch tanks, IMUSTs, 244-AR Vault, and the 244-CR Vault.

INTRUSIVE controls and vehicle controls apply to tanks with a potential organic solvent hazard, which are identified in HNF-SD-WM-BIO-001, Chapter 5.0, Table 5.3.2.15-6.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	11 of 76

**3.3 LIMITS (Cont.)****LIMIT - AC 5.13 Encasement Seal Loop Controls**

## 5.13.1

Requirement for Encasement Seal Loop Controls

A program shall be maintained to control encasement seal loop drain line isolation valves (hydrostatic test valves).

## 5.13.2

Program Key Elements

During WASTE transfer through a WASTE transfer system, all encasement seal loop drain line isolation valves associated with PHYSICALLY CONNECTED piping shall be in the "open," "drain," or "operate" position, as applicable to the particular valve to provide an open drain path.

**LIMIT - AC 5.20 Transfer Pump Administrative Lock Controls**

## 5.20.1

Requirement for Transfer Pump Administrative Lock Controls

A program shall be maintained for administrative lock controls on WASTE transfer pumps to minimize the potential for inadvertent pump starts.

5.20.2 Program Key Elements

- a. The administrative lock of a WASTE transfer pump is demonstrated by removing and securing the motive force from the pump (e.g., electrical power, steam, water, or air).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	12 of 76

## 3.3 LIMITS (Cont.)

- b. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps locked in accordance with AC 5.20, Transfer Pump Administrative Lock Controls," shall normally be maintained OPERABLE. OPERABILITY is demonstrated by periodic VERIFICATION that the transfer system covers are in place, and periodic performance of a FUNCTIONAL TEST of the service water pressure detection systems and transfer leak detection systems.*

*Transfer system covers, service water pressure detection systems, and transfer leak detection systems may be inoperable provided they are specifically identified and periodic management reviews are performed to approve their continued inoperability. The frequency of management reviews is based on the number of affected transfer system covers, service water pressure detection systems, and transfer leak detection systems, and the duration of their inoperability.*

- c. *Transfer system covers, service water pressure detection systems, and transfer leak detection systems PHYSICALLY CONNECTED to a WASTE transfer route with WASTE transfer pumps not locked in accordance with the administrative lock control program are controlled in accordance with LCO 3.1.1, "Transfer System Covers and Entry Doors;" LCO 3.1.2, "Service Water Pressure Detection Systems;" and LCO 3.1.3, "Transfer Leak Detection Systems," respectively.*

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	13 of 76

### 3.3 LIMITS (Cont.)

- 3.3.1 All portions of the test shall be completed before the system is either accepted or rejected.
- 3.3.2 All electrical and mechanical apparatus shall be operated as designed.

#### ACCEPTANCE CRITERIA

- 3.3.3 This Operational Test Procedure will be considered successful if all the following criteria are met:

##### 3.3.3.1 Winch W-0621

- Winch shall lower and raise the immersible pump and stop raise movement when retracted travel limit is reached. This test is unable to verify the extended travel interlock.

##### 3.3.3.2 Immersible Slurry Pump P-0621

- Pump P-0621 shall start and stop using START STOP switch.
- Pump P-0621 pump indicator lights shall work properly.

##### 3.3.3.3 Booster Pump Nitrogen Purge System

- PCV-06221 set at 325 (320 to 330) psig.
- PCV-06222 set at 50 (50 to 55) psig (Dry Impeller).
- FI-0622 indicates less than 10%.
- ANN-0621 Annunciator Window BOOSTER PUMP SEAL GAS TROUBLE (XA-06221) indicates ON when required.

##### 3.3.3.4 Booster Pump P-0622

- Pump P-0622 shall start and stop using the START and STOP switches.
- Pump P-0622 speed is adjustable from 1500 to approximately 3000 RPM locally.
- Pump P-0622 shall stop when COAST/STOP button is pushed.
- Pump P-0622 shall shutdown from local start when low suction pressure condition is present.
- Pump P-0622 indicators shall work properly.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 3	6/17/98	14 of 76

## 3.3 LIMITS (Cont.)

3.3.3.5 Sluicer S-1361

- Sluicer S-1361 shall pan left and right and maintain set position when in manual.
- Sluicer S-1361 shall tilt up and down and maintain set position when in manual.
- Sluicer S-1361 shall sweep left to - 90°, and right to 90° when in Automatic Pan Control.
- Sluicer S-1361 indicators shall work properly.

3.3.3.6 Sluice Pit 241-AY-02E Chiller

- Pit 241-AY-02E Chiller shall start and decrease Pit 241-AY-02E temperature.
- Pit 241-AY-102 Chiller indicators shall work properly.

3.3.3.7 Valve HV-0625

- Valve HV-0625 shall cycle and route water to Tank 214-C-106 or 241-AY-102 as selected.
- No visible leakage from flush jumper connection.
- No visible leakage from transfer jumper connections.
- Identified instruments respond to flush water flow.

(QC)

3.3.4 Indicates Quality Control (QC) Hold Points. When each hold point is reached no further steps are to be performed until a QC representative has signed off required step(s).

(HP)

3.3.5 Indicates Health Physics (HP) Hold Points. When each hold point is reached no further steps are to be performed until a HP representative has signed off required step(s).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	15 of 76

## 4.0 PREREQUISITES

### 4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

- ACROTECH TS-350A Transducer Simulator for inserting pump suction pressure signal.
- Means of communication between control room and equipment locations (i.e. radios/cell phones).
- One large straight bladed screwdriver.
- Three (3) temporary cameras.

### 4.2 PERFORMANCE DOCUMENTS

- TO-320-011, "OPERATE C-106 IN-TANK IMAGING SYSTEM".
- TO-320-014, "TRANSFER LINE FLUSHING"
- TO-060-050, "296-P-16 HVAC"
- TO-060-350, "AY/AZ TANK VENTILATION PRIMARY EXHAUST SYSTEM."
- TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".
- TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".
- 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".
- Operating procedures for temporary cameras (to be provided in Job Control System Work Packages).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	16 of 76

## 4.3 CONDITIONS AND ACTIONS

4.3.1 **VERIFY** Health Physics Technician support availability.

NOTE - A daily pre-job briefing shall be performed by the Test Director and documented in Attachment 1, OTP-320-003 TEST LOG.

4.3.2 **CONDUCT** an initial pretest briefing for all personnel involved in the performance of this Operational Test Procedure.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

NOTE - Signature Log requirement is ongoing as new individuals become involved in the procedure.

4.3.3 **ENSURE** all personnel to be involved with performance of this procedure have completed Attachment 3, OTP-320-003 SIGNATURE LOG.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.4 **REVIEW** LOCK & TAG LOGBOOK to verify all components are available for the test.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.5 **ENSURE** installed instrumentation requiring calibration is within current calibration cycle with calibration stickers affixed per ATTACHMENT 6, OTP-320-003 CALIBRATION DATA SHEET.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.6 **PERFORM** a walkdown inspection of the work area for unusual and/or hazardous conditions.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	17 of 76

**4.3 CONDITIONS AND ACTIONS (Cont.)**

4.3.7 ENSURE the following coverblocks are in place:

- Pit 241-C-06C.
- Pit 241-AY-02E.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.8 ENSURE the following jumpers are installed:

- Sluice Pit 241-AY-02E jumper between Sluice Booster Pump P-0622 and nozzle U2.
- Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to Sluicer S-1361.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.9 ENSURE Tank 241-C-106 Ventilation System is in operation per TO-060-050, "296-P16 HVAC."

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.10 ENSURE C-106 In-Tank Imaging System is in operation per TO-320-011, "Operate C-106 In Tank Imaging System."

TEST DIRECTOR INITIALS/DATE: N/A / this portion of test (action 5.6)

4.3.11 ENSURE electrical circuit breakers are aligned per Attachment 5, OTP-320-003 Electrical Lineup.

*Completed on Rev A*

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.12 ENSURE Tank 241-AY-102 Primary Ventilation System is in operation per TO-060-350, "AY/AZ Tank Ventilation Primary Exhaust System", AND NO "OUTLET PRIMARY VENT FLOW (LO)" alarms are activated.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

4.3.13 ENSURE the official Operational Test Procedure copy and all other photocopies to be used during testing are the latest approved revision.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/98

**4.3 CONDITIONS AND ACTIONS (Cont.)**

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.14 **ENSURE** C-Farm transfer leak detector LDE-1368 has been functionally tested in the previous 92 days per TF-FT-359-009 "PERFORM FUNCTIONAL TEST FOR C FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: ja / 6/18/96

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.15 **ENSURE** AY-Farm transfer leak detector LDE-102-32 has been functionally tested in the previous 92 days per TF-FT-259-007 "PERFORM FUNCTIONAL TEST FOR AY/AZ FARM TRANSFER LEAK DETECTORS".

TEST DIRECTOR INITIALS/DATE: ja / 6/18/96

NOTE - The Leak Detector Element will not be energized until electrical lineup is completed.

4.3.16 **ENSURE** encasement leak detector LDE-1364 has been functionally tested in the previous 192 days per 6-TF-042 "TESTING OF LIQUID DETECTOR (LIQUID LEVEL ELEMENT AND LEAK DETECTOR ELEMENT)".

TEST DIRECTOR INITIALS/DATE: ja / 6/18/96

4.3.17 **ENSURE** temporary cameras have been installed in the following locations per the Job Control System, **AND** the work package provides operating instructions:

- Tank 241-AY-102
  - Sluice Pit 241-AY-02E CAMERA PORT #1
  - Sluice Pit 241-C-06C CAMERA PORT
- N/A Not required for section 5.6*

TEST DIRECTOR INITIALS/DATE:           /          

4.3.18 **ESTABLISH** communication between control room and equipment locations.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/96

4.3.19 **OBTAIN** release from Operations management prior to continuing this test.

TEST DIRECTOR INITIALS/DATE: ja / 6/18/96

## 5.0 PROCEDURE

- NOTE - "RECORD" in a step indicates that data and/or initials are to be entered on Attachment 4, OTP-320-003 Data Sheet when conditions in the step are met.
- The acceptable range for required information is listed on Attachment 4, OTP-320-003 Data Sheet.
  - Annunciators may be acknowledged/reset as required throughout this procedure. Alarm status should be taken after resetting the annunciator panel.
  - Alarms/Faceplates will not reset/change until RESET button is pushed.

### 5.1 WINCH ASSEMBLY W-0621

#### CAUTION

During testing of the winch system, immersible pump P-0621 must not contact the waste surface.

#### CAUTION

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

#### Preparation/Initial Checks

- 5.1.1 **ENSURE** Administrative Locks are on the following breaker and disconnect **AND**,

#### RECORD:

- 5.1.1.1 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.1.1.2 VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC), disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	20 of 76

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

5.1.2 REMOVE Administrative Lock from ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621 AND,

POSITION breaker to ON.

THEN RECORD.

5.1.3 IF OFF, PRESS to test the following indicator lights RELEASE test button AND,

RECORD the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 1.

**TABLE 1 - SLURRY SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

5.1.4 RECORD Alarm Conditions at annunciator ANN-0621 (located on IE-0621) per Table 2.

**TABLE 2 - SLURRY SBM PUMP POSITION ANN-1361 ALARM STATUS**

WINDOW #	WINDOW TEXT	STATUS
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
8-2	SBM SLUICE PUMP P-0621 PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621)	OFF

5.1.5 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 (ZSL/ZSH-0621A) reading (located on IE-0621).

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

NOTE - Immersible pump Upper (ZSH-0621A) and Lower (ZSL-0621A) position switches can be adjusted at SBM SLUICE PUMP POSITION indicator ZI-0621.

- 5.1.6 SET Upper position switch ZSH-0621A to 5 inches.
- 5.1.7 RECORD the following:
- 5.1.7.1 ZSH-0621A SET to 5 inches.
- 5.1.7.2 WINCH UPPER LIMIT light ZLH-0621 ON.
- 5.1.8 SET Lower position switch ZSL-0621A to 25 inches.
- 5.1.9 RECORD the following:
- 5.1.9.1 ZSL-0621A SET to 25 inches.
- 5.1.9.2 WINCH LOWER LIMIT light ZLL-0621 OFF.
- 5.1.10 IF OFF, PRESS to test the following lights:
- RAISE light YL-0626A.
  - STOP light YL-0626B.
  - LOWER light YL-0626C.
- THEN RECORD.

**Verify Winch W-0621 Operation**

- 5.1.11 POSITION AND HOLD Winch RAISE/STOP/LOWER switch HS-0626 to LOWER.
- 5.1.12 RECORD the following:
- 5.1.12.1 HS-0626 position.
- 5.1.12.2 LOWER light YL-0626C ON.
- 5.1.12.3 STOP light YL-0626B OFF.
- 5.1.13 MONITOR ZI-0621,  
WHEN ZI-0621 indicates approximately 15 inches,  
THEN RELEASE HS-0626.

