Dear Dr. Snyder:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPRM-73
Docket No. SU-320
Auxiliary Hoist Load Test Results

Attached for your information is a copy of the completed Unit Work Instruction (UWI) for the load test of the Auxiliary Hoist of the Polar Crane (Attachment 1). The completed UWI includes the data sheets which record the results of various tests performed during the load test. Also included are data sheets documenting results of the post-load test examinations of the hook, crane and wire rope (Attachment 2 and 3). A FOX, written against ECA 3082-85-0179 to document an unlike kind replacement in the upper weight type limit switch is at Attachment 4.

The auxiliary hoist was load tested to an actual weight of 22.5 tons; therefore, it is qualified to lift up to 25 tons, i.e., the original rated capacity. The results of the load test and post-load test examinations show no identifiable signs of stress due to the load test. A copy of an internal memo accepting the results of the load test is included as Attachment 5.

During the auxiliary hoist load test, a load cell with a 100,000 pound measuring capacity and a rated accuracy of ±1.0% was utilized. Unit Work Instruction 4/170-310/31-64-C575, "Polar Crane Auxiliary Hoist Testing", Attachment 2, page 3 of 13, specified "one load cell of 100,000 pounds measuring capacity permitting actual load determination from indicated
was within +0.5% accuracy within calibration range." Therefore, the
instrument used during performance of the auxiliary hoist rated load test
was not in accordance with the Unit Work Instruction requirements or

The load cell utilized during performance of the auxiliary hoist rated
load test was adequate to allow accurate determination of the load test
weight. The instrument utilized had a current calibration sticker with
calibration results traceable to the National Bureau of Standards.

Prior to performance of the load test, Whiting Corporation had been
contacted and concurred (Attachment 5) with a one-time rated load test of
the auxiliary hoist at 67,500 pounds. The need for this variance was
based on data obtained from a previous load cell which had indicated a
weight greater than 69,000 pounds. That load cell was later found to be
defective and was replaced with the cell used in the actual load test.
During performance of the load test, the load cell indicated 63,000
pounds under full load. This was in accordance with the Unit Work
Instruction which specified, "If at any time during lifting of the
pressurizer missile shield the indicated load exceeds 69,000 pounds, lower
the missile shield and discontinue testing." The indicated load did not
exceed 63,000 pounds as verified by the test results. Taking into
account the load cell accuracy of +1% full scale, the total test weight
did not exceed 66,000 pounds.

A Material Non-Conformance Report (MNCR) was issued based on the load
cell discrepancy. The MNCR has been dispositioned based on the Whiting
Corporation concurrence, as discussed above.

In view of the above information which confirmed that a calibrated load
load cell was utilized and the test weight did not exceed the maximum weight
authorized by Whiting, the load cell utilized and the rated load test
were judged to be acceptable. Therefore, ASNU has concluded that
the test results confirming a rated capacity of 29 tons are valid and
intends to place the auxiliary hoist into service beginning April 22,
1985.

Sincerely,

F. K. Standerfer
Vice President/Director, TMI-2

FRS/HBS/emi

Attachments

c: Deputy Program Director - TMI Program Office, Dr. W. O. Travers
This Unit Work Instruction provides the directions for performing an operational and rated load test for the Polar Crane Auxiliary Hoist in accordance with the requirements of ANSI 830.2.0-1983, Section 2-2.2.

The detailed instructions for performing the required work activities shall be divided into five sections as follows:

- Section 1.0 - Prerequisites
- Section 2.0 - Operational Test
- Section 3.0 - Rated Load Test Preparations
- Section 4.0 - Rated Load Test
- Section 5.0 - Post-Load Test Activities

All work activities are to be performed sequentially as listed in Sections 2.0, 3.0, 4.0, and 5.0. The line items in Sections 1.0, 3.0, and 5.0 shall be verified by the Responsible Field Engineer. Section 2.0 and 4.0 shall be
verified by the Start-up and Test Engineer. The format for detailing the work activities in Sections 2.0 and 4.0 shall be in accordance with Procedure 4000-ACF-1218.09 "Start-up and Test Procedure format, Preparation and Content" and are included as Attachments 1 and 2 respectively. Sections 3.0 and 5.0 require the use of the Polar Crane Main Hook for hoisting loads in excess of five tons.

1.0 PRECONDITIONS

1.1 Refurbishment Activities: The following walkdowns, inspections, and refurbishment tasks have been completed sufficiently to support performance of this Unit Work Instruction:

- 1.1.1 Performed mechanical component walkdowns per UWI 4370-3100-24-C483.
- 1.1.2 Performed electrical component walkdowns per UWI 4370-3738-84-E195.
- 1.1.3 Replaced electrical components per UWI 4370-3700-84-E240 and ECA 3882-84-0022, latest revision.
- 1.1.4 Performed electrical circuit checks per UWI 4370-3700-84-E241.
- 1.1.5 Performed electrical component functional checks per UWI 4370-3790-84-E242.
- 1.1.6 Performed visual and non-destructive examination of the load hook per UWI 4370-3100-84-C660.
- 1.1.7 Performed visual examination of the drum support bearing per UWI 4370-3100-84-C661.
- 1.1.8 Performed visual examination of the bottom block per UWI 4370-3100-84-C662.
- 1.1.9 Replace the hoisting wire rope per UWI 4370-3100-85-C906.
- 1.1.10 Performed visual examination of the upper sheave nest per UWI 4370-3100-84-C664.
- 1.1.11 Fabricate missile shield rigging plate per UWI 4370-3100-84-C574 and C954.
- 1.1.12 Replaced and adjusted hoist brakes per UWI 4370-3100-84-C665.
UNIT
WORK INSTRUCTION
CONTINUATION SHEET
4370-3100 84 C575

1.1.13 Performed oil change and lubrication per UWI 4370-3100-84-C666.

1.1.14 Replaced the upper weight type limit switch cable per UWI 4370-3100-85-C898 and ECN 3802-85-0179, latest revision.

1.1.15 Replaced the zero speed switch per UWI 4370-3700-85-E393.

1.1.16 Remove/Import Prepares/Prepares, Changes per UWI 4370-3100-85-C937.

1.2 Verify approval of the Auxiliary Hoist Load Test Safety Evaluation Report.

The Polar Crane shall be operated in accordance with Procedure 4000-ADM-3891.01 and any applicable TCN's.

1.4 Obtain a RWP for performing the task required.

1.5 Obtain a CTR for removal of test equipment as required after completing load test.

1.6 Initiate a Job Ticket as required (refer to Attachment 13).

Refer to Attachment 3 for the Required Plant Configuration prior to operating the auxiliary hoist per Section 2.0.

Prior to performing Section 4.0, notify the Control Room Shift Foreman to perform the valve arrangement in accordance with Attachment 4.

Prior to performing Section 4.0, a dedicated communications link shall be established between the Coordination Center and Motor Control Center 2-32A. Breaker 10EF on the 328' Elevation of the auxiliary building. An individual qualified to operate the breaker shall be stationed at the Motor Control Center at all times during the implementation of Section 4.0.

2.0 OPERATIONAL TEST

2.1 Perform the Operational test in accordance with the instructions provided in Attachment 1.

2.2 This section (Attachment 1) shall be conducted and documented in accordance with Procedure 4000-ADM-3055.01 - "TMI-2 Start-up and Test Program."
3.0 RATED LOAD TEST PREPARATION

3.1 Stage rigging equipment on Elevation 347' and/or 367' as required to perform the rated load test.

3.1.1 Notify the Control Room Shift Foreman of the Required Plant Configuration per Attachment 9 prior to staging load test rigging.

3.1.2 Reference Attachment 10 for load path diagram required to stage load test rigging.

3.1.3 Reference Attachment 11 for rigging sketch of skip box and/or pan to be used for transporting and staging load test rigging.

3.1.4 The 5 ton hoist may be used to stage load test rigging as required.

3.2 Stage cribbing on Elevation 347' as shown on Attachment 8 to support the pressurizer missile shield after relocating.

3.3 Visually examine the rigging to be used in line item 3.5 for broken wires, cracks, and other obvious damage prior to use. Reference Attachment 12 for wire rope sling acceptance criteria. (See Note A on page 6.)

3.4 Remove the 5 ton hoist from the Polar Crane main hook and stage on Elevation 347'.

3.5 Rig the main hoist to lift the pressurizer missile shield in accordance with Attachment 5.

3.6 Move the pressurizer missile shield to Elevation 347' per the load path shown on Attachment 6. Restrict the load height to an approximate 18" clearance over any obstructions in the load path.

3.7 Disconnect shackles from the main hoist missile shield rigging plate and raise the main load block with the remaining rigging to an elevation which will avoid interference with the rated load test.

3.8 Re-Examine the load test rigging to be used in line item 3.10 for broken wires, cracks, and other obvious damage prior to use. Reference Attachment 12 for wire rope sling acceptance criteria. (See Note A on page 6.)
Position the Polar Crane in the parked position to allow the inspection team to ascend to the Polar Crane.

Rig the Auxiliary Hoist to the pressurizer missile shield in accordance with Attachment 7 in preparation to perform the rated load test.

4.0 RATED LOAD TEST

4.1 Perform the rated load test in accordance with the instructions provided in Attachment 2.

4.2 This section (Attachment 2) shall be conducted and documented in accordance with Procedure 4000-ADM-3055.01 - "TMI-2 Start-up and Test Program".

5.0 POST-LOAD TEST ACTIVITIES

5.1 Disassemble the load test rigging from the auxiliary hoist and raise the auxiliary load block to an Elevation which will avoid interferences during travel.

