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ACCEPTANCE TEST PROCEDURE FOR THE L-070 PROJECT
MECHANICAL EQUIPMENT & INSTRUMENTATION

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Acceptance Test Procedure For The L-070 Project Mechanical Equipment and Instrumentation

C.M. Loll

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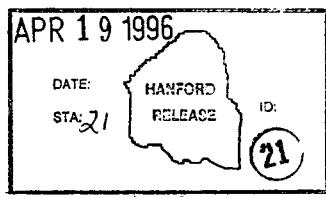
Abstract: This document contains the acceptance test procedure for the mechanical equipment and instrumentation installed per the L-070 Project. The specific systems to be tested are the pump controls for the 3906 Lift Station and the 350-A Lift Station. In addition, verification that signals are being received by the 300 Area Treated Effluent Disposal Facility control system, is also performed.

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Karen G. Noland
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4/19/96
Date



Approved for Public Release

ACCEPTANCE TEST PROCEDURE
FOR THE
L-070 PROJECT MECHANICAL EQUIPMENT
AND INSTRUMENTATION

WHC-SD-L070-ATP-001
REV 0

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April 10, 1996

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1.0 PURPOSE

The purpose of the L-070 Project Acceptance Test Procedure is to verify the proper functioning of 300 Area Process Sewer and Retention Process Sewer equipment required to be installed per L-070-C1, Construction Specification, 300 Area Process Sewer Upgrade.

Specifically, this ATP addresses the functionality of the 3906 Lift Station, 350-A Lift Station, and the receipt of the PS Manhole #72 flow signal at 300 Area TEDF.

2.0 PRECAUTIONS

2.1 PERSONNEL SAFETY

- 2.1.1 Manholes at the lift stations will need to be open in order to add water for testing. Anchored railings, or a means of keeping personnel at least six feet back from the opening will be present around manholes while they are open.
- 2.1.2 Work will be performed under the safety rules and information contained in the existing job safety analyses (JSA's) for construction activities.
- 2.1.3 All personnel performing ATP related work shall read and sign the JSA prior to the commencement of testing. The Test Engineer shall be responsible for ensuring that this requirement is met.

3.0 ADMINISTRATION AND AUTHORITY

3.1 TEST ENGINEER

The WHC ATP Test Engineer is responsible for directing performance of the ATP and for personnel and plant safety as related to the performance of the ATP. The Test Engineer directs contractor and WHC personnel assigned to the ATP. The Test Engineer is authorized to make field changes to the ATP.

3.2 TEST PERFORMERS/OPERATORS

WHC and contractor personnel assigned ATP related tasks are directly responsible for ATP performance and plant and personnel safety. Test performers report to the Test Engineer.

3.3 TAGOUTS

ICF Kaiser Hanford Company or its construction subcontractor shall be responsible for lock-and-tags and shall designate a tag custodian during ATP performance.

3.4 CHANGES

ATP changes required during testing may be made immediately in the field copy, provided that the changes cannot affect operating facility safety, function, or performance and will not compromise or influence test data. Any such change must be recorded in the change log as a change exception.

ATP changes that affect operating facility safety, function, or performance or will compromise or influence test data are made via an ECN to the ATP Supporting Document (SD).

3.5 TEST FAILURE

All steps in the ATP involving equipment operation or data verification must pass their acceptance criteria. Failures must be corrected and retested, or dispositioned with test engineer approval. The test engineer will decide whether to continue with the ATP in the event ATP steps fail.

3.6 TEST LOG

A log of changes or exceptions (appendix B) to testing activities is to be maintained by the test engineer.

3.7 EXCEPTIONS

The ATP may not be closed with open exceptions. All exceptions shall be recorded in appendix B, unless they are immediately correctable and retested. Prior to the close of the ATP each exception is dispositioned. When all exceptions are dispositioned then the ATP may be closed.

3.8 EXCEPTION DISPOSITION

Dispositioning of exceptions usually takes one of four forms as shown below. This does not prevent other means of dispositioning if agreed upon by WHC.

- a. The contractor corrects the exception.
- b. WHC accepts the exception as is.
- c. The exception is transferred to the project managers open item list.
- d. The exception is handled using a combination of a. through c. above.

Exceptions are closed when they have been dispositioned and signed by the Test Engineer.

3.9 SIGNATURES

Persons signing for performance steps certify that they have personally witnessed or performed the step (s) or that they have received a direct report of completion from test personnel.