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

- 5.1.14 **RECORD** the following:
- 5.1.14.1 HS-0626 position.
  - 5.1.14.2 LOWER light YL-0626C OFF.
  - 5.1.14.3 STOP light YL-0626B ON.
  - 5.1.14.4 WINCH UPPER LIMIT light ZLH-0621 OFF.
  - 5.1.14.5 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) OFF.
- 5.1.15 **POSITION AND HOLD** switch HS-0626 to LOWER.
- 5.1.16 **RECORD** the following:
- 5.1.16.1 HS-0626 position.
  - 5.1.16.2 LOWER light YL-0626C ON.
  - 5.1.16.3 STOP light YL-0626B OFF.
- 5.1.17 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 30 inches, **RELEASE** HS-0626.
- 5.1.18 **RECORD** the following:
- 5.1.18.1 HS-0626 position.
  - 5.1.18.2 LOWER light YL-0626C OFF.
  - 5.1.18.3 STOP light YL-0626B ON.
  - 5.1.18.4 WINCH LOWER LIMIT light ZLL-0621 ON.
- 5.1.19 **POSITION AND HOLD** switch HS-0626 to RAISE.
- 5.1.20 **RECORD** the following:
- 5.1.20.1 HS-0626 position.
  - 5.1.20.2 RAISE light YL-0626A ON.
  - 5.1.20.3 STOP light YL-0626B OFF.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	23 of 76

**5.1 WINCH ASSEMBLY W-0621 (Cont.)**

- 5.1.21 **MONITOR** ZI-0621,  
**WHEN** ZI-0621 indicates approximately 0 inches, **RELEASE**  
switch HS-0626 **AND**,

**RECORD** the following:

- 5.1.21.1 ZI-0621 indicated position.
  - 5.1.21.2 RAISE light YL-0626A OFF.
  - 5.1.21.3 STOP light YL-0626B ON.
  - 5.1.21.4 WINCH UPPER LIMIT light ZLH-0621 ON.
  - 5.1.21.5 WINCH LOWER LIMIT light ZLL-0621 OFF.
  - 5.1.21.6 ANN-0621 alarm Window # 8-1 SBM SLUICE PUMP P-0621  
PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) ON.
  - 5.1.21.7 ANN-0621 alarm Window # 8-2 SBM SLUICE PUMP P-0621  
PUMP POSITION LOWER TRAVEL LIMIT (ZAL-0621) OFF.
  - 5.1.21.8 Alarm Horn XA-0621 SOUNDING.
- 5.1.22 **POSITION** ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
breaker WINCH STARTER (480 VAC) W-0621 to OFF **AND**,  
**INSTALL** Administrative Lock.
- 5.1.23 **RECORD** breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER  
WINCH STARTER position.
- 5.1.24 **RECORD** the following:
- 5.1.24.1 Test Director Section 5.1 complete.
  - 5.1.24.2 Quality Control Inspector **VERIFY** Section 5.1  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	24 of 76

**5.2 IMMERSIBLE SLUICE PUMP P-0621**

**CAUTION**

The lower swivel joints of the immersible pump discharge hose are presently in the tank waste. Operation of the winch and immersible pump are "Local Waste Disturbing Activities".

**Preparation/Initial Checks**

5.2.1 **ENSURE** Administrative Locks are on the following breaker and disconnect **AND**,

**RECORD:**

5.2.1.1 **ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.**

5.2.1.2 **VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH.**

5.2.2 **REMOVE** Administrative Lock from **ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC) AND,**

**POSITION** breaker to ON.

5.2.3 **IF OFF, PRESS** to test the following indicator lights **RELEASE** test button **AND,**

**RECORD** the indicator light status (located on IE-0621 in ELECTRICAL EQUIPMENT SKID) per Table 3.

**TABLE 3 - SLUICE SBM PUMP POSITION INDICATION STATUS**

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATING LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATING LIQUID LEVEL HIGH	OFF

## 5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)

5.2.4 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 reading (located on IE-0621).

5.2.5 RECORD ANN-0621 alarm status per Table 4.

TABLE 4 - SLUICE SBM PUMP ANN-0621 ALARM STATUS

WINDOW #	WINDOW TEXT	STATUS
1-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0621)	OFF
2-1	SBM SLUICE PUMP P-0621 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0621)	OFF
5-1	SBM SLUICE PUMP P-0621 MOTOR CURRENT HIGH (IAH-0621)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	ON
6-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	26 of 76

## 5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)

5.2.6 **RECORD** the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51):

- 5.2.6.1 PISL-0621
- 5.2.6.2 TISH-0621
- 5.2.6.3 TISHH-0621
- 5.2.6.4 TISH-0622A
- 5.2.6.5 IISH-0621A

### Verify Pump Operation

NOTE - Annunciator ANN-0621, Window 5-1, SBM SLUICE PUMP MOTOR CURRENT HIGH (IAH-0621) will alarm each time Immersible Sluice Pump P-0621 is started.

5.2.7 **ENSURE** LOCAL REMOTE switch HS-0635 selected to LOCAL (located on IMMERSIBLE PUMP P-0621 SOFT STARTER) **AND**,

**RECORD** HS-0635 position.

5.2.8 **IF OFF, PRESS** to check the following lights, **RELEASE** test button **AND**,

**CHECK** the light status:

- LOCAL light YL-0635A ON.
- REMOTE light YL-0635B OFF.
- MOTOR RUN light YL-0621A OFF.
- MOTOR STOP light YL-0621B ON.

**THEN RECORD.**

5.2.9 **CHECK** Annunciator ANN-0621, Window 7-1, SBM SLUICE PUMP P-0621 MOTOR CASE LEAK DETECTOR (LDA-0621) OFF

5.2.10 **ROTATE** and **RELEASE** START STOP switch HS-0621A to START.

5.2.11 **RECORD** the following:

- 5.2.11.1 HS-0621A ROTATED to START.
- 5.2.11.2 MOTOR RUN light YL-0621A ON.
- 5.2.11.3 MOTOR STOP light YL-0621B OFF.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	27 of 76

**5.2 IMMERSIBLE SLUICE PUMP P-0621 (Cont.)**

- 5.2.12 **OBSERVE** IISH-0621A (located on IE-0621),  
**WHEN** current reading has stabilized,  
  
**RECORD** pump current.
- 5.2.13 **ROTATE** and **RELEASE** START STOP switch HS-0621A to **STOP**.
- 5.2.14 **RECORD** the following:
- 5.2.14.1 HS-0621A **ROTATED** to **STOP**.
  - 5.2.14.2 **MOTOR** RUN light YL-0621A **OFF**.
  - 5.2.14.3 **MOTOR** STOP light YL-0621B **ON**.
- 5.2.15 **POSITION** breaker **ELECTRICAL** EQUIPMENT SKID GROUP  
**CONTROLLER**, IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC)  
to **OFF** **AND**,  
  
**INSTALL** Administrative Lock.
- 5.2.16 **RECORD** breaker **ELECTRICAL** EQUIPMENT SKID GROUP **CONTROLLER**,  
IMMERSIBLE PUMP P-0621 position.
- 5.2.17 **RECORD** the following:
- 5.2.17.1 Test Director Section 5.2 complete.
  - 5.2.17.2 Quality Control Inspector **VERIFY** Section 5.2  
complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	28 of 76

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM**Preparation/Initial Checks

- 5.3.1 ENSURE valve HV-06221 OPEN (located on Nitrogen Gas Control Panel).
- 5.3.2 CHECK Nitrogen Gas Bottles are in place and connected to the manifold at the Nitrogen Gas Bottle Station.
- 5.3.3 ENSURE all Nitrogen bottle valves are CLOSED.
- 5.3.4 RECORD ANN-0621 Window 4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) ON.

Slurry Booster Pump P-0622 Seal Gas Purge

- 5.3.5 CHECK nitrogen manifold valves are closed,
- 5.3.6 SLOWLY OPEN nitrogen bottle valve on right side nitrogen bottle.
- 5.3.7 OPEN nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.8 ENSURE PCV-06221 set at 325 (320 to 330) psig as indicated by the integral output pressure gauge (left gauge) AND,

**RECORD:**

- 5.3.8.1 PCV-06221 integral output pressure (left gauge).
- 5.3.8.2 PCV-06221 inlet pressure (right gauge).
- 5.3.8.3 PI-06220 right hand bottle pressure.
- 5.3.9 OPEN nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.10 CLOSE nitrogen bottle header manifold isolation valve for right side nitrogen bottle.
- 5.3.11 RECORD the following:
  - 5.3.11.1 PCV-06221 integral output pressure (left gauge).
  - 5.3.11.2 PCV-06221 inlet pressure (right gauge).
  - 5.3.11.3 PI-06221 middle bottle pressure.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	29 of 76

**5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM (Cont.)**

- 5.3.12 **OPEN** nitrogen bottle header manifold isolation valve for left side nitrogen bottle.
- 5.3.13 **CLOSE** nitrogen bottle header manifold isolation valve for middle nitrogen bottle.
- 5.3.14 **RECORD** the following:
- 5.3.14.1 PCV-06221 integral output pressure (left gauge).
  - 5.3.14.2 PCV-06221 inlet pressure (right gauge).
  - 5.3.14.3 PI-06222 left bottle pressure.
- 5.3.15 **ENSURE** PCV-06222 set to 165 (165 to 175) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** the following:
- 5.3.15.1 PI-06223 Pressure.
  - 5.3.15.2 FI-06221 indicates less than 10%.
  - 5.3.15.3 ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) OFF.
- 5.3.16 **ENSURE** PCV-06222 set to 50 (50 to 55) psig as indicated by pressure indicator PI-06223 **AND**,
- RECORD** set pressure.
- 5.3.17 **CHECK** the FI-06221 indicates less than 10% **AND**,
- RECORD** indicated % flow.
- 5.3.18 **RESET** Annunciator ANN-0621.
- 5.3.19 **RECORD** ANN-06221 Window #4-3 TANK 241-AY-102 BSTR PMP SEAL GAS TROUBLE (XA-06221) **ON**.
- 5.3.20 **RECORD** the following:
- 5.3.20.1 Test Director Section 5.3 complete.
  - 5.3.20.2 Quality Control Inspector **VERIFY** Section 5.3 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	30 of 76

## 5.4 SLUICE BOOSTER PUMP P-0622

**CAUTION**

Booster Pump P-0622 must not be started without Nitrogen Purge System Operating (see section 5.3). In addition, continuous operating time should be kept to a minimum (<30 minutes) and speed should be kept over 1500 RPM.

Preparation/Initial Checks

- 5.4.1 **ENSURE** Sluice Booster Pump Nitrogen Purge System is in operation per Section 5.3.
- 5.4.2 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51) **AND**,
- INSTALL** Lock and Tag:
- CK 10 OPER STATION RCPT, OFF
  - CK 12 OPER STATION IE-0621, OFF
- 5.4.3 Responsible Craft **PERFORM AND RECORD** the following to bypass Immersible Sluice Pump P-0621 discharge pressure interlock PISL-0621 (located in IE-0621 on back of (PISL-0621):
- 5.4.3.1 **DISCONNECT** PISL-0621 per FIGURE 1:
- 5.4.3.2 **CONNECT** pressure simulator per FIGURE 1.
- 5.4.4 **REMOVE** Lock and Tag **AND**,
- POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
- CK 10 OPER STATION RCPT, ON
  - CK 12 OPER STATION IE-0621, ON
- 5.4.5 **ADJUST** pressure simulator until PISL-0621 indicates a minimum of 50 psig **AND**,
- RECORD.**

Type	Document No	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	31 of 76

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

**WARNING**

Removing shield plug may cause changes in tank pressure and activate tank pressurization alarms.

- 5.4.6 NOTIFY 702-AZ operator AND Computer Automated Surveillance System operator of potential alarm activation prior to the removal of tape or plug from 241-AY-02E winch vent.

N/A

\_\_\_\_\_

Test Director Initial Date

NOTE - Winch vent is currently covered with tape for AY-102 ventilation in-leakage control.

- 5.4.7 ENSURE Sluice Pit 241-AY-02E winch vent is clear (free of plug, or tape).
- 5.4.8 ENSURE Administrative Locks are on the following breakers AND,

**RECORD:**

- 5.4.8.1 ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621.
- 5.4.8.2 ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC).
- 5.4.9 REMOVE Administrative Lock from VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH AND,

POSITION disconnect to ON.

THEN RECORD.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	32 of 76

## 5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

5.4.10 IF OFF, PRESS to test the following indicator lights,  
RELEASE test button AND,

RECORD the indicator light status (located on IE-0621 in  
ELECTRICAL EQUIPMENT SKID) per Table 5.