5.2 Position the Polar Crane in the parked position to allow the inspection team to descend from the Polar Crane.

5.3 Examine the rigging to be used in line Item 5.5 for broken wires, cracks, and other obvious damage, prior to use. Reference Attachment 12 for wire rope sling acceptance criteria. (See Note A on page 6.)

5.4 Notify the Control Room Shift Foreman of the Required Plant Configuration per Attachment 9 prior to staging load test rigging.

5.5 Rig the main hoist to lift the pressurizer missile shield in accordance with Attachment 5.

5.6 Move the pressurizer missile shield to Elevation 307' per the load path shown on Attachment 6. Restrict the load height to an approximate 18" clearance over any obstructions in the load path.
5.7 Disconnect the rigging from the pressurizer missile shield and the main hoist load block.
5.8 Re-attach the 5 ton hoist to the Polar Crane main hook.
5.9 Stage rigging equipment at appropriate storage location.
5.10 Remove cribbing and any debris from work area.

NOTES

A. Procedures 4000-IMP-3890.01 "Daily and Periodic Inspection of Slings" and 4000-IMP-3890.04 "Control and Inspection of Handling Equipment" shall be the governing acceptance criteria if these procedures have been approved by the date of test implementation.
**Preliminary Evaluation**

**Part I**

**PROCEDURE**

**PROCEDURE CHANGE REQUEST**

**TEST**

**CHANGE (MODIFICATION)**

**UNI**

**EXPERIMENT**

**DOCUMENT NUMBER:** 4370-3100-84-C575  **REV.:** 0

**TITLE/SUBJECT:** Polar Crane Auxiliary Hoist Testing

**NOTE:** If uncertain as to the answer to any of the following questions, the question shall be answered yes.

1. **ENVIRONMENTAL IMPACT DETERMINATION**

1.1 Does the document include actions that result in a release or potential release of liquid or gaseous radioactive material to the environment?  
   - YES  
   - NO

1.2 Does the document address systems, components, or actions which control or monitor releases of potential releases of radioactive or non-radioactive materials to the environment (including sampling, data recording and retention, instrument calibration, measurements and analysis, and actions to be taken when limits are reached or exceeded)?
   - YES  
   - NO

1.3 Does the document address the disposition or storage for disposal of any non-radioactive waste materials?
   - YES  
   - NO

If any of the above are yes, complete Part II

*1.4 Is the answer to any question in Part II yes? (Add/ensure required signatories are included on document cover page.)
   - YES  
   - NO

2. **PEIS IMPACT DETERMINATION**

*2.1 Does the document result in impact values stated in the PEIS being exceeded?  
   - YES  
   - NO

3. **UNREVIEWED SAFETY QUESTION DETERMINATION**

3.1 Does the document result in changes in the facility, or changes in the procedures described in the FSAR, TEA, SD or a Safety Evaluation Report submitted to the NRC?
   - YES  
   - NO

3.2 Does the document result in tests or experiments not described in the FSAR, TEA, SD?
   - YES  
   - NO

If either 3.1 or 3.2 are yes, complete Part III

*3.3 Is the answer to any question in Part III yes? (Add/ensure required signatories are included on document cover page.)
   - YES  
   - NO

4. **IMPORTANT TO SAFETY DETERMINATION**

*4.1 Does the document address work on a structure, system, component, or an activity that provides reasonable assurance that the facility can operate without undue risk to the health and safety of the public?
   - YES  
   - NO

This includes the broad class of plant features covered (not necessarily explicitly) in the General Design Criteria (GDC)10CFR50 Appendix A) that contributes in important ways to the safe operation and protection of the public in all phases and aspects of facility operation (i.e., normal operation and transient control as well as accident mitigation).

*4.2 (Safety Related Determination)

Does the document address those structures, systems or components designed to remain functional for the Safe Shutdown Earthquake (SSE) which are listed in the OCL (procedure 4000.ENG.7311.01) and necessary to assure required safety functions, i.e.:

(1) The integrity of the reactor coolant pressure boundary
   - YES  
   - NO

(2) The capability to shutdown the reactor and maintain it in a safe shutdown condition
   - YES  
   - NO

(3) The capability to prevent or mitigate the consequences of accidents which could result in potential off-site exposure comparable to the guideline exposures of 10 CFR100.
   - YES  
   - NO

*4.3 Does the document address systems or components identified in Procedure 4000.ENG.7311.01 as Class I or II?
   - YES  
   - NO

(Optional explanation)

*4.4 Does the document address activities identified in Appendix A to USNRC Regulatory Guide 1.33, Rev. 2, February 1979 which provides administrative, operational or programmatic controls that are not specifically system related?
   - YES  
   - NO
### 5. IDENTIFICATION OF CHANGES TO NRC APPROVED DOCUMENTS

**5.1** Does the Document require a change to:

- A. Technical Specifications
- B. Plant License
- C. Special Orders or Agreements
- D. Recovery Operations Plan
- E. Oooetterg Organization Plan
- F. Recovery Quality Assurance Plan
- G. Radiation Protection Plan
- H. Security Plan
- I. Emergency Plan
- J. Fire Protection Plan

### 6. OTHER TECHNICAL SPECIFICATION INDEPENDENT SAFETY REVIEW REQUIREMENTS

**6.1** Does the Document implement/impact any of the following:

- A. Boration Control per Technical Specification 3.1.1 and 4.1.1.1.(1). 2
- B. Reactor Coolant System per Technical Specification 3.4.1 and 4.4.1
- C. Containment Integrity per Technical Specifications 1.7. 3.6.1.1 and 4.6.1.1
- D. Radiation Monitoring Instrumentation Technical Specification 4.3.3
- E. Containment Air Losses per Technical Specification 3.6.1.3 and 4.6.1.3
- F. A.C. Distribution per Technical Specification 3.8.1.1 and 4.8.1.1
- H. Reactor Building water per Technical Specification 3.9.14
- I. Crane Travel Containment Building per Technical Specification 3.10.1

### 7. REVIEW SIGNIFICANCE

**7.1** Does the Document cause any of the above asterisked (*) questions to be answered yes?

**7.2** Is the Document or changes thereto significant in content, i.e., more than a typographical error, renumbering, change of title or labels, implement approved procedures etc.? (Optional justification)

---

**8. SCL Review**

8.1 Are the answers to both questions 7.1 and 7.2 yes? If so, the Document shall require review by the Safety Review Group prior to implementation.

***NOTE:*** Temporary Procedure Change (TPC) approvals may occur after implementation per 4000.4.16, 3000.11, Section 4.3.5.1

---

**9. NRC PRIOR APPROVAL REQUIRED**

**9.1** Is the answer to question 8.3 or 8.4 yes and does the document

- A. Directly relate to core cooling? or
- B. Could cause the magnitude of radiological releases to exceed limits established by the NRC? or
- C. Could increase the likelihood of failure in systems important to nuclear safety and radioactive waste processing or storage? or
- D. Alter the distribution or processing of significant quantities of stored radioactivity or radioactive activity being released through known flow paths?

If yes, then the Document shall be subject to review by SCL first and by the NRC prior to implementation, (add/ensure SCL and NRC are on document cover page).

**9.2** Is the answer to question 8.1 yes? If yes, then the Document shall be subject to approval by SCL first and by the NRC prior to implementation, (add/ensure SCL and NRC are on document cover page).

***NOTE:*** Temporary Procedure Change (TPC) approval may occur after implementation per 4000.4.16, 3000.11, Section 4.3.5.1.

**9.3** Is the answer to question 5.1 (in any part) yes? If yes, then a change to the NRC approved document must be obtained via TMI-2 licensing prior to Implementation.

---

**EVALUATION COMPLETED BY:**

**Signature:**

**Date:**

---

**COCENG TII/16/85 1/2/89**
### Nuclear Safety Evaluation

**PROCEDURE:**

**PROCEDURE CHANGE REQUEST:**

**REV.:**

**CHANGE (MODIFICATION):**

**EXPERIMENT:**

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**REF.:** 10 CPR SC.58(a) (2)

1. Is the probability of occurrence or the consequences of an accident or malfunction of equipment smaller to safety previously evaluated in the FSAR, TEC, or SD increased? If no, provide the reasons why probability is not increased, including section of FSAR, TEC or SD in which evaluated.

   **SEE THE SAFETY EVALUATIONS FOR THE POLAR CRANE LOAD TEST AND THE AUXILIARY HOIST LOAD TEST**

2. Is the possibility for an accident or malfunction of a different type than any evaluated in the FSAR, TEC or SC created? If no, provide reasons why the possibility does not exist.

   **SEE RESPONSE TO ITEM 1!**

3. Is the margin of safety as defined in the basis for any technical specification reduced? If no, provide the reasons why there is no reduction including identification of reference basis.

   **SEE RESPONSE TO ITEM 1!**

4. Is the document outside the limits of controls established by the technical specifications? Identify technical specification to which document applies. (If none, so state).

   **NOTE: POLAR CRANE LOAD TEST PROCEDURE IS NOT ADDRESSED BY THE TECH. SPECS.**

If any of the above are yes, NEC and SPS review, prior to implementation, is necessary.

5. Comments:

   Evaluation Completed By: [Signature] 12/08/89
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POLAR CRANE AUXILIARY HOIST OPERATIONAL TEST

1.0 PURPOSE

1.1 This procedure shall provide directions for performing an operational test per the requirements of ANSI B30.2.0-1983, Paragraph 2-2.2.1.

1.1.1 Exceptions to Test Standards - The test will meet the requirements of ANSI B30.2.0-1983, Paragraph 2-2.2.1. Exceptions to be noted are the omission of bridge and trolley travel from the test. These functions have been previously tested and accepted per Unit Work Instruction 4370-3891-83-PC0001.