4.0 PREREQUISITES

All of the following prerequisites must be completed before any testing is performed in the ATP. Other prerequisites must be completed in each major section and are identified as "Special Prerequisites".

4.1 The contractor certifies that all process equipment and controls associated with the ATP are ready for testing to commence. Exceptions will be noted in the test log and will have the concurrence of the Test Engineer.

Zygotech Construction / _____

Date

WHC Test Engineer / _____

Date

4.2 Identify the status (installed/incomplete) of the 350-A Lift Station. If the lift station has been installed, then it will be tested per this ATP. If the 350-A Lift Station has not been completely installed, Section 8.0 of this ATP does not have to be completed.

(complete/incomplete) / Test Engineer / _____

Date

4.3 All danger and caution tags have been removed from equipment that will be tested or existing tagouts have been discussed with the contractor and their impact on the ATP is acceptable to proceed with testing.

Test Engineer / _____

Date

4.4 A pre-job safety meeting has been held and all personnel involved in the ATP have signed off on the pre-job roster.

WHC Test Engineer _____ / _____
Date

4.5 When all prerequisites are completed then sign below to formally authorize the commencement of testing activities.

WHC Test Engineer _____ / _____
Date

5.0 **GENERAL INSTRUCTIONS**

This section provides general requirements that apply during the entire ATP performance. The test engineer and contractor test performers must read this section prior to performing any ATP testing.

Instructions

5.1 An exception will be logged (Appendix B) for any step not meeting the requirements of the ATP unless the exception can be corrected and retested during the present shift.

5.2 Each major section (X.0) is performed sequentially. The Test Engineer has authority to perform major sections out of sequence (without an ATP change) provided:

1. The "Special Prerequisites" in that section are completed.
2. Performing the section out of sequence will not adversely impact any unfinished (previous or subsequent) sections or adversely impact the ATP performance schedule.

5.3 The Test Engineer signoff of test steps certify that direct observation or inspection has been made or that a report was received from test personnel signifying that the step was performed.

5.4 LEAD/LAG ... The lift station pumps are controlled by a LEAD/LAG scheme that controls which piece of equipment will start next. When a piece of equipment shutdown then its status should change to LAG. When equipment with a LEAD status is taken out of AUTO then a LEAD status should be reassigned to the other piece of equipment if it is in AUTO.

6.0 LIFT STATION 3906 PUMP (LSP-1,2) TESTING

This section tests the sump pumps for proper operation. After this test is completed the sump controls may be left in automatic.

Special Prerequisites

6.1 Notify 310 Facility (373-5082) and 340 Facility (376-3420) personnel that testing will be performed on 3906 Lift Station and that they will receive an alarm signal.

6.2 When all prerequisites are completed then sign below.

WHC Test Engineer Date

Instructions

6.3 Ensure electrical supply breakers are open for both sump pumps.

6.4 Bump test each pump as follows:

6.4.1 Position the HAND/OFF/AUTO switch for the pump to OFF.

6.4.2 Verify no obstructions are present that would hinder equipment operation.

6.4.3 Close the electrical supply breaker.

6.4.4 Position the HAND/OFF/AUTO switch for the pump to HAND and run the equipment for ~5 secs. then position to OFF.

6.4.5 Verify the equipment is stopped.

- 6.5 Start filling sump with water.
- 6.6 Turn HAND/OFF/AUTO switches for both pumps to AUTO.
- 6.7 Verify that LSP-1 (LSP-2) pump starts as water rises approximately 2.25 feet from the bottom of the sump.
- 6.8 Verify that flow registers on FIT-3906, the local readout for the 3906 Lift Station discharge. (0-260 gpm)
- 6.9 Let LSP-1 (LSP-2) pump run until the water level is visibly below the 2.25 foot level (below the displacer) and then turn the HOA switch on the lead pump to OFF and then back to AUTO. (This should change the lead/lag status of the pumps)
- 6.10 Fill the sump to the lead pump on level again (approximately 2.25 feet of water).
- 6.11 Verify that LSP-2 (LSP-1), previously in the lag position now starts up.
- 6.12 Turn both pump HOA switches to OFF.
- 6.13 Fill the sump to approximately 4.25 feet.
- 6.14 Verify that the local colored alarm light comes on.
- 6.15 Verify that the "High" level alarm signal is received at the 310 Building control room (phone: 373-5082) or one of the computer panels (3707F or 340 Control Room) at the 340 Facility (phone:376-3420).
- 6.16 Position both the pump HAND/OFF/AUTO switches to AUTO
- 6.17 Verify that both pumps start and run.
- 6.18 Verify that both pumps shut off at approximately 1 foot of water.