TABLE 5 - SLUICE SBM PUMP POSITION INDICATION STATUS

INDICATOR LIGHT	DESCRIPTION	STATUS
ZLH-0621	WINCH UPPER LIMIT	ON
ZLL-0621	WINCH LOWER LIMIT	OFF
LLL-0621	SLUICING OPERATIONS LIQUID LEVEL LOW (NPSHR)	ON
LLH-0621	SLUICING OPERATIONS LIQUID LEVEL HIGH	OFF

5.4.11 RECORD SBM SLUICE PUMP POSITION indicator ZI-0621 reading  
(located on IE-0621).

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	33 of 76

5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)

5.4.12 RECORD ANN-0621 alarm status per Table 6.

TABLE 6 - PUMP ANN-0621 ALARM STATUS

WINDOW #	WINDOW TEXT	STATUS
1-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH HIGH (TAHH-0629)	OFF
2-2	SLUICE BOOSTER PUMP P-0622 MOTOR STATOR WINDINGS TEMP HIGH (TAH-0629)	OFF
3-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #2 TEMP HIGH (TAH-06210B)	OFF
4-2	SLUICE BOOSTER PUMP P-0622 MOTOR BEARING #1 TEMP HIGH (TAH-06210A)	OFF
4-3	TANK 241-AY-102 BSTR PUMP SEAL GAS TROUBLE (XA-06221)	ON
5-2	SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622)	OFF
5-4	SBM PUMP P-0621 OPERATING LIQUID LEVEL HIGH (LAH-0621)	OFF
6-2	SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622)	ON
6-4	SBM PMP P-0621 OPERATING LIQUID LEVEL LOW (LAL-0621)	ON
7-2	SLUICE BOOSTER PUMP P-0622 VSD TROUBLE (XA-0622)	ON
8-1	SBM SLUICE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621)	ON
6-1	SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621)	OFF

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

- 5.4.13 **RECORD** the following readings (located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51 and VARIABLE SPEED DRIVE P-0622 CONTROL PANEL C):
- 5.4.13.1 PISL-0622
  - 5.4.13.2 TI-06210A
  - 5.4.13.3 TI-06210B
  - 5.4.13.4 TI-0629
  - 5.4.13.5 II-0622
  - 5.4.13.6 EI-0621
- 5.4.14 **PRESS** FAULT RESET HS-0625.
- 5.4.15 **CHECK** that the keypad display on Control Panel A indicates "No Errors", **THEN** displays "RDY".
- 5.4.16 **ENSURE** COAST/STOP button HS-0624C **RETRACTED**.
- 5.4.17 **IF** OFF, **PRESS** to check the following lights, **RELEASE** test button **AND**,
- CHECK** the following:
- **POWER ON** light YL-0622 **ON**.
  - **FAULT** light YL-0625 **OFF**.
  - **PUMP RUNNING** light YL-0624A **OFF**
  - **PUMP STOPPED** light YL-0624B **ON**.
- THEN RECORD**.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	35 of 76

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)****Pump Operation STOP Switch Shutdown**

NOTE - Annunciator ANN-0621, Window 5-2, SLUICE BOOSTER PUMP P-0622 MOTOR CURRENT HIGH (IAH-0622) will alarm each time Sluice Booster Pump P-0622 is started.

5.4.18 SET speed controller SC-0621 to 0% AND,  
RECORD.

5.4.19 ENSURE personnel are clear of Pit 241-AY-02E.

5.4.20 PRESS START switch HS-0624A.

5.4.21 RECORD the following:

5.4.21.1 HS-0624A PRESSED to START.

5.4.21.2 PUMP RUNNING light YL-0624A ON.

5.4.21.3 PUMP STOPPED light YL-0624B OFF.

5.4.22 RECORD readings from the following indicators.

5.4.22.1 IISH-0622.

5.4.22.2 II-0622.

5.4.22.3 EI-0621.

5.4.22.4 SI-0621.

5.4.23 ADJUST speed controller SC-0621 to 100%.

5.4.24 RECORD the following:

5.4.24.1 SC-0621 setting.

5.4.24.2 IISH-0622.

5.4.24.3 II-0622.

5.4.24.4 EI-0621.

5.4.24.5 SI-0621.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	36 of 76

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

NOTE - The Booster Pump will ramp down and then stop when the STOP switch is pushed.

5.4.25 **PRESS** STOP switch HS-0624B.

5.4.26 **RECORD** the following:

5.4.26.1 HS-0624B PRESSED to STOP.

5.4.26.2 PUMP RUNNING light YL-0624A OFF.

5.4.26.3 PUMP STOPPED light YL-0624B ON.

**Pump Operation COAST/STOP Button Shutdown**

5.4.27 **ENSURE** personnel are clear of Pit 241-AY-02E.

5.4.28 **PRESS** FAULT RESET HS-0625.

5.4.29 **PRESS** START switch HS-0624A.

5.4.30 **RECORD** the following:

5.4.30.1 HS-0624A PRESSED to START.

5.4.30.2 PUMP RUNNING light YL-0624A ON.

5.4.30.3 PUMP STOPPED light YL-0624B OFF.

5.4.31 **PRESS** COAST/STOP button HS-0624C to FULLY INSERTED.

5.4.32 **RECORD** the following:

5.4.32.1 HS-0624C position.

5.4.32.2 PUMP RUNNING light YL-0624A OFF.

5.4.32.3 PUMP STOPPED light YL-0624B ON.

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**Verify Pump Low Suction Pressure Interlock

- 5.4.33 POSITION COAST/STOP button HS-0624C to FULLY RETRACTED AND,  
RECORD.
- 5.4.34 ENSURE personnel are clear of Pit 241-AY-02E.
- 5.4.35 PRESS FAULT RESET HS-0625.
- 5.4.36 PRESS START switch HS-0624A.
- 5.4.37 RECORD the following:
- 5.4.37.1 HS-0624A PRESSED to START.
  - 5.4.37.2 PUMP RUNNING light YL-0624A ON.
  - 5.4.37.3 PUMP STOPPED light YL-0624B OFF.
- 5.4.38 SLOWLY DECREASE pressure simulator setting.  
UNTIL PUMP RUNNING light YL-0624A indicates OFF.
- 5.4.39 RECORD the following:
- 5.4.39.1 PISL-0621 pressure.
  - 5.4.39.2 PUMP RUNNING light YL-0624A OFF.
  - 5.4.39.3 PUMP STOPPED light YL-0624B ON.
  - 5.4.39.4 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRESS LOW (PAL-0621), ON.
- 5.4.40 POSITION VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH to OFF AND,  
INSTALL Administrative Lock.
- 5.4.41 RECORD VARIABLE SPEED DRIVE P-0622, PANEL B, IN-LINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect, BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH position.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	38 of 76

**5.4 SLUICE BOOSTER PUMP P-0622 (Cont.)**

5.4.42 Responsible Craft **PERFORM** the following to P-0622 suction pressure interlock:

5.4.42.1 **ENSURE** the following breakers OFF, and Locked and Tagged.

- CK 10 OPER STATION RCPT, OFF
- CK 12 OPER STATION IE-0621, OFF

5.4.42.2 **DISCONNECT** pressure simulator per FIGURE 1 **AND**,  
**RECORD.**

5.4.42.3 **CONNECT** PISL-0621 leads per FIGURE 1 **AND**,  
**RECORD.**

5.4.42.4 **REMOVE** the Lock and Tag from the following breakers **AND POSITION** as follows:

- CK 10 OPER STATION RCPT, ON
- CK 12 OPER STATION IE-0621, ON

5.4.43 **RECORD** the following:

5.4.43.1 Test Director Section 5.4 complete.

5.4.43.2 Quality Control Inspector **VERIFY** Section 5.4 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 3	6/17/98	39 of 76

## 5.5 SLUICER S-1361

Preparation/Initial Checks

- 5.5.1 CHECK fluid level in hydraulic reservoir (located at SHC-1361).
- 5.5.2 IF reservoir is less than 1/2 full, REQUEST Responsible Craft FILL reservoir to 1/2 full.
- 5.5.3 ENSURE breaker MCC-N1 1FB SLUICER HYDRAULIC POWER UNIT ON (located in 241-C-51).
- 5.5.4 RECORD the following (located at CB-01 in M0211):
  - 5.5.4.1 Sluicer Pump OFF light YL-13613B ON.
  - 5.5.4.2 Sluicer Pump ON light YL-13613A OFF.
  - 5.5.4.3 Sluicer TILT OFF light YL-13615B ON.
  - 5.5.4.4 Sluicer TILT ON light YL-13615A OFF.
- 5.5.5 POSITION SLUICER PAN AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.6 RECORD the following:
  - 5.5.6.1 HS-13614 position
  - 5.5.6.2 MAN light YL-13614B ON
  - 5.5.6.3 AUTO light YL-13614A OFF.
- 5.5.7 REQUEST Surveillance Operator ALIGN the 241-C-106 in-tank video imaging system per T0-320-011, "Operate C-106 In-Tank Imaging system" to view the sluicer AND BEGIN RECORDING.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A 3	6/17/98	40 of 76

## 5.5 SLUICER S-1361 (Cont.)

HNF-3057, Rev.0

Page A3-41

Sluicer Operation - Manual Pan Control

NOTE - Each movement of the sluicer nozzle should be checked with the in-tank video imaging system.

5.5.8 POSITION SLUICER SYSTEM ON/OFF switch HS-13613 to ON.

5.5.9 RECORD the following:

5.5.9.1 HS-13613 position

5.5.9.2 Sluicer Pump ON light YL-13613A ON

5.5.9.3 Sluicer Pump OFF light YL-13613B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.10 BUMP joystick ZC-1361 to right and left AND,

RECORD sluicer nozzle responded accordingly via in-tank video imaging system.

5.5.11 POSITION joystick ZC-1361 to the right AND,

RECORD reading on position indicator ZI-13614 INCREASES.

5.5.12 RELEASE joystick ZC-1361 AND,

RECORD ZI-13614 maintains reading.

5.5.13 POSITION joystick ZC-1361 to the left AND,

RECORD reading on position indicator ZI-13614 DECREASES.

5.5.14 RELEASE joystick ZC-1361 AND,

RECORD ZI-13614 maintains reading.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	41 of 76

## 5.5 SLUICER S-1361 (Cont.)

Sluicer Operation - Tilt Control

5.5.15 POSITION SLUICER TILT CONTROL ON/OFF switch HS-1364 to ON.

5.5.16 RECORD the following:

5.5.16.1 HS-1364 position

5.5.16.2 TILT ON light YL-13615A ON

5.5.16.3 TILT OFF light YL-13615B OFF.

NOTE - It may take several operations of the joystick to see movement of the sluicer due the possibility of entrapped air in the hydraulic system.

5.5.17 BUMP joystick ZC-1361 up and down AND,

RECORD sluicer nozzle responded accordingly via in-tank video imaging system.

5.5.18 POSITION Joystick ZC-1361 down (pushed forward) until ZI-13613 indicates -40 ° AND,

RECORD ZI-13613 reading.

5.5.19 RELEASE joystick ZC-1361 AND,

RECORD ZI-13613 maintains reading.

5.5.20 POSITION Joystick ZC-1361 upward (pulled back) until ZI-13613 indicates 90 ° AND,

RECORD ZI-13613 reading.

5.5.21 RELEASE joystick ZC-1361 AND,

RECORD ZI-13613 maintains reading.

**5.5 SLUICER S-1361 (Cont.)****Sluicer Operation - Automatic Pan Control**

- NOTE - Sluicer pan left and right limit switches ZS-13614L and ZS-13614R) can be manually adjusted at SLUICER PAN POSITION indicator ZI-13614.
- 5.5.22 SET sluicer pan left limit switch ZS-13614L to - 90° **AND**,  
**RECORD.**
- 5.5.23 SET sluicer pan right limit switch ZS-13614R to 90° **AND**,  
**RECORD.**
- 5.5.24 **POSITION** SLUICER PAN AUTO/MANUAL switch HS-13614 to AUTO.
- 5.5.25 **RECORD** the following:
- 5.5.25.1 HS-13614 position
- 5.5.25.2 MAN light YL-13614B OFF.
- 5.5.25.3 AUTO light YL-13614A ON.
- 5.5.26 **MONITOR** ZI-13614 **AND**,  
**RECORD** ZI-13614 indicates a continuous sweep from -90° to 90°.
- 5.5.27 **CHECK** via in-tank video imaging system that the sluicer is rotating.
- 5.5.28 **POSITION** SLUICER AUTO/MANUAL switch HS-13614 to MAN.
- 5.5.29 **RECORD** the following:
- 5.5.29.1 HS-13614 position
- 5.5.29.2 MAN light YL-13614B ON.
- 5.5.29.3 AUTO light YL-13614A OFF.
- 5.5.30 **CHECK** via in-tank video imaging system that the sluicer has stopped rotating.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	43 of 76

**5.5 SLUICER S-1361 (Cont.)**

NOTE - At this point the in-tank video imaging system is not required and may be shut off at the Test Directors discretion.