2.0 REFERENCES

2.1 Procedure 4000-IMP-3891.01 - "TMI Unit 2 Recovery Operations Polar Crane Operation"

2.2 Procedure 4000-ADM-3020.08 - "Configuration Control: Safety Function Bypass, Electrical Jumpers, Lifted Leads, and Temporary Mechanical Modifications"
2.3 VENDOR MANUALS

2.3.1 General Electric Instruction GEH-2458A for Geared Rotary Limit Switch Model CRL15E

3.0 PREREQUISITES

3.1 TESTS

3.1.1 Electrical circuit checks completed as per UWI

\[ \text{Signature} \quad \text{Date} \]

3.1.2 Electrical component functional checks completed as per UWI

\[ \text{Signature} \quad \text{Date} \]

3.2 CONSTRUCTION COMPLETION STATUS

3.2.1 Replaced and adjusted auxiliary hoist brakes per UWI

\[ \text{Signature} \quad \text{Date} \]
3.2.2 Performed oil change and lubrication per UWI 4370-3100-84-C666.

3.2.3 Replaced electrical components per UWI 4370-3700-84-E240 and ECA 3882-84-0092, Latest Revision.

3.2.4 Replaced the zero switch per UWI 4370-3700-85-E393.

3.2.5 Replaced the upper weight type limit switch cable per UWI 4370-3100-85-0886 and ECA 3882-85-0179, Latest revision.

3.2.6 Replaced the hoisting wire rope per UWI 4370-3100-85-C908.

3.3 ENVIRONMENTAL CONDITIONS

None
3.4 TECHNICAL SPECIFICATION

None

4.0 TEST EQUIPMENT

None

5.0 LIMITS AND PRECAUTIONS

5.1 This test involves work in radiation areas. Restrictions of the applicable RWPs shall be complied with.

5.2 This test involves work assignments on the polar crane. Safety precautions shall be observed to prevent fall hazards.

6.0 PLANT STATUS

6.1 Prior to operating the auxiliary hoist, the required plant configuration shall comply with Attachment 3.

[Signature] [Date]

7.0 PREREQUISITE SYSTEM CONDITIONS

None
8.0 TEST METHOD

NOTE: A test engineer shall initial in the left hand margin of each completed step.

8.1 Position the polar crane to allow the auxiliary hoist lower block to be lowered to El. 305' through the El. 347' open hatch after the inspection team has ascended to the trolley deck.

8.2 Install a jumper wire to bypass the normal function of auxiliary hoist geared rotary limit switch (screw type limit switch) per Procedure 4000-ADM-3020.08, "Configuration Control: Safety Function Bypass, Electrical Jumpers, Lifted Leads, and Temporary Mechanical Modifications.

8.3 Using the high speed auxiliary hoist motor, lower the load block for approximately 10 seconds or until the upper weight type limit switch is disengaged, whichever is longer.

CAUTION: When operating in UP direction, exercise extreme caution to prevent load block from contacting upper sheave nest (two-blocking). Be prepared to stop hoist motor instantly.

8.4 Using the high speed auxiliary hoist motor, raise the load block until it engages with the upper weight type limit switch and the motor is stopped. Record data in Section 9.G.
Using the auxiliary hoist inching drive motor, lower the load block for 1 minute or until the upper weight type limit switch is disengaged, whichever is longer.

Using the auxiliary hoist inching drive motor, raise the load block until it engages with the upper weight type limit switch and the motor is stopped. Record data in Section 9.0.

Remove the jumper wire installed in Line Item 8.2 per Procedure 4000-ADM-3020.08.

Using the high speed auxiliary hoist motor, lower the load block approximately 36 inches below the elevation in which the upper weight type limit switch was activated.

Set the upper geared rotary limit switch at present load block elevation per vendor instructions on Exhibit 2.

Using the high speed auxiliary hoist motor, lower the load block for approximately 30 seconds.

Using the high speed auxiliary hoist motor, raise the load block until the upper geared rotary limit switch is activated. Record data in Section 9.0.

NOTE: If the upper geared rotary limit switch does not activate, repeat Steps 8.8 through 8.11 until it activates satisfactorily.
8.12 Using the auxiliary hoist inching drive motor, lower the load block for approximately 60 seconds.

8.13 Using the auxiliary hoist inching drive motor, raise the load block until the upper geared limit switch is activated. Record data in Section 9.0.

NOTE: If the upper geared limit switch does not activate, repeat Steps 8.8 through 8.13 until it activates satisfactorily.

8.14 Lower the auxiliary hoist load block through the 347' open hatch using the high speed motor and the inching drive motor at alternating 60 second (approximate) intervals. Discontinue lowering when the auxiliary load hook is approximately 12 inches above the elevation 305' floor. Record general operation data in Section 9.0.

8.15 Set the lower geared rotary limit switch at the present load block elevation per vendor instructions on Exhibit 2.

8.16 Using the high speed auxiliary hoist motor, raise the load block for approximately 30 seconds.

8.17 Using the high speed auxiliary hoist motor, lower the load block until the lower geared rotary limit switch is activated. Record data in Section 9.0.

NOTE: If the lower geared rotary limit switch does not activate, repeat Steps 8.15 through 8.17.
8.18 Using the auxiliary hoist inching drive motor, raise the load block for approximately 60 seconds.

8.19 Using the auxiliary hoist inching drive motor, lower the load block until the lower geared limit switch is activated. Record data in Section 9.0.

NOTE: If the lower geared rotary limit switch does not activate, repeat Steps 8.15 through 8.19.

8.20 Raise the auxiliary hoist load block to a general elevation which will avoid interferences during travel.

8.21 Park the polar crane in its normal "parked" position per Procedure 4000-IMP-3891.01 to allow inspection team to descend from the crane.

9.0 DATA REQUIREMENTS

9.1 Record data as specified in Section 8 and on attached data sheets, Exhibit 1.

10.0 ACCEPTANCE CRITERIA

10.1 Acceptance criteria is stated on Section 9.0 data sheets and satisfactory operation is observed per Section 1.0.

[Signature] [Date]
<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>Upper weight type limit switch activates in high speed.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>3/29/85</td>
<td>002</td>
</tr>
<tr>
<td>8.6</td>
<td>Upper weight type limit switch activates in inching speed.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>3/29/85</td>
<td>1026</td>
</tr>
<tr>
<td>8.11</td>
<td>Upper geared rotary limit switch activates in high speed.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>3/27/85</td>
<td>1047</td>
</tr>
<tr>
<td>8.13</td>
<td>Upper geared rotary limit switch activates in inching speed.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>3/24/85</td>
<td>1059</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist brakes (inboard and outboard) proper operation and engagement.</td>
<td>✔️</td>
<td>SAT.</td>
<td>✔️</td>
<td>3/24/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist drive coupling and shafts for excessive vibration or wobble.</td>
<td>✔️</td>
<td>SAT.</td>
<td>✔️</td>
<td>3/21/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist drum support bearing for excessive noise and vibration.</td>
<td>✔️</td>
<td>SAT.</td>
<td>✔️</td>
<td>3/26/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist gear case for excessive noise, vibration, spillage, or throw of lubricants.</td>
<td>✔️</td>
<td>SAT.</td>
<td>✔️</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>STEP NO.</td>
<td>DESCRIPTION OF DATA REQUIRED</td>
<td>DATA</td>
<td>ACCEPTANCE CRITERIA</td>
<td>INITIALS</td>
<td>DATE</td>
<td>TIME</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>------</td>
<td>---------------------</td>
<td>----------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist driveshaft support bearings for excessive noise and vibration</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist drum for rotation and operating condition.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist wire rope for reeving and unreeving ease.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>Check auxiliary hoist for excessive noise, overall condition, and operation.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td></td>
<td>NOTE: Due to location of the upper sheave nest, only limited checks can be performed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.14</td>
<td>Observe the auxiliary hoist load block for excessive noise, twisting, rocking, or other abnormal conditions.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>In the inching speed mode, check clutch engagement for slippage, vibration, noise and overall condition.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
<tr>
<td>8.14</td>
<td>In the inching speed mode, check the operation of the motor gear box for excessive noise and vibration.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JPV</td>
<td>3/29/85</td>
<td>1120</td>
</tr>
</tbody>
</table>
### 9.0 DATA REQUIRED

<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.14</td>
<td>Check the eddy current brake for scraping, rubbing, vibration, excessive noise, and overall operation.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>JV</td>
<td>3/21/55</td>
<td>120</td>
</tr>
<tr>
<td>8.17</td>
<td>Lower geared rotary limit switch activates in high speed.</td>
<td>YES</td>
<td>YES</td>
<td>JV</td>
<td>3/26/55</td>
<td>1131</td>
</tr>
<tr>
<td>8.19</td>
<td>Lower geared rotary limit switch activates in inching speed.</td>
<td>YES</td>
<td>YES</td>
<td>JV</td>
<td>3/29/55</td>
<td>1145</td>
</tr>
</tbody>
</table>
DESCRIPTION

The CR115E Geared Rotary Limit Switch is designed to co-ordinate reversing operations with the number of revolutions of a motor shaft or the rotation of driven equipment. Typical applications include control of limits of travel on machinery, opening and closing of doors and windows, operation of valves and various sequencing operations. The internal components of the device are shown in Figure 1 and are the same for all forms. Two, three, and four N.O.-N.C. contact forms are available in a "radial stacked" arrangement. The dotted line in Figure 1 shows the positioning of contacts for a four switch form.