6.19 Record the status (auto/secured) of the sump system below.

(auto/secured) Initials

6.20 When testing in this section is completed then sign below.

WHD Test Engineer / Date

7.0 MANHOLE PS-72 SIGNAL

This section provides Verification that the flow signal from the PS-72 ISCO Flowmeter is being received on the Waste Collection Sump screen on CP-1, at the 310 Building.

Special Prerequisites

7.1 Signal wires have been connected per ICF Kaiser Hanford Co.
Drawing H-3-304724, sheet 1 of 1, rev. 0.

7.2 When all prerequisites are completed then sign below.

WHC Test Engineer _____ / _____ Date

Instructions

7.3 Verify that a flowrate for the PS-72 flowmeter is being displayed on the CP-1 computer screen at the 310 Facility control room. (Phone: 373-5082)

WHC Test Engineer / Date

8.0 LIFT STATION 350-A PUMP (LSP-1,2) TESTING

If prerequisite 4.2 has been signed off as INSTALLED, perform this section. If it has been signed off as INCOMPLETE, N/A steps 8.1, 8.16 and sign 8.17.

This section tests the sump pumps for proper operation. After this test is completed the sump controls will be left in the "OFF," position.

Special Prerequisites

8.1 When all prerequisites are completed then sign below.

WHC Test Engineer _____ / _____
Date

Instructions

- 8.2 Verify electrical supply breakers are open for both sump pumps.
- 8.3 Bump test each pump as follows:
 - 8.3.1 Position the HAND/OFF/AUTO switch to OFF.
 - 8.3.2 Verify no obstructions are present that would hinder equipment operation.
 - 8.3.3 Close the electrical supply breaker.
 - 8.3.4 Position the HAND/OFF/AUTO switch to HAND and run the equipment for 5 secs. then position to OFF.
 - 8.3.5 When bump testing is completed verify the equipment is stopped.
- 8.4 Start filling sump with water.
- 8.5 Turn HAND/OFF/AUTO switches for both pumps to AUTO.
- 8.6 Verify that LSP-1 (LSP-2) starts as water reaches the "lead pump on," level (approximately 2.5 feet).

- 8.7 Let the pump run until the water level is below the 2.5 foot level and then turn the HOA switch on the lead pump to OFF and then back to AUTO. (This should change the lead/lag status of the pumps)
- 8.8 Fill the sump to the "lead pump on" level again.
- 8.9 Verify that LSP-2 (LSP-1), previously in the lag position, starts up.
- 8.10 Turn both pump HOA switches to OFF.
- 8.11 Fill the sump to the "alarm," level, which is approximately three inches below the horizontal section of the discharge piping from the sump pumps.
- 8.12 Verify that the local colored alarm light comes on.
- 8.13 Position both the pump HAND/OFF/AUTO switches to AUTO
- 8.14 Verify that both pumps start and run.
- 8.15 Verify that both pumps shut off at approximately 6 inches above the bottom of the sump.
- 8.16 Position both the pump HAND/OFF/AUTO switches to OFF.
- 8.17 Position the electrical supply breakers to the "OPEN," position.
- 8.18 When testing in this section is completed then sign below.

WHD Test Engineer _____ Date _____

Appendix A: Instructions for completing Exceptions Log

Instructions

1. If the proposed change affects personnel safety then change the ATP JSA instead of changing the ATP.
2. If the change affects equipment function or performance or compromises or influences test data then an ECN must be issued prior to making a change.
3. If the change does not effect function or performance or compromises or influences test data or if an ECN has been approved then the ATP change is performed per the following instructions using the ATP change form on the next page.
 - A. Enter the next sequential exception\change serial number in appendix B.
 - B. Enter a detailed description of the exception\change including section, page etc. or the change may be attached to the form that shows the "as is" conditions and the "should be" conditions.
 - C. Enter the change in the ATP. New typewritten pages may be substituted for pages that do not contain data or signatures. Pages being replaced that contain data or signatures must be saved in appendix P. The ATP change number, date and initials of the person making the change must appear on each page or in the vicinity of the change.
 - E. Sign the ATP exception/change form indicating the change has been made and insert the form in appendix F.

Appendix B: ATP EXCEPTIONS/CHANGES

EXCEPTION/CHANGE LOG

Instructions: Enter the next sequential serial number i.e 001 and a short description of the item. Fill out the exception form using the serial number obtained from this log.