5.5.31 **POSITION** SLUICER TILT CONTROL ON/OFF switch HS-1364 to OFF.

5.5.32 **CHECK** the following:

- TILT ON light YL-13615A OFF.
- TILT OFF light YL-13615B ON.

**THEN RECORD.**

5.5.33 **POSITION** SLUICER HYDRAULIC SYSTEM ON/OFF switch HS-13613 to OFF.

5.5.34 **CHECK** the following:

- Sluicer Pump ON light YL-13613A OFF.
- Sluicer Pump OFF light YL-13613B ON.

**THEN RECORD.**

5.5.35 **OPEN** breaker MCC-N1 A1A SLUICER HYDRAULIC UNIT POWER.

5.5.36 **RECORD** the following:

5.5.36.1 Test Director Section 5.5 complete.

5.5.36.2 Quality Control Inspector **VERIFY** Section 5.5 complete.



Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	44 of 76

**5.6 SLUICE PIT 241-AY-02E CHILLER**

HNF-3057, Rev.0

Page A3-45

Preparation/Initial Checks

- 5.6.1 **ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), OFF.
- 5.6.2 **POSITION** PIT-02E COOLER DISCONNECT (480 VAC) to ON.

**WARNING**

A Zero Energy Check is required when opening R-0621 MAIN ELECTRICAL CONTROL BOX.

- 5.6.3 **ENSURE** the following equipment circuit breakers in AUTO (located at Pit Chiller R-0621 MAIN ELECTRICAL CONTROL BOX) .
- Comp
  - Fan L
  - Fan H
  - S.P.
  - By-P
- 5.6.4 **ENSURE** the following Chiller control panel switches are in OFF (NOT ILLUMINATED) (located on chiller control panel):
- COMPRESSOR ON
  - SYSTEM PUMP ON
  - BY-PASS PUMP ON
- 5.6.5 **CHECK** Pit Chiller chilled water storage tank level is approximately 2 inches from top of tank (sight glass located on side of tank) as follows:
- 5.6.5.1 **ENSURE** the following valves OPEN:
- UPPER sight glass isolation valve
  - LOWER sight glass isolation valve
- 5.6.5.2 **CHECK** sight glass level (LG-0621)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	45 of 76

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

HNF-3057, Rev.0

Page A3-46

- 5.6.5.3 IF chilled water storage tank level is greater than 2 inches from top of tank, **ADD** 46% glycol solution (freeze protection to - 20 ° F) to tank as follows:
- ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
  - SLOWLY REMOVE** fill cap and air eliminator
  - ADD** glycol solution UNTIL sightglass indicates approximately 2 inches from top of tank.
  - INSTALL** fill cap and air eliminator.
- 5.6.5.4 IF chilled water storage tank level is less than 1 inch from top of tank, **REMOVE** glycol solution from tank as follows:
- ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), OFF
  - SLOWLY REMOVE** fill cap and air eliminator
  - OBTAIN** a small portable pump **AND PUMP** glycol solution into a suitable sized container UNTIL sightglass indicates approximately 2 inches from top of tank.
  - INSTALL** fill cap and air eliminator.
- 5.6.6 **ENSURE** the following valves CLOSED:
- HV-0622
  - HV-0623
- 5.6.7 **ENSURE** "supply valve" from chiller storage tank to system and Bypass pump OPEN.
- 5.6.8 **ENSURE** PIT-02E COOLER FEEDER BRKR (480 VAC), ON.
- 5.6.9 **POSITION** PIT-02E COOLER DISCONNECT (480 VAC) to OFF.
- 5.6.10 **INSTALL** Personal Locking Device.
- 5.6.11 In Pit Chiller Control Panel R-0621, and on the rear of TIC-06213, **DISCONNECT** TE-06213 lead wires from terminals 6, 7, **AND** 8.
- ~~5.6.12 **CONNECT** RTD Readout to TE-06213 lead wires~~
- 5.6.13 **CONNECT** RTD simulator, set at 85° F, to terminals 6, 7, **AND** 8.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	46 of 76

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

- 5.6.14 REMOVE Personal Locking Device.
- 5.6.15 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.
- 5.6.16 RECORD reading from temperature controller TIC-06213.

**CAUTION**

To prevent equipment damage the power to this cooler must be on for 4 hours before the cooler is started.

**Chiller Operation**

- 5.6.17 POSITION FSC-1 to 1200 FT<sup>3</sup>/MIN.
- 5.6.18 POSITION BY-PASS PUMP ON switch to ON.
- 5.6.19 CHECK BY-PASS PUMP ON light switch ILLUMINATED.
- 5.6.20 POSITION COMPRESSOR ON switch to ON.
- ~~5.6.21 CHECK COMPRESSOR ON light switch is ILLUMINATED.~~
- 5.6.22 ADJUST RTD simulator until TIC-06213 reads 100° F.
- ~~5.6.23 VERIFY COMPRESSOR ON light switch ILLUMINATES at >90° F on TIC 06213.~~
- ~~5.6.24 RECORD TIC 06213 indication when compressor starts.~~
- 5.6.25 MONITOR TI-0621A (temperature of water out of chiller). ~~WHEN it reads chiller cycles at approximately 60°F~~ **PERFORM** the following:
  - 5.6.25.1 RECORD the following:
    - A. TI-0621A (temperature of water out of chiller, located at WATER CHILLER UNIT R-0621).
    - B. TI-0621B (temperature of water into chiller, located at WATER CHILLER UNIT R-0621).
    - C. Annunciator ANN-0621, Window 7-3, SLUICE PIT 02E PIT TEMP HIGH (TAH-06213) status
  - ~~5.6.25.2 RECORD reading from RTD Readout.~~
  - 5.6.25.3 OPEN valve HV-0623
  - 5.6.25.4 OPEN valve HV-0622

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP 320-003	A-3	6/17/98	47 of 76

## 5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)

- 5.6.25.5 POSITION SYSTEM PUMP ON switch to ON.
- 5.6.25.6 CHECK SYSTEM PUMP ON light switch ILLUMINATED.
- 5.6.25.7 RUN chiller unit a minimum of 2 hours.
- 5.6.25.8 RECORD reading from RTD Readout every 15 minutes.
- 5.6.25.9 COMPARE readings obtained in steps 5.6.25.2 and 5.6.25.8 AND VERIFY pit temperature has decreased.
- 5.6.26 ADJUST RTD simulator to 85° F on TIC-06213.
- 5.6.27 VERIFY COMPRESSOR ON light goes OFF at <math>\leq 90^{\circ}</math> F.
- 5.6.28 RECORD TIC-06213 indication when compressor shuts down.
- 5.6.29 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to OFF.
- 5.6.30 INSTALL Personal Locking Device.
- 5.6.31 In Pit Chiller Control Panel R-0621, DISCONNECT RTD Readout from TE-06213 lead wires.
- 5.6.32 In Pit Chiller Control Panel R-0621, and on the rear of TIC-06213, DISCONNECT RTD simulator from terminals 6, 7, AND 8.
- 5.6.33 CONNECT TE-06213 lead wires to terminals 6, 7, AND 8.
- 5.6.34 REMOVE Personal Locking Device.
- 5.6.35 POSITION PIT-02E COOLER DISCONNECT (480 VAC) to ON.
- 5.6.36 RECORD that TE-06213 leads wires have been re-connected.

**5.6 SLUICE PIT 241-AY-02E CHILLER (Cont.)**

- 5.6.37 **SHUT DOWN** the pit chiller as follows:
- 5.6.37.1 **POSITION** SYSTEM PUMP ON switch to OFF.
  - 5.6.37.2 **VERIFY** SYSTEM PUMP ON switch light OFF.
  - 5.6.37.3 **CLOSE** valve HV-0622.
  - 5.6.37.4 **CLOSE** valve HV-0623.
  - 5.6.37.5 **POSITION** COMPRESSOR ON switch to OFF.
  - 5.6.37.6 **VERIFY** COMPRESSOR ON switch light OFF.
  - 5.6.37.7 **POSITION** BY-PASS PUMP ON switch to OFF.
  - 5.6.37.8 **VERIFY** BY-PASS PUMP ON switch light OFF.
  - 5.6.37.9 **POSITION** PIT-02E COOLER DISCONNECT (480 VAC) to OFF.
  - 5.6.37.10 **POSITION** ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, PIT 02E CHILLER FEEDER BRKR to OFF.
- 5.6.38 **RECORD** the following:
- 5.6.38.1 Test Director Section 5.6 complete.
  - 5.6.38.2 Quality Control Inspector **VERIFY** Section 5.6 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	49 of 76

## 5.7 VERIFY VALVE HV-0625 OPERATION

- 5.7.1 **REQUEST** Surveillance Operator **ALIGN** the following cameras for viewing water addition activities:
- Tank 241-C-106 in-tank video imaging system per TO-320-011, "Operate C-106 In-Tank Imaging System".
  - Temporary camera in Sluice Pit 241-AY-02E CAMERA PORT #1 per Job Control System Work Package.
  - Tank 241-AY-102 temporary in-tank video imaging system per Job Control System Work Package.
  - Temporary camera in Sluice Pit 241-C-06C CAMERA PORT per Job Control System Work Package.
- 5.7.2 **ENSURE** HV-13611 (Supernate Line SN-200-M9 Encasement Drain, located in Sluice Pit 241-C-06C) positioned to OPER.
- 5.7.3 **MONITOR** the following while performing step 5.7.4 below **AND RECORD**:
- 5.7.3.1 Sluice Pit 241-AY-02E for leakage from flush jumper and transfer line nozzles U2 and A.
- 5.7.3.2 Sluice Pit 241-C-06C for leakage from transfer line wall nozzle to sluicer.
- 5.7.3.3 Flow through Sluicer S-1361 into TANK 241-C-106 with HV-0625 CLOSED.
- 5.7.3.4 Indication of flow into TANK 241-AY-102 through Immersible Pump P-0621 suction (and possibly anti-siphon holes) with HV-0625 OPEN.
- NOTE - The following readings are located on instrument enclosure IE-0621 in Electrical Equipment Skid 241-AY-51.
- The indicators must be checked when flow is routed to TK-241-AY-102.
- 5.7.3.5 PISL-0621
- 5.7.3.6 Annunciator ANN-0621, Window 6-1, SBM SLUICE PUMP P-0621 DISCHARGE PRES LOW (PAL-0621) status.
- 5.7.3.7 PISL-0622

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	50 of 76

**5.7 VERIFY VALVE HV-0625 OPERATION (Cont.)**

- 5.7.3.8 Annunciator ANN-0621, Window 6-2, SLUICE BOOSTER PUMP P-0622 DISCHARGE PRESS LOW (PAL-0622) status.
- 5.7.3.9 FQI-0621
- 5.7.3.10 FI-0621
- 5.7.3.11 ZLH-0625 ON when HV-0625 OPEN (ZLL-0625 OFF).
- 5.7.3.12 ZLL-0625 ON when HV-0625 CLOSED (ZLH-0625 OFF).
- 5.7.4 **FLUSH** Supernate Line SL-200,  
**AND CYCLE** valve HV-0625 per TO-320-014 "WRSS Transfer Line Flushing.
- 5.7.5 **RECORD** the following:
  - 5.7.5.1 Test Director Section 5.7 complete.
  - 5.7.5.2 Quality Control Inspector **VERIFY** Section 5.7 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	51 of 76

**5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS** Page A3-52**5.8.1 PERFORM AND RECORD** the following:

- 5.8.1.1 **POSITION** Mini Power Panel AY-102-PP1 circuit breakers as follows (located in Electrical Skid Building 241-AY-51):
- A. CK 10 OPER STATION RCPT, OFF
  - B. CK 12 OPER STATION IE-0621, OFF
- 5.8.1.2 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID, GROUP CONTROLLER breaker WINCH STARTER (480 VAC) W-0621, OFF, **AND** Administrative Lock installed.
- 5.8.1.3 **ENSURE** circuit breaker ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER, breaker IMMERSIBLE PUMP P-0621 FEEDER BRKR (480 VAC), OFF, **AND** Administrative Lock installed.
- 5.8.1.4 **ENSURE** VARIABLE SPEED DRIVE P-0622, PANEL B, INLINE SLUICE BOOSTER PUMP P-0622 VSD CONTROLLER (480 VAC) disconnect BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH, OFF, **AND** Administrative Lock installed.
- 5.8.1.5 **CLOSE** nitrogen bottle valve opened in Section 5.3 step 5.3.5.
- 5.8.1.6 **INSTALL** Sluice Pit 241-AY-02E winch vent plug per Shift Managers instruction.
- 5.8.1.7 Test Director Section 5.8 complete.
- 5.8.1.8 Quality Control Inspector **VERIFY** Section 5.8 complete.