The operating mechanism consists of adjustable cams driven by a shaft through a gear reduction. Each cam operates the contacts of one switch unit. For various gear reductions available, see Table 1.

CONTACT RATING

<table>
<thead>
<tr>
<th>A-C PILOT DUTY</th>
<th>O-C PILOT DUTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLT</td>
<td>BREAK</td>
</tr>
<tr>
<td>115</td>
<td>15 amp</td>
</tr>
<tr>
<td>230</td>
<td>10 amp</td>
</tr>
<tr>
<td>460</td>
<td>6 amp</td>
</tr>
<tr>
<td>575</td>
<td>5 amp</td>
</tr>
</tbody>
</table>

INSTALLATION

Mount the limit switch in any desired position using the three mounting holes provided in the enclosure. If the input shaft is to be used in conjunction with another shaft, a flexible coupling is recommended for elimination of stress on the input shaft. Both plain shafts and Woodruff Key shafts are available for ease in mounting any type of coupling or gear drive. The maximum permissible speed of the input shaft is 3600 R.P.M.

After the switch has been wired in accordance with the contact arrangement in the cover of the switch, adjust the cams properly, fold down the insulating shields and replace the limit switch cover.

ADJUSTMENT

The operating mechanism of the limit switch should be adjusted to correlate the motion of that equipment it is controlling. For limitations of the switch, see Table 1.

The arrow on the insulating shield covering each of the switch units points to the corresponding adjusting pin. Also, each corresponding cam has a white marker on the gear teeth to help locate the position of the cam. The adjustment of the trip point of each of the switch units is a simple operation.

1. Remove the enclosure cover.
2. Loosen the two cam clamping screws on top of the cam assembly one half turn each (see Figure 1).
3. Locate the adjusting pin on each cam by referring to the indicating arrow on the insulation shield.
4. Depress pinion with a screwdriver until gears mesh.
5. Rotate cam in direction to operate switch.

FIGURE 1 - CR115E Geared Rotary Limit Switch

6. The white marker on the gear teeth is directly over the nylon roller that trips the switch. When the operating cam has been adjusted so the roller has tripped the switch, the adjustment is complete.
7. Retighten clamping screws and replace the cover of the switch.

MAINTENANCE

The device has been permanently lubricated at the factory. An increase in life may be obtained by occasionally placing a small quantity of gear grease on the worm and worm gear.

If a Precision Snap-Acting Switch should be in need of replacement, remove the two mounting screws and replace the switch.

<table>
<thead>
<tr>
<th>TABLE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEAR RATIO</td>
</tr>
<tr>
<td>20:1</td>
</tr>
<tr>
<td>40:1</td>
</tr>
<tr>
<td>80:1</td>
</tr>
<tr>
<td>111:1</td>
</tr>
<tr>
<td>222:1</td>
</tr>
<tr>
<td>320:1</td>
</tr>
<tr>
<td>444:1</td>
</tr>
<tr>
<td>640:1</td>
</tr>
<tr>
<td>1280:1</td>
</tr>
</tbody>
</table>

The values above are for devices using the CR115B1 PS513 and having quick reset clutch feature on relays 111-4 through 1280-9.

NOTE: Friction dwell cams: .03" available.
1.0 PURPOSE

1.1 This procedure shall provide directions for performing a rated load test per the requirements of ANSI B30.2.0-1983, Paragraph 2-2.2.2.

1.1.1 Exceptions to Test Standards - The test will meet the requirements of ANSI B30.2.0-1983, Paragraph 2-2.2.2. Exceptions to be noted are the omission of bridge and trolley travel from the test. These functions have been previously tested and accepted per Unit Work Instruction 4370-3891-83-PC0001.

1.1.2 The test load shall exceed the rated load by more than 125 percent (31.25 tons), but not more than 130.6 percent (32.65 tons). Reference Exhibit 2 for the manufacturer's authorization to exceed the rated load by more than 125 percent.

2.0 REFERENCES

2.1 Procedure 4000-1MP-3891.01 - "TMI Unit 2 Recovery Operations Polar Crane Operation"
2.2 Procedure 4000-AOM-3020.08 - "Configuration Control: Safety Function Bypass, Electrical Jumpers, Lifted Leads, and Temporary Mechanical Modifications"

3.0 PREREQUISITES

3.1 TESTS

3.1.1 Polar Crane Auxiliary Hoist Operational Test completed per UWI 4370-3100-84-C575, Section 2.0

Signature

Date

3.2 CONSTRUCTION COMPLETION STATUS

None

3.3 ENVIRONMENTAL CONDITIONS

None
3.4 TECHNICAL SPECIFICATION

None

4.0 TEST EQUIPMENT

| QC | 4.1 One load cell of 100,000 pounds measuring capacity permitting actual load determination from indicated was within +.5 percent accuracy within calibration range. Calibration range shall be from 0 to 100,000 pounds. |
| QC | Load Cell Manufacturer: | Dillon | 100,000 lb.
| QC | Load Cell Serial No.: | SD-6 |
| QC | Calibration Due Date: | 1-11-86 |
| QC | Load Cell Weight: | -500 lbs |

| QC | 4.2 One ammeter of 999 amperes measuring capacity permitting actual current readings within +2 percent accuracy within calibration range. Calibration range shall be from 0 to 999 amperes. |
| QC | Ammeter Manufacturer: | Amprobe |
| QC | Ammeter Serial No.: | 1500-20 |
| QC | Calibration Due Date: | 9-13-85 |
3.4 TECHNICAL SPECIFICATION

None

4.0 TEST EQUIPMENT

4.1 One load cell of 100,000 pounds measuring capacity permitting actual load determination from indicated was within ±0.5 percent accuracy within calibration range. Calibration range shall be from 0 to 100,000 pounds.

Load Cell Manufacturer: Dillon
Load Cell Serial No.: SD-4
Calibration Due Date: 1-11-86
Load Cell Weight: 100,000 lb. with null indicator "0" reading

4.2 One ammeter of 999 amperes measuring capacity permitting actual current readings within ±2 percent accuracy within calibration range. Calibration range shall be from 0 to 999 amperes.

Ammeter Manufacturer: Amp Probe
Ammeter Serial No.: 1500-20
Calibration Due Date: 9-13-85
4.3 One surveying level with a minimum leveling accuracy of 0 to 1/4" at 75 feet.

Level Manufacturer: **DIETZEN**
Level Serial No.: **525634**

5.0 **LIMITS AND PRECAUTIONS**

5.1 This test involves work in radiation areas. Restrictions of the applicable RWPs shall be complied with.

5.2 This test involves work assignments on the polar crane. Safety precautions shall be observed to prevent fall hazards.

6.0 **PLANT STATUS**

6.1 Prior to operating the auxiliary hoist, the required plant configuration shall comply with Attachment 4.

   Signature: [Signature]
   Date: 4/1/55

7.0 **PREREQUISITE SYSTEM CONDITIONS**

None
8.0 TEST METHOD

NOTE: A test engineer shall initial in the left hand margin of each completed step.

8.1 Jumper the thermal overloads for both the auxiliary hoist high speed and inching speed motor in accordance with Procedure 4000-ADM-3020.08, "Configuration Control: Safety Function Bypass, Electrical Jumpers, Lifted Leads, and Temporary Mechanical Modifications".

8.2 Attach the ammeter specified in Line Item 4.2 to one phase of the inching speed motor as required to monitor the running current during motor energization.

CAUTION: IF AT ANY TIME DURING MOTOR ENERGIZATION, THE MONITORED RUNNING CURRENT OF THE INCHING SPEED MOTOR EXCEEDS 1.65 AMPERES, LOWER THE MISSILE SHIELD AND DISCONTINUE TESTING. IN-RUSH (INITIAL) CURRENT SHALL NOT BE INCLUDED IN MONITORING.

8.3 Operate the Auxiliary Hoist inching speed motor in the up direction until tension is applied to the rigging and the indicated load begins to increase.

Continue to operate the inching speed motor until the indicated load reaches 62500 pounds (+1000 pounds). Record data in Section 9.0.
Beginning with the outboard Auxiliary Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.

Manually depress the solenoid of the inboard brake to release the inboard brake wheel from the shoes and hold for 5 minutes. Record data in Section 9.0.

Release the inboard brake solenoid and visually observe the match marks placed on the outboard brake in Step 8.5 for any displacement. Record data in Section 9.0.

Switching to the inboard Auxiliary Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.

Manually depress the solenoid of the outboard brake to release the outboard brake wheel from the shoes and hold for 5 minutes. Record data in Section 9.0.

Release the outboard brake solenoid and visually observe the match marks placed on the inboard brake in Step 8.6 for any displacement. Record data in Section 9.0.
8.5 Beginning with the outboard Auxiliary Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.

8.6 Manually depress the solenoid of the inboard brake to release the inboard brake wheel from the shoes and hold for 5 minutes. Record data in Section 9.0.

8.7 Release the inboard brake solenoid and visually observe the match marks placed on the outboard brake in Step 8.5 for any displacement. Record data in Section 9.0.

8.8 Switching to the inboard Auxiliary Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.

8.9 Manually depress the solenoid of the outboard brake to release the outboard brake wheel from the shoes and hold for 5 minutes. Record data in Section 9.0.

8.10 Release the outboard brake solenoid and visually observe the match marks placed on the inboard brake in Step 8.8 for any displacement. Record data in Section 9.0.

Note: Testing was discontinued on 4/1/85 due to faulty loads. All data recorded on this page was reperformed on 4/5/85. — Sig. 9/6/85
CAUTION: ANY TIME DURING THE LIFTING OF THE PRESSURIZER SHIELD THE LOAD EXCEEDS 65,000 POUNDS, LOWER THE MISSILE SHIELD AND OIS TESTNG.

CAUTION: IF SLIPPAGE IS DETECTED, TEAM MEMBERS ON THE TROLLEY DECK SHOULD IDENTIFY THE CAUSE BEFORE DISCONTINUING THE TEST.

QC

8.11 Lift the missile shield approximately 6 inches in the inching speed mode and stop. Hold the load for 5 minutes and observe for any abnormal conditions, such as slippage. If abnormal conditions exist, lower the load in inching speed and discontinue testing. Record data in Section 9.0.

QC

8.12 Rotate the pressurizer missile shield in either a clockwise or counter-clockwise direction approximately 90° while observing the hook for swivel capabilities.

QC

8.13 Return the pressurizer missile shield to its original lifted position while continuing observation of the hook for swivel capabilities. Record data in Section 9.0.

QC

8.14 In inching speed, lower the load approximately 3 inches and hold for 5 minutes. Record data in Section 9.0.
8.15 Disconnect the ammeter specified in Section 4.2 from the inching motor circuitry and reattach to one phase of the auxiliary hoist high speed motor as required to monitor the running current during motor energization.

CAUTION: IF AT ANY TIME DURING MOTOR ENERGIZATION, THE MONITORED RUNNING CURRENT OF THE HIGH SPEED MOTOR EXCEEDS 65 AMPERES, LOWER THE MISSILE SHIELD AND DISCONTINUE TESTING. IN-RUSH (INITIAL) CURRENT SHALL NOT BE INCLUDED IN MONITORING.

8.16 Raise the load in fast speed to a maximum height of 3 feet above the support structure. Record the load reference height in Section 9.0. Hold the load for 10 minutes minimum. Record the actual time in Section 9.0. After time has elapsed, recheck reference height. Record the load reference height in Section 9.0. Complete data recording in Section 9.0.

8.17 After rechecking reference height, lower load in high speed to within one foot of the support structure. In inching speed, lower load until the weight of the pressurizer missile shield is no longer supported by the crane and the slings are relaxed.

8.18 Remove jumpers installed on the thermal overloads in Step 8.1 per Procedure 4000-ADII-3020.08. Also disconnect ammeter installed per Step 8.5.
9.0 DATA REQUIREMENTS

9.1 Record data as specified in Section 8 and on attached data sheets, Exhibit 1.

10.0 ACCEPTANCE CRITERIA

10.1 Acceptance criteria is stated on Section 9.0 data sheets and satisfactory operation is observed per Section 1.0.

Signature  4/2/85

Date
<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>Load cell indicated load.</td>
<td>62,700 lbs</td>
<td></td>
<td></td>
<td>4/2/85</td>
<td>1615</td>
</tr>
<tr>
<td>8.6</td>
<td>Outboard brake load hold time.</td>
<td>5 min</td>
<td>5 Minutes Minimum</td>
<td></td>
<td>4/2/85</td>
<td>1624</td>
</tr>
<tr>
<td>8.7</td>
<td>Visual examination of the outboard brake for march mark displacement.</td>
<td>No visual displacement</td>
<td></td>
<td>4/2/85</td>
<td>1624</td>
<td></td>
</tr>
<tr>
<td>8.7</td>
<td>Load cell indicated load.</td>
<td>62,500 lbs</td>
<td>(±1,000 lbs.)</td>
<td></td>
<td>4/2/85</td>
<td>1624</td>
</tr>
<tr>
<td>8.9</td>
<td>Inboard brake load hold time.</td>
<td>5 min</td>
<td>5 minutes maximum</td>
<td></td>
<td>4/2/85</td>
<td>1631</td>
</tr>
<tr>
<td>8.10</td>
<td>Visual examination of the inboard brake for march mark displacement.</td>
<td>No visual displacement</td>
<td></td>
<td>9/2/85</td>
<td>1631</td>
<td></td>
</tr>
<tr>
<td>8.10</td>
<td>Load cell indicated load.</td>
<td>62,500 lbs</td>
<td>(±1,000 lbs.)</td>
<td></td>
<td>9/2/85</td>
<td>1631</td>
</tr>
<tr>
<td>8.11</td>
<td>Pressurizer missile shield indicated load.</td>
<td>65,000 lbs</td>
<td>Less than 65,000 lbs.</td>
<td></td>
<td>4/2/85</td>
<td>1637</td>
</tr>
<tr>
<td>8.11</td>
<td>Inching speed motor monitored running current.</td>
<td>1.6 A</td>
<td>Less than 1660 amps.</td>
<td></td>
<td>4/2/85</td>
<td>1637</td>
</tr>
</tbody>
</table>
Note: Testing was discontinued on 4/1/85 due to faulty load cell. All data recorded was reperformed on 4/2/85. Performed with D.11 in SD-4.

9.0 DATA REQUIRED

<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS</th>
<th>ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>Load cell indicated load.</td>
<td>61,520 lbs.</td>
<td>62,500 lbs. (±1,000 lbs.)</td>
<td>JG</td>
<td>2/1.55</td>
<td>1055</td>
<td></td>
</tr>
<tr>
<td>8.6</td>
<td>Outboard brake load hold time.</td>
<td>5 min</td>
<td>5 Minutes Minimum</td>
<td>JG</td>
<td>2/1.55</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>8.7</td>
<td>Visual examination of the outboard brake for match mark displacement.</td>
<td>No visual displacement</td>
<td></td>
<td>JG</td>
<td>2/1.55</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.7</td>
<td>Load cell indicated load.</td>
<td>62,500 lbs. (±1,000 lbs.)</td>
<td>62,500 lbs. (±1,000 lbs.)</td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.8</td>
<td>Inboard brake load hold time.</td>
<td>5 min</td>
<td>5 minutes maximum</td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.10</td>
<td>Visual examination of the inboard brake for match mark displacement.</td>
<td>No visual displacement</td>
<td></td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.10</td>
<td>Load cell indicated load.</td>
<td>62,100 lbs. (±1,000 lbs.)</td>
<td>62,500 lbs. (±1,000 lbs.)</td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.11</td>
<td>Pressurizer missile shield indicated load.</td>
<td>Less than 65,000 lbs.</td>
<td></td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>8.11</td>
<td>Inching speed motor monitored running current.</td>
<td>Less than 1.65 amps 1.61 amps</td>
<td></td>
<td>JG</td>
<td>2/1.57</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>
## 9.0 DATA REQUIRED

<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.11</td>
<td>Check auxiliary hoist brakes (inboard and outboard) proper operation under load and slippage.</td>
<td>SAT</td>
<td>SAT.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1640</td>
</tr>
<tr>
<td>8.13</td>
<td>Observe load hook for swivel Capabilities.</td>
<td>Swivel freely</td>
<td>9V</td>
<td>4/2/85</td>
<td>1647</td>
<td></td>
</tr>
<tr>
<td>8.14</td>
<td>Observe auxiliary hoist inching speed motor excessive vibration, noise, or other abnormal conditions.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1650</td>
</tr>
<tr>
<td>8.14</td>
<td>In the inching speed mode, check clutch engagement for slippage under load.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1650</td>
</tr>
<tr>
<td>8.14</td>
<td>Observe the auxiliary hoist load block for excessive noise, twisting, or rocking.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1650</td>
</tr>
<tr>
<td>8.16</td>
<td>High speed motor monitored running current.</td>
<td>60.5amps</td>
<td>Less than 65-amps.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1650</td>
</tr>
<tr>
<td>8.16</td>
<td>Initial load reference height.</td>
<td>29 1/2''</td>
<td>Less than 3''.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1700</td>
</tr>
<tr>
<td>8.16</td>
<td>Test load hold time</td>
<td>10min</td>
<td>10 min.</td>
<td>9V</td>
<td>4/2/85</td>
<td>1712</td>
</tr>
</tbody>
</table>
9.0 DATA REQUIRED

<table>
<thead>
<tr>
<th>STEP NO.</th>
<th>DESCRIPTION OF DATA REQUIRED</th>
<th>DATA</th>
<th>ACCEPTANCE CRITERIA</th>
<th>INITIALS ORIG</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.16</td>
<td>Final load reference height.</td>
<td>2 9 1/2&quot;</td>
<td>Less than 1/4&quot;</td>
<td>OV</td>
<td>4/2/85</td>
<td>1713</td>
</tr>
<tr>
<td>8.16</td>
<td>Observe eddy current brake for vibration and noise under load.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>OV</td>
<td>4/2/85</td>
<td>1705</td>
</tr>
<tr>
<td>8.16</td>
<td>Observe drive shaft support bearing for vibration and noise under load.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>OV</td>
<td>4/2/85</td>
<td>1706</td>
</tr>
<tr>
<td>8.16</td>
<td>Observe drive shafts and flexible couplings for noise, vibration, and wobble under load.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>OV</td>
<td>4/2/85</td>
<td>1707</td>
</tr>
<tr>
<td>8.16</td>
<td>Observe drum support bearing for vibration and noise under load.</td>
<td>SAT.</td>
<td>SAT.</td>
<td>OV</td>
<td>4/2/85</td>
<td>1707</td>
</tr>
</tbody>
</table>
Mr. D. R. Buchanan  
Manager - Site Engineering  
GPU Nuclear Corporation  
P.O. Box 480  
Middletown, Pennsylvania 17075  

Subject: Three Mile Island, Unit #2  
Reactor Building Polar Crane S/N 10044  
Auxiliary Hoist Load Test  
Whiting Work Requisition #75792-93  

Dear Mr. Buchanan:

The following confirms my September 11 phone conversation with Mr. Mark Smith:

Based upon the results of the Whiting engineering report dated August 23, 1984, Whiting Corporation authorizes a one-time 32.6-ton load test for the 25-ton auxiliary hoist. Page 8 of the Whiting report indicated the load cell would exceed its rated capacity by 16% during load test. Because of the overload, the load cell diaphragm might require replacement after the test but only if future use of the weigh system is expected.