(QC)

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	52 of 76

5.9 TEST CLOSURE

5.9.1 QUALITY CONTROL: REVIEW all Attachments for completeness, legibility, and accuracy.

(QC)

QUALITY CONTROL SIGNATURE/DATE: W. Adams 17/17/98

5.9.2 Listed reviewers SIGN below indicating all acceptance criteria has been met and that the installed WRSS Slurry Transfer System is functional and ready for operational use.

TEST DIRECTOR:	<i>J. Anderson</i>	DATE:	7/17/99
COG ENGINEER:	<i>L. L. Pomeroy</i>	DATE:	07/17/98
DST SHIFT MANAGER:	① N/A	DATE:	

CONCURRENCE WITH G.R. BELLAMY per telecon RSP  
① Test Director is qualified DST shift Manager



**This page left intentionally blank**



**ATTACHMENT 4 - OTP-320-003 DATA SHEET**

DATE OF TEST:			RECORD	
STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.1 WINCH ASSEMBLY W-0621</b>				
<b>Preparation/Initial Checks</b>				
5.1.1.1	P-0621 BREAKER	LOCKED OFF		
5.1.1.2	P-0622 DISCONNECT	LOCKED OFF		
5.1.2	ADMIN LOCKS REMOVED	YES		
5.1.3	TABLE 1 STATUS CORRECT	YES		
5.1.4	TABLE 2 STATUS CORRECT	YES		
5.1.5	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.1.7.1	ZSH-0621A SET	5 INCHES		
5.1.7.2	ZLH-0621 INDICATION	ON		
5.1.9.1	ZSL-0621A SET	25 INCHES		
5.1.9.2	ZLL-0621 INDICATION	OFF		N/A
5.1.10	LIGHT TEST	3 LIGHTS FUNCTION		
<b>Verify Winch W-0621 Operation</b>				
5.1.12.1	HS-0626 POSITION	LOWER		
5.1.12.2	YL-0626C INDICATION	ON		
5.1.12.3	YL-0626B INDICATION	OFF		
5.1.14.1	HS-0626 POSITION	STOP		
5.1.14.2	YL-0626C INDICATION	OFF		
5.1.14.3	YL-0626B INDICATION	ON		
5.1.14.4	ZLH-0621 INDICATION	OFF		
5.1.14.5	ZAH-0621 STATUS	OFF		
5.1.16.1	HS-0626 POSITION	LOWER		
5.1.16.2	YL-0626C INDICATION	ON		

*performed on Row A-2 ja 6/18/98*

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.1.16.3	YL-0626B INDICATION	OFF		
5.1.18.1	HS-0626 POSITION	STOP		
5.1.18.2	YL-0626C INDICATION	OFF		
5.1.18.3	YL-0626B INDICATION	ON		
5.1.18.4	ZLL-0621 INDICATION	ON		
5.1.20.1	HS-0626 POSITION	RAISE		
5.1.20.2	YL-0626A INDICATION	ON		
5.1.20.3	YL-0626B INDICATION	OFF		
5.1.21.1	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.1.21.2	YL-0626A INDICATION	OFF		
5.1.21.3	YL-0626B INDICATION	ON		
5.1.21.4	ZLH-0621 INDICATION	ON		
5.1.21.5	ZLL-0621 INDICATION	OFF		
5.1.21.6	ZAH-0621 STATUS	ON		
5.1.21.7	ZAL-0621 STATUS	OFF		
5.1.21.8	XA-0621 STATUS	SOUNDING		
5.1.23	WINCH W-0621 BREAKER	LOCKED OFF		
5.1.24.1	SECTION 5.1 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.1.24.2	SECTION 5.1 COMPLETE	QC INSPECTOR INITIALS/DATE		

Performed on Rev A-2  
 Ju 6/17/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.2 IMMERSIBLE SLUICE PUMP P-0621</b>				
<b>Preparation/Initial Checks</b>				
5.2.1.1	WINCH W-0621 BREAKER	LOCKED OFF		
5.2.1.2	P-0622 DISCONNECT	LOCKED OFF		
5.2.3	TABLE 3 STATUS CORRECT	YES		
5.2.4	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.2.5	TABLE 4 STATUS CORRECT	YES		
5.2.6.1	PISL-0621 INDICATION	LESS THAN 5 PSIG		
5.2.6.2	TISH-0621 INDICATION	50 to 330 °F		
5.2.6.3	TISHH-0621 INDICATION	50 to 340 °F		
5.2.6.4	TISH-0622A INDICATION	50 to 225 °F		
5.2.6.5	IISH-0621A INDICATION	LESS THAN 2 AMPS		
<b>Verify Pump Operation</b>				
5.2.7	HS-0635 POSITION	LOCAL		
5.2.8	LIGHT TEST	4 LIGHTS FUNCTION		
5.2.11.1	HS-0621A POSITION	ROTATED TO START		
5.2.11.2	YL-0621A INDICATION	ON		
5.2.11.3	YL-0621B INDICATION	OFF		
5.2.12	IISH-0621A INDICATION	20 to 24 AMPS		
5.2.14.1	HS-0621A POSITION	ROTATED TO STOP		
5.2.14.2	YL-0621A INDICATION	OFF		
5.2.14.3	YL-0621B INDICATION	ON		
5.2.16	P-0621 BREAKER	LOCKED OFF		
5.2.17.1	SECTION 5.2 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.2.17.2	SECTION 5.2 COMPLETE	QC INSPECTOR INITIALS/DATE		

Performed on Rev A-1  
 Jca 6/18/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.3 SLUICE BOOSTER PUMP NITROGEN PURGE SYSTEM</b>				
5.3.4	XA-06221 STATUS	ON		
5.3.8.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.8.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.8.3	PI-06220 INDICATION	AS FOUND		
5.3.11.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.11.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.11.3	PI-06221 INDICATION	AS FOUND		
5.3.14.1	PCV-06221 INTEGRAL INDICATION	320 to 330 PSIG		
5.3.14.2	PCV-06221 INLET PRESSURE	AS FOUND		
5.3.14.3	PI-06222 INDICATION	AS FOUND		
5.3.15.1	PI-06223 INDICATION	165 to 175 PSIG		
5.3.15.2	FI-06221 INDICATION	LESS THAN 10%		
5.3.15.3	XA-06221 STATUS	OFF		
5.3.16	PI-06223 INDICATION	50 to 55 PSIG		
5.3.17	FI-06221 INDICATION	LESS THAN 10%		
5.3.19	XA-06221 STATUS	ON		
5.3.20.1	SECTION 5.3 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.3.20.2	SECTION 5.3 COMPLETE	QC INSPECTOR INITIALS/DATE		

N/A

Performed on Rev A-1  
 Ja 6/19/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.4 SLUICE BOOSTER PUMP P-0622 OPERATION</b>				
<b>Preparation/Initial Checks</b>				
5.4.3.1	PISL-0621 DISCONNECTED	YES		A
5.4.3.2	PRESSURE SIMULATOR CONNECTED	YES		
5.4.5	PISL-0621 INDICATION	GREATER THAN 50 PSIG		
5.4.8.1	WINCH W-0621 BREAKER	LOCKED OFF		
5.4.8.2	P-0621 BREAKER	LOCKED OFF		
5.4.9	ADMIN LOCKS REMOVED	YES		
5.4.10	TABLE 5 STATUS CORRECT	YES		
5.4.11	ZI-0621 INDICATION	0 to 2.5 INCHES		
5.4.12	TABLE 6 STATUS CORRECT	YES		
5.4.13.1	PISL-0622 INDICATION	LESS THAN 5 PSIG		
5.4.13.2	TI-06210A INDICATION	50 to 340 °F		
5.4.13.3	TI-06210B INDICATION	50 to 225 °F		
5.4.13.4	TI-0629 INDICATION	50 to 330 °F		
5.4.13.5	II-0622 INDICATION	LESS THAN 2 AMPS		
5.4.13.6	EI-0621 INDICATION	RECORD AS FOUND		
5.4.17	LIGHT TEST	4 LIGHTS FUNCTION		
<b>Pump Operation Stop Switch Shutdown</b>				
5.4.18	SC-0621 SETTING	0%		
5.4.21.1	HS-0624A POSITION	PRESSED TO START		
5.4.21.2	YL-0624A INDICATION	ON		
5.4.21.3	YL-0624B INDICATION	OFF		
5.4.22.1	IISH-0622 INDICATION	RECORD AS FOUND		
5.4.22.2	II-0622 INDICATION	RECORD AS FOUND		
5.4.22.3	EI-0621 INDICATION	RECORD AS FOUND		
5.4.22.4	SI-0621 INDICATION	1440 to 1550 RPM		

*Performed on Rev A-1  
ju 6/19/98*

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
5.4.24.1	SC-0621 SETTING	100%		
5.4.24.2	IISH-0622 INDICATION	36 to 38 AMPS		
5.4.24.3	II-0622 INDICATION	45 to 49 AMPS		
5.4.24.4	EI-0621 INDICATION	465 to 515 VOLTS		
5.4.24.5	SI-0621 INDICATION	3000 to 3060 RPM		
5.4.26.1	HS-0624B POSITION	PRESSED TO STOP		
5.4.26.2	YL-0624A INDICATION	OFF		
5.4.26.3	YL-0624B INDICATION	ON		
Pump Operation COAST/STOP Button Shutdown				
5.4.30.1	HS-0624A POSITION	PRESSED TO START		
5.4.30.2	YL-0624A INDICATION	ON		
5.4.30.3	YL-0624B INDICATION	OFF		
5.4.32.1	HS-0624C POSITION	FULLY INSERTED		
5.4.32.2	YL-0624A INDICATION	OFF		
5.4.32.3	YL-0624B INDICATION	ON		
Verify Pump Low Suction Pressure Interlock				
5.4.33	HS-0624C POSITION	FULLY RETRACTED		
5.4.37.1	HS-0624A POSITION	PRESSED TO START		
5.4.37.2	YL-0624A INDICATION	ON		
5.4.37.3	YL-0624B INDICATION	OFF		
5.4.39.1	PISL-0621 INDICATION	LESS THAN 30 PSIG		
5.4.39.2	YL-0624A INDICATION	OFF		
5.4.39.3	YL-0624B INDICATION	ON		
5.4.39.4	WINDOW 6-1 STATUS	ON		
5.4.41	P-0622 DISCONNECT	LOCKED OFF		
5.4.42.2	PRESSURE SIMULATOR	DISCONNECTED		
5.4.42.3	PISL-0621	CONNECTED		
5.4.43.1	SECTION 5.4 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.4.43.2	SECTION 5.4 COMPLETE	QC INSPECTOR INITIALS/DATE		

*Performed on Rev A1 ja 6/19/98*

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	62 of 76

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.5 SLUICER S-1361</b>				
<b>Preparation/Initial Checks</b>				
5.5.4.1	YL-13613B INDICATION	ON		
5.5.4.2	YL-13613A INDICATION	OFF		
5.5.4.3	YL-13615B INDICATION	ON		
5.5.4.4	YL-13615A INDICATION	OFF		
5.5.6.1	HS-13614 POSITION	MAN		
5.5.6.2	YL-13614B INDICATION	ON		
5.5.6.3	YL-13614A INDICATION	OFF		
<b>Sluice Operation - Manual Operation</b>				
5.5.9.1	HS-13613 POSITION	ON		
5.5.9.2	YL-13613A INDICATION	ON		
5.5.9.3	YL-13613B INDICATION	OFF		
5.5.10	ZC-1361 MOVEMENT	NOZZLE RESPONDED		
5.5.11	ZI-13614 INDICATION	INCREASES		
5.5.12	ZI-13614 INDICATION	READING CONSTANT		
5.5.13	ZI-13614 INDICATION	DECREASES		
5.5.14	ZI-13614 INDICATION	READING CONSTANT		
<b>Sluicer Operation - Tilt Control</b>				
5.5.16.1	HS-13614 POSITION	ON		
5.5.16.2	YL-13615A INDICATION	ON		
5.5.16.3	YL-13615B INDICATION	OFF		
5.5.17	ZC-1361 MOVEMENT	NOZZLE RESPONDED		
5.5.18	ZI-13613 INDICATION	-40°		
5.5.19	ZI-13613 INDICATION	-40°		
5.5.20	ZI-13613 INDICATION	90°		
5.5.21	ZI-13613 INDICATION	90°		