Page 9 of the Whiting report indicated the load cell support weld is overstressed by 18% per CMNA criteria. However, the stress is still approximately 60% of AISC allowable and approximately 88% of AWS D1.1 for normal bridge allowsables.

Finally, page 14 of the report indicates the motor horsepower is exceeded by 22%. This is typical when load tests are performed. Whiting does not foresee a problem in this regard to the fact that this is a one-time load for short duration. There need only be concern if this load would be imposed on a duty cycle basis.

I am hopeful this information is useful. If you have additional questions, please call.

Sincerely,

Robert V. Norby,  
Application Engineer  
Crane Department
REQUIRED PLANT CONFIGURATION

OPERATIONAL TEST

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DW-V-28</td>
<td></td>
<td>3/28/89</td>
<td>0100</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal position.

Task Supervised: [Signature]

Date: 3-29-89

Time: 11:06

Doc.: 842119K
REQUIRED PLANT CONFIGURATION

OPERATIONAL TEST

Control Room Shift Foreman indicate valves closed by initializing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dv-Y-28</td>
<td></td>
<td>3/14/85</td>
<td>0400</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature] DATE 3.29.85 TIME 1505

Doc.: 842119K
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Prior to beginning the lift of the pressurizer missile shield per Section 4.0 of this UWI, do the following:

1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.
2. Verify that the non-operating train of the Reactor Building purge is shut-down per Operating Procedure 2104-4.91, Section 3.3.1.
3. Close at least one door of each personnel airlock.
4. Verify containment integrity is set per the latest signed off copy of procedure 4301-H8 for the following penetrations:

   R-535*  R-548*  R-557  R-558
   R-559  R-563  R-567  R-577
   R-578  R-579  R-580  R-581
   R-582  R-584  R-585  R-587
   R-588  R-616*  R-619  R-620*
   R-561  R-622*  R-623  R-621

   R-617 Add valves GR-V-6B, GR-V-25B
   R-618 Add valves GR-V-6A, GR-V-25A

*Allow the following valves for the listed penetration remain as noted for the following reasons:
R-535 - DW-V139 located in Reactor Building manual isolation valve, on original locked valve list as closed - last known position was locked closed. Valve is currently verified using locked valve list and not physically.

R-538 - FS-V639, 640 normally close outside containment valve only while personnel are in building. FS-V640 requires excessive ManRem exposure to operate.

R-616 - SGC-FV-3 and SGC-FV-4 instrument valves currently open for "B" OTSG remote/post accident steam generator, pressure gauge (0 to 60 PSIG) installed downstream. T.S. 3.3.3.5 and 3.3.3.6.

R-620 - MS-V-225 open for "B" OTSG N2 compensation for level standpipe. 0-5 PSIG guage installed downstream.

R-622 - MS-V-226 open for "A" OTSG N2 compensation for level standpipe. 0-5 PSIG pressure gauge installed downstream. Also, 0-60 PSIG guage installed for remote/post accident pressure T.S. 3.3.3.5 and 3.3.3.6.

NOTE: For penetrations R-617 and 618 valves GR-V-7A(B) and GR-V-30A(B) are not to be closed. These must be left open for technical specification compliance to provide level monitoring for the OTSG's.
5. At the end of an entry day, when all loads are secured, systems may be returned to pre-isolation condition until the next work day. The Task Supervisor shall notify the Control Room Shift Supervisor that the Reactor Building systems may be returned to the pre-load test configuration.
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Control Room Shift Foreman indicate valves closed by initializing, dating and stating time of closure below.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR-V-5A</td>
<td></td>
<td>3/28/85</td>
<td>0540</td>
</tr>
<tr>
<td>RR-V-5B</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-5C</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-6A</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-6B</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-6C</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-6D</td>
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<td>3/28/85</td>
<td></td>
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<tr>
<td>RR-V-6E</td>
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<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-7A</td>
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<td>RR-V-7B</td>
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<td>RR-V-7C</td>
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<td>3/28/85</td>
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<td>RR-V-7D</td>
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<td>3/28/85</td>
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<tr>
<td>RR-V-TE</td>
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<td>3/28/85</td>
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<tr>
<td>RR-V-25A</td>
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<td>3/28/85</td>
<td></td>
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<tr>
<td>RR-V-25B</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-25C</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-25D</td>
<td></td>
<td>3/28/85</td>
<td></td>
</tr>
<tr>
<td>RR-V-25E</td>
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<td>3/28/85</td>
<td></td>
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<tr>
<td>GRV-7A</td>
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<td>3/28/85</td>
<td>0615</td>
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<tr>
<td>GRV-1B</td>
<td></td>
<td>3/28/85</td>
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<tr>
<td>MSV-7B</td>
<td></td>
<td>3/28/85</td>
<td>0540</td>
</tr>
<tr>
<td>GRV-9</td>
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<td>3/28/85</td>
<td>0615</td>
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<td>TDW-V001</td>
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</tr>
<tr>
<td>TDW-V002</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature] DATE 3-28-85 TIME 1500

Doc.: 842119K Page 4 of 4
Prior to beginning the lift of the pressurizer missile shield per Section 4.0 of this UWI, do the following:

1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.

2. Verify that the non-operating train of the Reactor Building purge is shut-down per Operating Procedure 2104-4.91, Section 3.3.1.

3. Close at least one door of each personnel airlock.

4. Verify containment integrity is set per the latest signed off copy of procedure 4301-M8 for the following penetrations:

   - R-535*  R-548*  R-557  R-558
   - R-559  R-563  R-567  R-577
   - R-578  R-579  R-580  R-581
   - R-582  R-584  R-585  R-587
   - R-588  R-616*  R-619  R-620*
   - R-561  R-622*  R-623  R-621

   R-617 Add valves GR-V-68, GR-V-258
   R-618 Add valves GR-V-6A, GR-V-25A

*Allow the following valves for the listed penetration remain as noted for the following reasons:

Doc.: 842119K

[Signature]

[Date: 3-28-84]
R-535 - DW-V139 located in Reactor Building manual isolation valve, on original locked valve list as closed - last known position was locked closed. Valve is currently verified using locked valve list and not physically.

R-548 - FS-V639, 640 normally close outside containment valve only while personnel are in building. FS-V640 requires excessive ManRem exposure to operate.

R-616 - SGC-FV-3 and SGC-FV-4 instrument valves currently open for "B" OTSG remote/post accident steam generator pressure gauge (0 to 60 PSIG) installed downstream. T.S. 3.3.3.5 and 3.3.3.6.

R-620 - MS-V-225 open for "B" OTSG N2 compensation for level standpipe. 0-5 PSIG gauge installed downstream.

R-622 - MS-V-226 open for "A" OTSG N2 compensation for level standpipe. 0-5 PSIG pressure gauge installed downstream. Also, 0-60 PSIG gauge installed for remote/post accident pressure T.S. 3.3.3.5 and 3.3.3.6.

NOTE: For penetrations R-617 and 618 valves GR-V-7A(B) and GR-V-30A(B) are not to be closed. These must be left open for technical specification compliance to provide level monitoring for the OTSG's.
At the end of an entry day, when all loads are secured, systems may be returned to pre-isolation condition until the next work day. The Task Supervisor shall notify the Control Room Shift Supervisor that the Reactor Building systems may be returned to the pre-load test configuration.
Control Room Shift Foreman indicate valves closed by initializing, dating and stating time of closure below.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR-V-5A</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-5B</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-5C</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-6C</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-6D</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-6E</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-11A</td>
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<td>3/29/85</td>
<td>0430</td>
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<tr>
<td>RR-V-11B</td>
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<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-11C</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-11D</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>RR-V-11E</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
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<tr>
<td>RR-V-25A</td>
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<td>RR-V-25C</td>
<td></td>
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<tr>
<td>RR-V-25E</td>
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<td>0430</td>
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<tr>
<td>GRV-1A</td>
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<td>3/29/85</td>
<td>0400</td>
</tr>
<tr>
<td>GRV-1B</td>
<td></td>
<td>3/29/85</td>
<td>0400</td>
</tr>
<tr>
<td>MSV-7B</td>
<td></td>
<td>3/29/85</td>
<td>0430</td>
</tr>
<tr>
<td>GRV-9</td>
<td></td>
<td>3/29/85</td>
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<tr>
<td>TDW-002</td>
<td></td>
<td>2/21/85</td>
<td>0530</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASY. SUPV. \( \frac{\text{DATE}}{\text{TIME}} \)  
\( 3.29.85 \)  1505
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Prior to beginning the lift of the pressurizer missile shield per Section 4.0 of this UWI, do the following:

1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.

2. Verify that the non-operating train of the Reactor Building purge is shut-down per Operating Procedure 2104-491, Section 3.3.1.

3. Close at least one door of each personnel airlock.

4. Verify containment integrity is set per the latest signed off copy of procedure 4301-118 for the following penetrations:

   R-535*  R-548*  R-557  R-558
   R-559   R-563   R-567  R-577
   R-578   R-579   R-580  R-581
   R-582   R-584   R-585  R-587
   R-588   R-616*  R-619  R-620*
   R-561   R-622*  R-623  R-621

   R-617 Add valves GR-V-68, GR-V-25B
   R-618 Add valves GR-V-6A, GR-V-25A

*Allow the following valves for the listed penetration remain as noted for the following reasons:
R-535 - DW-V139 located in Reactor Building manual isolation valve, on original locked valve list as closed - last known position was locked closed. Valve is currently verified using locked valve list and not physically.

R-548 - FS-V639, 640 normally close outside containment valve only while personnel are in building. FS-V640 requires excessive ManRem exposure to operate.

R-616 - SGC-FV-3 and SGC-FV-4 instrument valves currently open for "B" OTSG remote/post accident steam generator, pressure gauge (0 to 60 PSIG) installed downstream. T.S. 3.3.3.5 and 3.3.3.6.

R-620 - MS-V-225 open for "B" OTSG N₂ compensation for level standpipe. 0-5 PSIG gauge installed downstream.

R-622 - MS-V-226 open for "A" OTSG N₂ compensation for level standpipe. 0-5 PSIG pressure gauge installed downstream. Also, 0-60 PSIG gauge installed for remote/post accident pressure T.S. 3.3.3.5 and 3.3.3.6.

NOTE: For penetrations R-617 and 618 valves GR-V-7A(B) and GR-V-30A(B) are not to be closed. These must be left open for technical specification compliance to provide level monitoring for the OTSG's.
At the end of an entry day, when all loads are secured, systems may be returned to pre-isolation condition until the next work day. The Task Supervisor shall notify the Control Room Shift Supervisor that the Reactor Building systems may be returned to the pre-load test configuration.
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR-V-5A</td>
<td></td>
<td>4-1-85</td>
<td>0540</td>
</tr>
<tr>
<td>RR-V-5B</td>
<td></td>
<td>4-1-85</td>
<td>0540</td>
</tr>
<tr>
<td>RR-V-5C</td>
<td></td>
<td>4-1-85</td>
<td>0540</td>
</tr>
<tr>
<td>RR-V-6C</td>
<td></td>
<td>4-1-85</td>
<td>0540</td>
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<tr>
<td>RR-V-6D</td>
<td></td>
<td>4-1-85</td>
<td>0540</td>
</tr>
<tr>
<td>RR-V-6E</td>
<td></td>
<td>4-1-85</td>
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<tr>
<td>RR-V-11A</td>
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<tr>
<td>RR-V-11B</td>
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<td>0540</td>
</tr>
<tr>
<td>RR-V-11C</td>
<td></td>
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<td>0540</td>
</tr>
<tr>
<td>RR-V-11D</td>
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<td>0540</td>
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<tr>
<td>RR-V-11E</td>
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Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature] DATE 4-1-85 TIME 14:00
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Prior to beginning the lift of the pressurizer missile shield per Section 4.0 of this UWI, do the following:

1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.

2. Verify that the non-operating train of the Reactor Building purge is shut-down per Operating Procedure 2104-4.91, Section 3.3.1.

3. Close at least one door of each personnel airlock.

4. Verify containment integrity is set per the latest signed off copy of procedure 4301-18 for the following penetrations:

- R-535
- R-536
- R-548
- R-557
- R-558
- R-559
- R-563
- R-567
- R-577
- R-578
- R-579
- R-580
- R-581
- R-582
- R-584
- R-585
- R-587
- R-588
- R-616
- R-619
- R-620
- R-561
- R-622
- R-623
- R-621
- R-617 Add valves GR-V-68, GR-V-25B
- R-618 Add valves GR-V-6A, GR-V-25A

*Allow the following valves for the listed penetration remain as noted for the following reasons:
R-535 - DW-V139 located in Reactor Building manual isolation valve, on original locked valve list as closed - last known position was locked closed. Valve is currently verified using locked valve list and not physically.

R-548 - FS-V639, 640 normally close outside containment valve only while personnel are in building. FS-V640 requires excessive ManRem exposure to operate.

R-616 - SGC-FV-3 and SGC-FV-4 instrument valves currently open for "B" OTSG remote/post accident steam generator, pressure guage (0 to 60 PSIG) installed downstream. T.S. 3.3.3.5 and 3.3.3.6.

R-620 - MS-V-225 open for "B" OTSG N₂ compensation for level standpipe. 0-5 PSIG guage installed downstream.

R-622 - MS-V-226 open for "A" OTSG N₂ compensation for level standpipe. 0-5 PSIG pressure gauge installed downstream. Also, 0-60 PSIG guage installed for remote/post accident pressure T.S. 3.3.3.5 and 3.3.3.6.

NOTE: For penetrations R-617 and 618 valves GR-V-7A(B) and GR-V-30A(B) are not to be closed. These must be left open for technical specification compliance to provide level monitoring for the OTSG's.
At the end of an entry day, when all loads are secured, systems may be returned to pre-isolation condition until the next work day. The Task Supervisor shall notify the Control Room Shift Supervisor that the Reactor Building systems may be returned to the pre-load test configuration.
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below.

<table>
<thead>
<tr>
<th>VALVE</th>
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<td>TDW-YU02</td>
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</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV.       DATE 4-2-85       TIME 2100
POLAR CRANE MAIN HOOK
(SEE WHITING CORP. DWG. MS-61154)

INTERNAL HANDLING EXTENSION
(ROTATED FOR CLARITY)

MISSILE SHIELD RIGGING
ATTACHMENT PLATE

MECHANICAL EYE SPlice AT
EACH END OF 1 3/4" DIA. WIRE
ROPE (TYP. 4)

1 3/4" DIA. SCREW PIN ANCHOR
SHACKLE, CROSBY NO. G-209
(25 TONS SWL), OR EQUAL
(TYP. 4)

PRESSURIZER MISSILE SHIELD

PRESSURIZER MISSILE SHIELD RIGGING
USING POLAR CRANE MAIN HOOK
MISSILE SHIELD RIGGING

25 TON AUX. HOOK

50 TON LOAD CELL (W.C. DILLON & CO., INC.)
(ROTATED 90° FOR CLARITY)

CROSBY NO. G-2160 "WIDE BODY"
SHACKLES (75 TONS SWL, 2 3/4" DIA.
PIN), OR EQUAL

MECHANICAL EYE SPlice AT
EACH END OF 1 1/8" DIA. WIRE
ROPE (MIN. EFFICIENCY
OF 92.5 %)

1 1/8" DIA SCREW PIN ANCHOR
SHACKLE, CROSBY NO. G-209
(25 TONS SWL), OR EQUAL

WIRE ROPES 1 3/4" DIA 6X37 CLASS
IWRC, RRL. (MIN. BREAKING
STRENGTH OF 153 TONS)
TYPICAL 4

EXISTING LUGS FOR
PRESSURIZER MISSILE
SHIELD

TOP OF EXISTING
MISSILE SHIELD
NOTES:

1. C Ribbing shown shall be 4" x 4" x 5.0" structural timber minimum.

2. The Cribbing arrangement shown is restricted to EL 347' in the area of the Polar Crane main hoist load test.

**Cribbing Diagram**

- All spacings are to be as shown ± 2".
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
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<tbody>
<tr>
<td>NS-V210</td>
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<td>3/28/85</td>
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<tr>
<td>MU-V377</td>
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<td>MU-V439</td>
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Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature]      DATE 3-29-85      TIME 0140
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initializing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

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<thead>
<tr>
<th>VALVE</th>
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Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. ___________ DATE 3-23-85 TIME 1600
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initializing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
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<tbody>
<tr>
<td>NS-V210</td>
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</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV.   DATE 3-29-85   TIME 15:05
# REQUIRED PLANT CONFIGURATION

## PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT</th>
<th>DATE</th>
<th>TIME</th>
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<tbody>
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Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

**TASK SUPV.** [Signature]  **DATE** 3.29.85  **TIME** 1505
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS-V210</td>
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<td>MU-V377</td>
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<td>SGC-V2</td>
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Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature] DATE 4-1-85 TIME 1400
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>FW-V17A</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V17B</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V19A</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V19B</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V35A</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V35B</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V68A</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FW-V68B</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>DW-V28</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
<tr>
<td>FS-V639</td>
<td></td>
<td>4/1/85</td>
<td>0545</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TTASK SUPV. [Signature] DATE 4/1/85 TIME 1400
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS-V210</td>
<td>MU-V377</td>
<td>4-2-85</td>
<td>1250</td>
</tr>
<tr>
<td>SGC-V2</td>
<td>EF-V12B</td>
<td>4-2-85</td>
<td>1145</td>
</tr>
<tr>
<td>MU-V378</td>
<td>MU-V439</td>
<td>4-2-85</td>
<td>1155</td>
</tr>
<tr>
<td>EF-V33B</td>
<td>IC-V207</td>
<td>4-2-85</td>
<td>1155</td>
</tr>
<tr>
<td>EF-V12A</td>
<td>EF-V33A</td>
<td>4-2-85</td>
<td>1145</td>
</tr>
<tr>
<td>CA-V9</td>
<td>SV-V55</td>
<td>4-2-85</td>
<td>1145</td>
</tr>
<tr>
<td>SV-V20</td>
<td>NS-V72</td>
<td>4-2-85</td>
<td>1140</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. 
DATE 4-2-85 TIME 2100
REQUIRED PLANT CONFIGURATION

PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

Control Room Shift Foreman indicate valves closed by initialing, dating and stating time of closure below. Operation of containment isolation valves per appropriate NRC approved operation procedure.