*Performed on Rev A-1  
JA 6/19/98*

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
Sluice Operation - Automatic Operation				
5.5.22	ZS-13614L SETPOINT	-90°		
5.5.23	ZS-13614R SETPOINT	90°		
5.5.25.1	HS-13614 POSITION	AUTO		
5.5.25.2	YL-13614B INDICATION	OFF		
5.5.25.3	YL-13614A INDICATION	ON		
5.5.26	ZI-13614 INDICATION	SWEEPS -90° to 90°		
5.5.29.1	HS-13614 POSITION	MAN		
5.5.29.2	YL-13614B INDICATION	ON		
5.5.29.3	YL-13614A INDICATION	OFF		
5.5.32	TILT LIGHT STATUS	YL-13615A OFF YL-13615B ON		
5.5.34	SLUICE PUMP LIGHT STATUS	YL-13613A OFF YL-13613B ON		
5.5.36.1	SECTION 5.5 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.5.36.2	SECTION 5.5 COMPLETE	QC INSPECTOR INITIALS/DATE		

*Performed on Rev A-1  
Jc 6/18/98*

ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
SECTION 5.6 SLUICE PIT 241-AY-02E CHILLER				
Preparation/Initial Checks				
5.6.16	TIC-06213 INDICATION	RECORD AS FOUND	85°F	Jr
5.6.21	COMPRESSOR ON LIGHT	RECORD AS FOUND	ON	Jr
5.6.25.1.A	TI-0621A	RECORD AS FOUND	60°F	Jr
5.6.25.1.B	TI-0621B	RECORD AS FOUND	61°F	Jr
5.6.25.1.C	WINDOW 7-3 STATUS	RECORD AS FOUND	OFF	Jr
5.6.25.2	RTD READOUT	RECORD AS FOUND	73°F	Jr
5.6.25.8	RTD READOUT +15 MIN	RECORD AS FOUND	72°F	Jr
	RTD READOUT +30 MIN	RECORD AS FOUND	72°F	Jr
	RTD READOUT +45 MIN	RECORD AS FOUND	70°F	Jr
	RTD READOUT +60 MIN	RECORD AS FOUND	71°F	Jr
	RTD READOUT +75 MIN	RECORD AS FOUND	71°F	Jr
	RTD READOUT +90 MIN	RECORD AS FOUND	71°F	Jr
	RTD READOUT +105 MIN	RECORD AS FOUND	71°F	Jr
	RTD READOUT +120 MIN	RECORD AS FOUND	71°F	Jr
5.6.28	COMPRESSOR SHUTS-DOWN	STOPS @ <90° F		
5.6.36	TE-06213 LEAD WIRES RE-CONNECTED	RECORD AS LEFT	Reconnected leads TIC-06213 Temp=74°F	Jr
5.6.38.1	SECTION 5.6 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	Jr 6/14/98
5.6.38.2	SECTION 5.6 COMPLETE	QC INSPECTOR INITIALS/DATE	WJ. VERDERBEL	6/23/98

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.7 VERIFY VALVE HV-0625 OPERATION</b>				
5.7.3.1	SLUICE PIT 241-AY-02E	NO LEAKAGE PRESENT		N/A
5.7.3.2	SLUICE PIT 241-C-06C	NO LEAKAGE PRESENT		
5.7.3.3	FLOW INTO 241-C-106	FLOW OBSERVED		
5.7.3.4	FLOW INTO 241-AY-102	FLOW OBSERVED		
5.7.3.5	PISL-0621	AS FOUND		
5.7.3.6	WINDOW 6-1	AS FOUND		
5.7.3.7	PISL-0622	AS FOUND		
5.7.3.8	WINDOW 6-2	AS FOUND		
5.7.3.9	FQI-0621	AS FOUND		
5.7.3.10	FI-0621	AS FOUND		
5.7.3.11	ZLH-0625 STATUS	ON		
5.7.3.12	ZLL-0625 STATUS	ON		
5.7.5.1	SECTION 5.7 COMPLETE	TEST DIRECTOR INITIALS/DATE		
5.7.5.2	SECTION 5.7 COMPLETE	QC INSPECTOR INITIALS/DATE		

*performed on Rev A-1  
Jo 6/18/98*

**ATTACHMENT 4 - OTP-320-003 DATA SHEET (Cont.)**

STEP NUMBER	ITEM	EXPECTED RESULT (ACCEPTABLE RANGE)	AS-FOUND VALUE	INITIALS
<b>SECTION 5.8 RETURN TRANSFER SYSTEM TO NON-OPERATIONAL STATUS</b>				
5.8.1.1.A	CK 10 BREAKER	OFF	OFF	ja
5.8.1.1.B	CK 12 BREAKER	OFF	OFF	ja
5.8.1.2	WINCH BREAKER	LOCKED OFF	Locked OFF	ja
5.8.1.3	P-0621 BREAKER	LOCKED OFF	Locked OFF	ja
5.8.1.4	P-0622 DISCONNECT	LOCKED OFF	Locked OFF	ja
5.8.1.5	NITROGEN BOTTLE VALVE	CLOSED	Closed	ja
5.8.1.6	PIT 241-AY-02E VENT PLUG INSTALLED	YES	Yes	ja
5.8.1.7	SECTION 5.8 COMPLETE	TEST DIRECTOR INITIALS/DATE	N/A	ja 6/18/98
5.8.1.8	SECTION 5.8 COMPLETE	QC INSPECTOR INITIALS/DATE	N/A	PAW 7-17-98



**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
241-C-106 LINEUP			
C-PDP-1 TANK C-106 SLUICING POWER DISTRIBUTION PANEL			
	MCC-N1 FEEDER BREAKER	ON	
	MAIN DISCONNECT	ON	
	TRANSFORMER BREAKER SKID PRIMARY FEEDER BREAKER	ON	
PROJECT W-320 TRANSFORMERS/CIRCUIT BREAKERS SKID			
	TRANSFORMER SPT PRIMARY FEEDER BREAKER	ON	
	OFF-FB CONSTRUCTION OFFICE TRAILER FEEDER BREAKER	ON	
MO-211 PANELBOARD PNL-MO211 (INSIDE MO-211)			
	MAIN BREAKER	ON	
CK 1	CP-02 IN TANK IMAGING RCPTS	ON	
CK 7	CP-01/CB-01 OPER STA RCPTS	ON	
MCC-N1 (INSIDE 241-C-51)			
	SLUICER HYDRAULIC POWER UNIT	ON	
1FM	INCOMING SUPPLY	ON	
1FDR	PROCESS BLDG	ON	
2FE	SLURRY PUMP WINCH	LOCKED OFF	
2FK	XFMR DISCONNECT	ON	
3FD	600A TO SEISMIC SKID	ON	
	BOOSTER PUMP P-1362 MOLDED CASE DISCONNECT SWITCH	OFF	
MCC-N2 (INSIDE 241-C-51)			
1FF	INLINE SLURRY PUMP BOOSTER VSD P-1362	LOCKED OFF	
1FK	SUBMERSIBLE SLURRY PUMP	LOCKED OFF	
120/240VAC PNL BD C 106-PP2 (LOCATED 252-C-51, MCC-N1, 3FJ)			
CK 1	LIGHTING	ON	

Completed on revision A-1  
JA 6/19/98

**ATTACHMENT 5 - OTP-320-003 ELECTRICAL LINEUP (Cont.)**

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
CK 2	VSD CABINET LIGHTING	ON	
CK 5	C-PDP-1 LTG & RCPTS	ON	
CK 7	CATHODIC PROTECTION	ON	
CK 12	SSS-1A HVAC & RCPT	ON	
CK 13	IE-1362	OFF	
CK 14	SSS-1B HVAC & RCPT	ON	
CK 18	PANEL MAIN	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1A (INSIDE 241-C-51A)			
C-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	
YL-13651	C-SSS-1A POWER AVAILABLE (SET) LIGHT	ON	
SEISMIC SHUTDOWN SYSTEM C-SSS-1B (INSIDE 241-C-51B)			
YL-13653	C-SSS-1B POWER AVAILABLE SET LIGHT	ON	
SEISMIC DETECTION SYSTEM 1A/1B EMERGENCY TRIP (LOCATED INSIDE M0-211 ON CP-01)			
HS-13650A	EMERGENCY TRIP SWITCH	RETRACTED	
C106-PP1 (LOCATED IN PROCESS BUILDING 241-C-91)			
CK 4	RCPT	ON	
CB 5	IN-TANK CCTV FCU-1362 RACK (GFCI)	ON	
ER-1362 (LOCATED OUTSIDE PROCESS BUILDING 241-C-91)			
CB-1	PROCESS BLDG POWER PANEL PP-1 SUPPLY	ON	
DS-1	PROCESS BUILDING MAIN DISCONNECT SWITCH	ON	
241-AY-102 LINEUP			
DISTRIBUTION PANEL AY-PDP-1			
7	AY102-PP1 EES MINI POWER PANEL FEEDER BREAKER	ON	
11	ELECTRICAL EQUIPMENT SKID: BLDG 241-AY-51	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1A) INSIDE 241-AY-51A			
AY-SSS-CB	SEISMIC SHUTDOWN SYSTEM SUPPLY BREAKER	ON	
YL-06210	C-SSS-1A POWER AVAILABLE LIGHT SET	ON	
SEISMIC SHUTDOWN SYSTEM (AY-SSS-1B) INSIDE 241-AY-51B			
YL-06212	C-SSS-1B POWER AVAILABLE LIGHT SET	ON	

*Completed on revision A-1  
JA 6/18/98*

BREAKER NUMBER	DESCRIPTION / LOCATION	POSITION	INITIALS
ELECTRICAL EQUIPMENT SKID 241-AY-51 (OUTSIDE 241-AY-51)			
	BLDG 241-AY-51 480V SERVICE DISCONNECT	ON	
ELECTRICAL EQUIPMENT SKID GROUP CONTROLLER (INSIDE 241-AY-51)			
	WINCH STARTER W-0621	LOCKED OFF	
	IMMERSIBLE PUMP P-0621 FEEDER BREAKER (480V)	LOCKED OFF	
VARIABLE SPEED DRIVE VC-0622 (INSIDE 241-AY-51)			
	BOOSTER PUMP P-0622 MOLDED CASE DISCONNECT SWITCH	LOCKED OFF	
MINI POWER PANEL AY102-PP1 (LOCATED INSIDE 241-AY-51)			
	MAIN	ON	
	SECONDARY MAIN	ON	
CK 1	HEAT PUMP, 240V, 1PH AC-0623	ON	
CK 4	GFCI RCPT & LIGHTS	ON	
CK 5	241-AY-51B HVAC, RCPT & BATT CHGR	ON	
CK 6	241-AY-51A HVAC, RCPT & BATT CHGR	ON	
CK 9	241-AY-801A	ON	
CK 10	OPER STATION RCPT	ON	
CK 11	AY-PDP-1 LTG & RCPT	ON	
CK 12	OPER STATION IE-0621	ON	
CK 13	P-0622 VSD LIGHTING	ON	
SEISMIC DETECTION SYSTEM 1A/1B EMERGENCY TRIP (LOCATED INSIDE 241-AY-51 AT IE-0621)			
HS-06211A	EMERGENCY TRIP SWITCH	RETRACTED	
ELECTRICAL DISTRIBUTION SKID EDS-DP-807 (LOCATED AT BUILDING 241-A-271)			
CK 11	AREA MONITOR - RAT 44	ON	
CK 12	801-AY PANEL DAS	ON	

*Completed on revision A-1  
Jg 6/18/98*

**ATTACHMENT 6 - OTP-320-003 CALIBRATION DATA SHEET**

INSTRUMENT	DESCRIPTION/LOCATION	NEXT DUE DATE	INITIAL
ZI-0621	SBM SLUICE PUMP P-0621 POSITION (LOCATED ELECTRICAL EQUIPMENT SKID 241-A1-51, PANEL 1E-0621)	1/29/99	JG
PISL-0621	SBM SLUICE PUMP P-0621 DISCHARGE PRESSURE (PISL-0621) (LOCATED PANEL 1E-0621)	4-7-01	JG
PI-06223	NITROGEN PURGE LINE PRESSURE (LOCATED NITROGEN GAS CONTROL PANEL GCP-0621)	4-6-01	JG
PSL-0622	NITROGEN PURGE LINE PRESSURE SWITCH LOW (LOCATED NITROGEN GAS CONTROL PANEL GCP-0621)	4-7-01	JG
ZI-13613	SLUICER S-1361 TILT POSITION (LOCATED MO-211 PANEL CB-D1)	2-13-99	JG
ZI-13614	SLUICER S-1361 PAN POSITION (LOCATED MO-211 PANEL CB-D1)	2-13-99	JG
TIC/TSH-06213	AIR COOL CHILLER TEMP CONT/SW HIGH (LOCATED @ 241-A1-102 PUMP PIT COOLER 241-A1-02E CONTROL PANEL)	2-24-01	JG

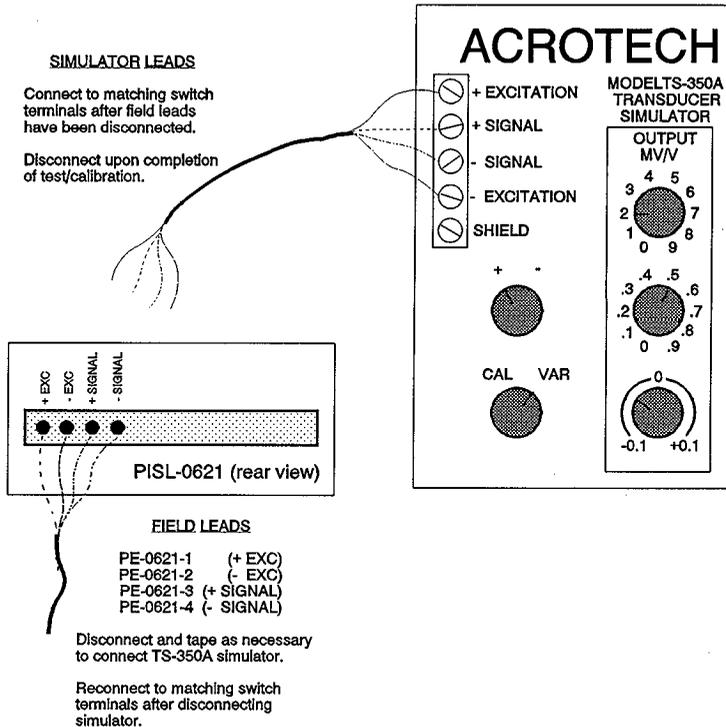


FIGURE 1 - PRESSURE SIMULATOR CONNECTION

**PROCEDURE HISTORY SIGNATURE SHEET**

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/16/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>5/16/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/17/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/17/98</u>
Environmental Eng.	<u>P.C. Miller</u>	<u>5/17/98</u>
RadCon Engineer	<u>R.J. Reeder</u>	<u>5/17/98</u>
COG Engineer	<u>J.M. Jones</u>	<u>5/17/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>5/19/98</u>
Approval Authority	<u>T.J. Kelley</u>	<u>5/18/98</u>

Justification: Engineering Request W-320.

Summary of Changes: New Procedure to support Project W-320.

## PROCEDURE HISTORY SIGNATURE SHEET (Cont.)

Last Full Revision: A-0  
 Release Date: 5/19/98  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ

Current Modification: A-1  
 USQ Screening Number: TF-98-0281  
 Approval Designator: ESQ  
 PCA Incorporated: ETF-98-331

POSITION/ORG	DELEGATE	DATE
NCO	<u>R.R. Friesz, Jr.</u>	<u>5/20/98</u>
QA Engineer	<u>C.A. Sams</u>	<u>5/20/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>5/20/98</u>
OE/DST	<u>K.J. Anderson</u>	<u>5/20/98</u>
Environmental Eng.	<u>J.D. Guberski</u>	<u>5/20/98</u>
COG Engineer	<u>Randy L. Powers</u>	<u>5/20/98</u>
Acceptance Review	<u>L. Ross</u>	<u>5/20/98</u>
Approval Authority	<u>K.J. Anderson</u>	<u>5/20/98</u>

Justification: Correct labeling errors and insert LCO 3.2.1 limits.

## Summary of Changes:

Pg 8: Deleted step 2.4.10.2.  
 Pg 10: Added LCO 3.2.1 An active primary tank ventilation system shall be OPERABLE.  
 Pg 23: Deleted step 5.1.19.5.  
 Pg 27: Swapped step 5.2.9 and 5.2.10.  
 Pg 30: Changed "FI-0622" to "FI-06221" in steps 5.3.15.2 and 5.3.17.  
 Pg 34: Added window 6-1 for SBM Sluice Pump P-0621.  
 Pg 57: Deleted ZAL-0621 STATUS data block.  
 Pg 59: Changed nomenclature to FI-06221.

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	OTP-320-003	A-3	6/17/98	75 of 76

**PROCEDURE HISTORY SIGNATURE SHEET (Cont.)**

Last Full Revision: A-0 Release Date: 5/19/98 USQ Screening Number: TF-98-0281 Approval Designator: ESQ		
Current Modification: A-2 USQ Screening Number: TF-98-0281 Approval Designator: ESQ PCA Incorporated: ETF-98-349		
<b>POSITION/ORG</b>	<b>DELEGATE</b>	<b>DATE</b>
NCO	<u>R.R. Friesz, Jr.</u>	<u>6/1/98</u>
Shift Manager	<u>J.E. Andrews</u>	<u>6/1/98</u>
QA Engineer	<u>W.L. Adams</u>	<u>6/1/98</u>
Safety Engineer	<u>S.U. Zaman</u>	<u>6/1/98</u>
Environmental Eng.	<u>J.D. Guberski</u>	<u>6/1/98</u>
RadCon Engineer	<u>J. Pieper</u>	<u>6/1/98</u>
COG Engineer	<u>J.M. Jones</u>	<u>6/1/98</u>
Acceptance Review	<u>D.C. Ashworth</u>	<u>6/1/98</u>
Approval Authority	<u>J.E. Andrews</u>	<u>6/1/98</u>
Justification: RTD Simulator required to test Pit AY-02E Chiller Unit. Winch movement already verified.		
Summary of Changes: Section 5.6 - Rewrote section to provide for installation and removal of an RTD simulator. Section 5.1 - Deleted Step 5.1.1 and Note on page 24.		

Attachment B

OTP-320-003 Test Exceptions

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: <u>1</u> of <u>1</u>	
TEST PROCEDURE NO. & SECTION: OTP-320-003, section 5.7	TEST NAME: Verify Valve HV-0625 Operation	EXCEPTION TRACKING NUMBER: #1	
DESCRIPTION OF PROBLEM: During the flush to 102-AV, It was noted that FQI-0621 and FI-0621 were indicating 100% flow prior to the actual 250 gallon flush. It appears the flow element is wired incorrectly. This exception had no bearing on the remainder of test.			
ORIGINATOR: J.E. Andrews	ORG: DST Ops DATE: 5/20/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: J. Anderson	DATE: 5/20/98
DISPOSITION: TROUBLESHOOT FQI/FI-0621 CIRCUIT WIRING. FOLLOWING TROUBLESHOOTING, ENERGIZE FLOWMETER AND VERIFY ALL ASSOCIATED INDICATORS AND TOTALIZERS READ ZERO FLOW. WIRING FOUND WHICH DOES NOT CONFORM TO THE APPROVED DESIGN MEDIA SHALL BE CORRECTED FOLLOWING THE EOP PROCESS. DISPOSITION APPROVED BY: <u>J.R. Adams</u> 6-2-98 TEST ENGINEER			
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <u>J. Anderson</u> DATE: 6/22/98		DISPOSITION ACTIONS COMPLETE VERIFIED BY: <u>J. Anderson</u> DATE: 6/22/98	
QAE CONCURRENCE WITH DISPOSITION (if required): <u>W. Adams</u> DATE: 7/17/98		RETEST COMPLETE VERIFIED BY: <u>N/A</u> DATE:	
TEST EXCEPTION CLOSED: TEST ENGINEER: <u>J.R. Adams</u> DATE: <u>7/17/98</u> TEST DIRECTOR: <u>J. Anderson</u> DATE: <u>7/17/98</u>			

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: <u>2</u> of <u>2</u>
TEST PROCEDURE NO. & SECTION: OTP-320-003, section 5.6	TEST NAME: Sluice Pit-A4-O2E Chiller	EXCEPTION TRACKING NUMBER: # 2
DESCRIPTION OF PROBLEM: <u>Step 5.6.3</u> - Labeling problems noted in OTP test log - Pit Chiller R-0621 Main Electrical Control Box does not have 3 feet of clearance in front of panel per NEC  <u>Step 5.6.4</u> - Labeling problems noted in OTP test Log - Chiller Control Panel does not have 3 feet of clearance per NEC.		
ORIGINATOR: J.E. Andrews	ORG: DST Ops  DATE: 5/21/98	IMPACT ON TESTING:  <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: J. Andrew    DATE: 5/21/98
DISPOSITION: <b>ADD LABELS TO CHILLER WHERE NOTED. RE-LOCATE PNEUMATIC VALVE OPERATOR STATION TO PROVIDE PROPER SEPARATION FROM CHILLER CONTROL PANEL.</b>		
DISPOSITION APPROVED BY: <u>JRS/1103</u> 6-3-98 TEST ENGINEER		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <u>J. Andrew</u> DATE: 7/17/98	DISPOSITION ACTIONS COMPLETE VERIFIED BY: <u>J. Andrew</u> DATE: 7/17/98	
OAE CONCURRENCE WITH DISPOSITION (if required): <u>W. Adams</u> DATE: 7/17/98	RETEST COMPLETE VERIFIED BY: N/A    DATE:	
TEST EXCEPTION CLOSED:		
TEST ENGINEER: <u>JRS/1103</u>		DATE: <u>7/17/98</u>
TEST DIRECTOR: <u>J. Andrew</u>		DATE: <u>7/17/98</u>

Post-Relocation (ECN 648243) Functional Check  
of Control Station for Pneumatically Operated Valve HV-0625

Note: Each step shall be initialed and dated by a QC or AI representative.

- ✓ 7-17-98 1. Energize/Verify the power is available to ZLH-0625 & ZLL-0625 indicating lights (EDS-DP-603 circuit #6 via IE-0622 / TB-3 / FU13)
- ✓ 7-17-98 2. At the Valve Actuator Control Station for HV-0625, Place control valve HV-0627 to the VALVE CLOSED position.
- ✓ 7-17-98 3. At the Valve Actuator Control Station for HV-0625, Establish an air supply pressure of 90-110 psig to the valve actuator controls.
- ✓ 7-17-98 4. At the Indicating Light Enclosure, verify that:
  - a. CLOSED position indication light (ZLL-0625) is ON,
  - b. OPEN position indication light (ZLH-0625) is OFF.
- ✓ 7-17-98 5. At the Valve Actuator Control Station for HV-0625, Place control valve HV-0627 to the VALVE OPEN position.
- ✓ 7-17-98 6. At the Indicating Light Enclosure, verify that:
  - a. OPEN position indication light (ZLH-0625) is ON,
  - b. CLOSED position indication light (ZLL-0625) is OFF.
- ✓ 7-17-98 7. At the Valve Actuator Control Station for HV-0625, Place control valve HV-0627 to the VALVE CLOSED position.
- ✓ 7-17-98 8. At the Indicating Light Enclosure, verify that:
  - a. CLOSED position indication light (ZLL-0625) is ON,
  - b. OPEN position indication light (ZLH-0625) is OFF.
- ✓ 7-17-98 9. At the Valve Actuator Control Station for HV-0625, Disconnect the air supply to the valve actuator controls.
- ✓ 7-17-98 10. Verify no leaks at tubing connections; document results on PTC form and place form in CWP-W-320-132.

QC or AI rep Name (printed) & Initials: W.A. VAHRT, P

GARGLE METE # 0234 O-200 DUE 8-7-98  
FLAKE METE # 1049 DUE 3-13-99

**ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT**

OTP-320-003		Page: <u>3</u> of <u>3</u>
TEST PROCEDURE NO. & SECTION: <i>OTP-320-003/5.5</i>	TEST NAME: <i>WRSS Supernate Transfer System</i>	EXCEPTION TRACKING NUMBER: <i>3</i>
DESCRIPTION OF PROBLEM: <i>During the preparation /Initial checks section, steps 5.5.4.3 and 5.5.6.2 require the indicating lights to be on. The indicating lights do not receive power to be energized until step 5.5.8. The lights are tested later on in the procedure and this does not effect the outcome of the test.</i>		
ORIGINATOR: <i>JE Andrews</i>	ORG: <i>DST ops</i> DATE: <i>5/21/98</i>	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: <i>Jr Anderson</i> DATE: <i>5/21/98</i>
DISPOSITION: <i>THE NOTED PROBLEM IS A PROCEDURE DISCREPANCY ONLY. THE PROCEDURE INCORRECTLY ASSUMED THE LIGHTS WERE ENERGIZED FOLLOWING THE CLOSURE OF BREAKER MM-M1 110. THE LIGHTS ARE NOT ENERGIZED UNTIL MS-13413 (SWING SYSTEM ON/OFF) IS PLACED IN THE "ON" POSITION. LIGHTS ARE WIRED AS SHOWN ON ELECTRICAL DRAWING A-2-818675, SN 0 AND FUNCTION AS DESIGNED.</i>		
DISPOSITION APPROVED BY: <i>JRS/llm</i> <b>6-3-98</b> TEST ENGINEER		
<b>NO MODIFICATION OR RETEST IS REQUIRED.</b>		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <i>Jr Anderson</i> DATE: <i>6/22/98</i>	DISPOSITION ACTIONS COMPLETE VERIFIED BY: <i>Jr Anderson</i> DATE: <i>6/22/98</i>	
OAE CONCURRENCE WITH DISPOSITION (if required): <i>Wk Adams</i> DATE: <i>7/17/98</i>	RETEST COMPLETE VERIFIED BY: <i>N/A</i> DATE:	
TEST EXCEPTION CLOSED:		
TEST ENGINEER: <i>JRS/llm</i>		DATE: <i>6-3-98</i>
TEST DIRECTOR: <i>Jr Anderson</i>		DATE: <i>7/17/98</i>

**ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT**

OTP-320-003		Page: <u>4</u> of <u>4</u>	
TEST PROCEDURE NO. & SECTION: <i>OTP-320-003 / 5.5</i>	TEST NAME: <i>WRSS Supernate Transfer System</i>	EXCEPTION TRACKING NUMBER: <i>4</i>	
DESCRIPTION OF PROBLEM:  <i>During tilt portion of section 5.5, step 5.5.18, the slicer is required to tilt down to -40°. The slicer only reached -38°.</i>			
ORIGINATOR:  <i>JE Andrews</i>	ORG: <i>PSY OPS</i>	IMPACT ON TESTING:  <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE	
DATE: <i>5/22/98</i>	TEST DIRECTOR: <i>JE Andrews</i>	DATE: <i>5/22/98</i>	
DISPOSITION: <b><i>SEE ATTACHED DISPOSITION</i></b>			
DISPOSITION APPROVED BY: <i>[Signature]</i> <b><i>6-1-98</i></b> TEST ENGINEER			
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY:  <i>JE Andrews</i> DATE: <i>6/22/98</i>		DISPOSITION ACTIONS COMPLETE VERIFIED BY:  <i>JE Andrews</i> DATE: <i>6/22/98</i>	
QAE CONCURRENCE WITH DISPOSITION (if required):  <i>WA Adams</i> DATE: <i>7/17/98</i>		RETEST COMPLETE VERIFIED BY:  <i>N/A</i> DATE:	
<b>TEST EXCEPTION CLOSED:</b>			
TEST ENGINEER: <i>[Signature]</i>		DATE: <i>6-1-98</i>	
TEST DIRECTOR: <i>[Signature]</i>		DATE: <i>7/17/98</i>	

OTP-320-003

EXCEPTION TRACKING NUMBER: 4

DISPOSITION CONTINUATION

Sluicer factory acceptance testing was initially performed by Olympic Engineering on 6-5-96 and repeated on 8-5-96 following minor system modifications. During the factory acceptance testing the sluicer position displayed on the sluicer vertical tilt position indicator (ZI-13613) was compared to the actual sluicer tilt angle as measured by an inclinometer mounted on the sluicer nozzle. When ZI-13613 read -40 degrees, the actual sluicer nozzle position varied from -37 degrees to -40 degrees. The reading recorded during OTP-320-003 testing (-38 degrees) corresponds very closely to the actual maximum negative tilt angle of the sluicer nozzle recorded during the factory acceptance testing which confirms the sluicer vertical tilt position instrument accuracy. The ability of the sluicer to achieve an actual vertical tilt position of precisely -40 degrees has no impact on planned sluicing operations. Therefore, the condition noted by this exception is acceptable and no modification or retesting is required.

*JRB/1105 6-4-98*

J. R. Bellomy  
Project W-320 Test Engineer

*J. W. Bailey 6/4/98*

J. W. Bailey  
Project W-320 Design Authority

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: <u>6</u> of <u>6</u>
TEST PROCEDURE NO. & SECTION: OTP: 200-003 / 5.4.10 S.1.5, 5.4.10, 5.4.11	TEST NAME: WSS Supernate Transfer System	EXCEPTION TRACKING NUMBER: 6
DESCRIPTION OF PROBLEM:  ZI-0621 INDICATED 45" WITH TURN AT TOP OF TANK WITH SLUCE PUMP P-0621 PUMP POSITION UPPER TRAVEL LIMIT (ZAH-0621) "ON"		
ORIGINATOR: <i>[Signature]</i>	ORG: 79300 DATE: 5/26/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: <i>[Signature]</i> DATE: 5-26-98
DISPOSITION: RUN WHICH DOWN TO RESET ZAH-0621 AND RETURN TO UPPER TRAVEL LIMIT - DID NOT RESET TO 0 REPAIR ON CASINATE ZI-0621 <i>[Signature]</i> 5/26/98 JRS 5/26/98 JRS 5/26/98		
DISPOSITION APPROVED BY: <i>[Signature]</i> 5/26/98 TEST ENGINEER ZI-0621 was recalibrated and sections 5.1.5, 5.4.10 and 5.4.11 were re-performed. JRS 6/22/98. Retests were not required for sections 5.4.10 & 5.4.11. <i>[Signature]</i> 6/22/98		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <i>[Signature]</i> DATE:	DISPOSITION ACTIONS COMPLETE VERIFIED BY: <i>[Signature]</i> DATE: 6/22/98	
QAE CONCURRENCE WITH DISPOSITION (if required): <i>[Signature]</i> DATE: 7/17/98	RETEST COMPLETE VERIFIED BY: <i>[Signature]</i> DATE: 6/22/98	
TEST EXCEPTION CLOSED: TEST ENGINEER: <i>[Signature]</i> DATE: 7/17/98 TEST DIRECTOR: <i>[Signature]</i> DATE: 7/17/98		

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: <u>1</u> of <u>1</u>	
TEST PROCEDURE NO. & SECTION: OTP-320-03/5.3	TEST NAME: WRSS Superstrate Transfer system	EXCEPTION TRACKING NUMBER: 7	
DESCRIPTION OF PROBLEM: During step 5.3.15.2, the flow is required to be < 10% on FI-06221. The actual flow observed was 15%			
ORIGINATOR: JE Andrews	ORG: Ops DST DATE: 5/27/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: J. Andrews	DATE: 5/27/98
DISPOSITION: Flow is acceptable < 65%. Flow alarm is cleared at 75% flow (FSH-0622) ← 65% JRS 6-2-98			
DISPOSITION APPROVED BY: <u>JRS/llong</u> 5/27/98 TEST ENGINEER			
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: J. Andrews DATE: 5/27/98		DISPOSITION ACTIONS COMPLETE VERIFIED BY: J. Andrews DATE: 5/27/98	
QAE CONCURRENCE WITH DISPOSITION (if required): W. Adams DATE: 7/17/98		RETEST COMPLETE VERIFIED BY: N/A DATE:	
TEST EXCEPTION CLOSED:			
TEST ENGINEER: <u>JRS/llong</u>		DATE: <u>6-4-98</u>	
TEST DIRECTOR: <u>J. Andrews</u>		DATE: <u>7/17/98</u>	

**ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT**

HNF-3057, Rev.0  
Page B1-9

OTP-320-003		Page: <u>1</u> of <u>1</u>
TEST PROCEDURE NO. & SECTION: OTP-320-003 / 5.4.24.2 5.4.24.5 5.4.15	TEST NAME: WRSS Superate Transfer System	EXCEPTION TRACKING NUMBER: 9
DESCRIPTION OF PROBLEM: <ul style="list-style-type: none"> <li>- Booster pump amps was required to fall between 36-38 amp. Observed amps were 42.</li> <li>- The Booster pump speed indication was required to fall between 3000 to 3050 RPM. Observed speed was 2992 RPM.</li> <li>- "RDY" indication was not observed on control panel A VSD as required.</li> </ul>		
ORIGINATOR: JE Andrews	ORG: DST Ops DATE: 5/28/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: J. Anderson    DATE: 5/28/98
DISPOSITION: The Observed Amps and speed are acceptable. "RDY" indication will not be observed due to current configuration of VSD. <i>SEE ATTACHED DISPOSITION CONTINUATION.</i>		
DISPOSITION APPROVED BY: <u>JRS/llong</u> 6-3-98 TEST ENGINEER		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <u>J. Anderson</u> DATE: 6/22/98	DISPOSITION ACTIONS COMPLETE VERIFIED BY: <u>J. Anderson</u> DATE: 6/22/98	
QAE CONCURRENCE WITH DISPOSITION (if required): <u>W. Adams</u> DATE: 7/17/98	RETEST COMPLETE VERIFIED BY: <u>N/A</u> DATE:	
TEST EXCEPTION CLOSED:		
TEST ENGINEER: <u>JRS/llong</u>		DATE: <u>6-4-98</u>
TEST DIRECTOR: <u>J. Anderson</u>		DATE: <u>7/17/98</u>

DISPOSITION CONTINUATION

- Full load motor amperage for the 250 hp booster pump motor is 273 amps as specified by the motor data sheet provided by Reliance Electric. The motor amperage recorded during OTP-320-003 dry pump operation (pump unloaded) is normal at 42 amps.
- The booster pump maximum speed recorded during OTP-W320-003 performance (2992 RPM) is approximately 3,000 RPM and is acceptable for performance of the OTP. During hot startup of the sluicing system the Reliance Electric Technician will be available to tune the VSD to increase pump speed if determined necessary at that time.
- When the VSD is energized, the VSD microprocessor runs diagnostics and displays "NO ERRORS." "READY" is not displayed on the VSD keypad window for either pumping system. This is a characteristic of the VSD microprocessor and is not an abnormal condition as the VSDs are not programmed to display "READY" following the diagnostic routine.

The conditions noted above are acceptable. No correction or retesting is required.

Handwritten signature of J. R. Bellomy with the date 6-3-98 written to the right.

J. R. Bellomy  
Project W-320 Test Engineer

Handwritten signature of J. W. Bailey.

J. W. Bailey  
Project W-320 Design Authority

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: 1 of 1
TEST PROCEDURE NO. & SECTION: OTP-320-003/5.6	TEST NAME: WRSS Supernate Transfer System	EXCEPTION TRACKING NUMBER: 9
DESCRIPTION OF PROBLEM: During troubleshooting of Chiller, observed several unlanded wires. Need to determine purpose and disposition of these wires.		
ORIGINATOR: JE Andrews	ORG: DST Ops DATE: 6/11/98	IMPACT ON TESTING: <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE TEST DIRECTOR: js anderson DATE: 6/11/98
DISPOSITION: REMOVE AND DISPOSE OF SPACE THERMOCOLLAR EXTENSION WIRE. LABEL UNUSED VENDOR SUPPLIED OPTIONS CONDUCTORS AS VENDOR SPARES.		
DISPOSITION APPROVED BY: <i>[Signature]</i> 7/16/98 TEST ENGINEER		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY: <i>js anderson</i> DATE: 7/17/98	DISPOSITION ACTIONS COMPLETE VERIFIED BY: <i>js anderson</i> DATE: 7/17/98	
QAE CONCURRENCE WITH DISPOSITION (if required): <i>wl adams</i> DATE: 7/17/98	RETEST COMPLETE VERIFIED BY: N/A DATE:	
TEST EXCEPTION CLOSED:		
TEST ENGINEER: <i>[Signature]</i>		DATE: 7/7/98
TEST DIRECTOR: <i>js anderson</i>		DATE: 7/17/98

ATTACHMENT 2 - OTP-320-003 TEST EXCEPTION REPORT

OTP-320-003		Page: <u>1</u> of <u>1</u>
TEST PROCEDURE NO. & SECTION: <i>OTP-320-003 / 5.6</i>	TEST NAME: <i>WRSS Supernate Transfer System</i>	EXCEPTION TRACKING NUMBER: <i>10</i>
DESCRIPTION OF PROBLEM:  <i>It was observed on several occasions during testing of the pit chiller (section 5.6), that the seismic system for AY tripped, preventing operation of the chiller. Troubleshooting and resolution of these frequent trips needs to be performed.</i>		
ORIGINATOR: <i>J.E. Andrews</i>	ORG: <i>DST Ops</i>  DATE: <i>6/19/98</i>	IMPACT ON TESTING:  <input type="checkbox"/> HOLD FOR RESOLUTION <input checked="" type="checkbox"/> CONTINUE  TEST DIRECTOR: <i>J. Andrews</i> DATE: <i>6/19/98</i>
DISPOSITION:  <i>The frequent tripping of the seismic system at AY is being addressed by W-320 affidavits 5.1.A &amp; 5.1.B. This will be a punchlist item.</i>		
DISPOSITION APPROVED BY: <i>J.R. Williams</i> <u>7-17-98</u> TEST ENGINEER		
DISPOSITION AND RETEST REQUIREMENTS COMPLETED BY:  <i>J. Andrews</i> DATE: <i>7/17/98</i>	DISPOSITION ACTIONS COMPLETE VERIFIED BY:  <i>N/A</i> DATE:	
QAE CONCURRENCE WITH DISPOSITION (if required):  <i>W. Adams</i> DATE: <i>7/17/98</i>	RETEST COMPLETE VERIFIED BY:  <i>N/A</i> DATE:	
TEST EXCEPTION CLOSED:  TEST ENGINEER: <i>J.R. Williams</i> DATE: <i>7/17/98</i> TEST DIRECTOR: <i>J. Andrews</i> DATE: <i>7/19/98</i>		