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SHIFT SUPV.</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS-V81</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>IC-V3</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>IC-V4</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>IC-V5</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V17A</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V17B</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V19A</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V19B</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V35A</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V35B</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V68A</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FW-V68B</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>DW-V28</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
<tr>
<td>FS-V639</td>
<td></td>
<td>4-2-85</td>
<td>1140</td>
</tr>
</tbody>
</table>

Upon completion of work notify Control Room (x-8066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. [Signature] DATE 4-2-85 TIME 2100
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Ratio Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tool/Material Riggine Box, Ref: UHI 4370-3100-84-C575</td>
<td>Max. Gross WT: 2300 lbs</td>
</tr>
<tr>
<td></td>
<td>For Fabrication and load test.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5/16&quot; Wire Rope. Sling, EEP, ZWR, w/mich spliced thimble eye.</td>
<td>3.9 Tons</td>
</tr>
<tr>
<td>3</td>
<td>Weldless Alloy Master Link, 1/&quot;d stock 4/&quot;x=20&quot;</td>
<td>16.15 Tons</td>
</tr>
<tr>
<td>4</td>
<td>1&quot; Anchor Shackles</td>
<td>P.S. Tons</td>
</tr>
<tr>
<td>5</td>
<td>3/8&quot; x 16&quot;, ZWR, w/weldless master link at the tip</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and a hook with a safety catch on the bottom (20' long)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*The whole slings/rope, shackles, hooks, and eyes were tested to 15,000 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>as a safe working load of 6.0 Tons.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3/4&quot; White Coated Sling, EEP, ZWR, w/mich spliced eye.</td>
<td>5.0 Tons</td>
</tr>
<tr>
<td></td>
<td>w/one #6, one #13 = 9.6&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**Caution:** No more than 12,000 lbs may be placed in this rigging box. 

**Note:**
- UHI 4370-3100-84-C575
- Attachment 11
- Page 1 of 2
**Skip Pan**

**Rigging Sketch**

---

**Caution:** No more than 300 lbs may be placed in the rigging box.

- **17 Ton 1½" Anchor Shackle**
- **Wireless Alloy Master Link**
  - 1½" x 10½" ID
  - 19,957 lbs Safe Working Load
- **5/8" Wire Rope**
  - 6x19 TWRC
  - IPS Safe Working Load
  - Single Leg: 5.4 tons (Typ.)
  - Each Leg: 5'0" Long
- **8½ Ton 1½" Shackle (Typ.)**

---

**Note:** Two 2-Rope Slings are used to rig for which forms a 4-Point Pick.

---

**Dimensions:**
- **5'0"**

---

**Testing:** Do not exceed load with S.W.L.

---

**See Unit 4370-3100-85-C091 for fatigue load test.**

---

**Skip Pan**
- **Max Net Load:** 3300 lbs
- **Box Weight:** 1102 lbs
- **Total Gross WT:** 4402 lbs
SAFETY STANDARDS FOR CRANES, DERRICKS, HOISTS, HOOKS, JACKS, AND SLINGS

SLINGS

ANSI B30.9 - 1971

SECRETARIAT
NAVAL FACILITIES ENGINEERING COMMAND,
U.S. DEPARTMENT OF THE NAVY
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

PUBLISHED BY
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
United Engineering Center 345 East 47th Street New York, N.Y. 10017
Section 9.2.3 Proof Load

9.2.3.1 Slings of all grades terminated by mechanical splices, sockets and pressed or swaged terminals shall be proof loaded by the sling manufacturer when specified by purchaser.

a. The proof load for single leg slings and endless slings shall be two (2) times the vertical rated capacity.

b. The proof load for multiple leg bights of slings shall be applied to the individual legs and shall be two (2) times the vertical rated capacity of a single leg sling of the same size, grade, and construction of rope.

Section 9.2.4 Effects of Temperature

9.2.4.1 Fiber core wire rope slings of all grades shall not be exposed to temperatures in excess of 200°F.

9.2.4.2 When wire rope slings of any grade are to be used at temperatures above 400°F or below minus 60°F, the sling manufacturer should be consulted.

Section 9.2.5 Minimum Sling Lengths

9.2.5.1 6 x 19, 6 x 37 and cable laid slings shall have a minimum clear length of rope ten (10) times the rope diameter between splices, sleeves or end fittings.

9.2.5.2 Braided slings shall have a minimum clear length of rope forty (40) times the component rope diameter between the loops or end fittings.

9.2.5.3 Grommets and endless slings shall have a minimum circumferential length of ninety-six (96) times the body diameter of the grommet or endless sling.

Section 9.2.6 End Attachments

9.2.6.1 All components welded prior to assembly in the sling shall be proof loaded.

9.2.6.2 Welding of handles or any other accessories to end attachments shall be performed prior to the assembly of the sling.

Section 9.2.7 Storage

9.2.7.1 Wire rope slings of all grades should be stored in an area where they will not be damaged by:

- moisture
- extreme heat
- corrosion
- being run over
- being kinked

Section 9.2.8 Sling Inspection & Replacement

9.2.8.1 Inspection

All slings shall be visually inspected each day they are used. A periodic inspection should also be performed on a regular basis with frequency of inspection based on:

- Frequency of sling use
- Severity of service conditions
- Nature of lifts being made
- Experience gained on the service life of slings used in similar circumstances.

Periodic inspections should be performed by an appointed or authorized person. Any deterioration which could result in an appreciable loss of original strength shall be carefully noted and determination made whether further use of the sling would constitute a safety hazard.

9.2.8.2 Replacement

a. No precise rules can be given for determination of the exact time for replacement of a sling since many variable factors are involved. Safety in this respect depends largely upon the use of good judgment by an appointed or authorized person in evaluating remaining strength in a used sling after allowance for deterioration disclosed by inspection. Safety of sling operation depends upon this remaining strength.

b. Conditions such as the following should be sufficient reason for questioning sling safety and for consideration of replacement:

1. Six randomly distributed broken wires in one rope lay, or three broken wires in one strand in one rope lay.
2. Wear or scraping of one-third the original diameter of outside individual wires.

3. Kinking, crushing, bird caging or any other damage resulting in distortion of the rope structure.

4. Evidence of heat damage.

5. End attachments that are cracked, deformed, or worn.

6. Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

7. Corrosion of the rope or end attachments.

Section 9.2.9 Safe Operating Practices

9.2.9.1 Personnel using wire rope slings shall be instructed in and conform to the following practices:

a. Determine weight of load
b. Select a sling of suitable rated capacity
c. Use the proper hitch
d. Guide loads with a tag line when practical
e. When using multiple leg slings select the longest sling possible so as to reduce the tension in the sling legs

f. Examine the sling for damaged or worn areas
g. Attach the sling securely to the load
h. Pad or protect any sharp corners the sling is in contact with
i. Center the load in the bowl of the hook to prevent hook point loading
j. Avoid any rinks, loops, or twist in the legs
k. Keep hands and fingers from between the sling and the load
l. Stand clear of the attached load
m. Start lift slowly to avoid shock loading the sling
n. Do not pull a sling from under a load when the load is resting on the sling. Block the load up to remove the sling
o. Do not shorten a sling by knotting, by wire rope clips, or by any other means
p. Do not inspect a sling by passing bare hands over the body. Broken wires, if present, may puncture the hands
q. Keep the sling well lubricated in order to prevent corrosion.
**JOB TICKET FORM (WORK REQUEST) - THREE MILE ISLAND**

**UNIT 2** Attachment 13

<table>
<thead>
<tr>
<th>COMPONENT DESIGNATION</th>
<th>LOCATION/UNIT</th>
<th>JOB TYPE</th>
<th>JOB TICKET NUMBER</th>
<th>REQUEST DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>036002C CL</td>
<td>111-2</td>
<td>22-23</td>
<td>12-14-84</td>
</tr>
</tbody>
</table>

**P.S.C.H:**

**O.R.**

**L.I.H.**

**F.S.I.**

**For machinery history.**

**ORIGINATOR'S EMP. NO.:**

04370

**SUPERVISOR'S EMP. NO.:**

04370

**ORIGINATOR'S SIGNATURE:**

12/14/84

**SUPERVISOR'S SIGNATURE:**

12/15/84

**WORK ORDER NUMBER:**

0360

**ACCOUNT NUMBER:**

0360

**PLANT CONDITION:**

** General Comments:**

Perform a load test of the polar crane auxiliary hoist and set the upper and lower limit switches at elevation 425-6 and 305 respectively. UWI 4370-3100-84-C

**FIELD WORK COMPLETION DATE:**

20-04-02

**TOTAL ACTUAL MANHOURS:**

20-020

**PURCHASE ORDER NUMBER:**

4370-3100-64-C575

**RESOLUTION DESCRIPTION:**

07 Completed Task Per UWI 4370-3100-64-C575
# EXHIBIT 1

## TRAINING REQUIREMENTS SUMMARY

*(See Reverse Side for Instructions)*

**Attachment 14**

**Page 1 of 1**

### PART I.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UWI Number</td>
</tr>
<tr>
<td></td>
<td>Revision</td>
</tr>
<tr>
<td>2A</td>
<td></td>
</tr>
<tr>
<td>2B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Special Equipment Training:</td>
</tr>
<tr>
<td>4</td>
<td>By:</td>
</tr>
<tr>
<td></td>
<td>Date:</td>
</tr>
<tr>
<td>5</td>
<td>Training Verified Complete</td>
</tr>
</tbody>
</table>

**Entry Supervisor or Designee**

**Date:** 3-28-85

### PART II.

**INDUSTRIAL SAFETY EVALUATION**

The requirements listed below shall be adhered to by all personnel performing the task listed on this unit work instruction. These requirements can only be changed by a member of the Guncan Safety and Health Department.

1. **Personnel exposed to a fall at any time shall be secured via fall protection.**
2. **Personnel shall stand clear of overhead loads.**
3. **Ensure rigging is secure prior to lift, ensure personnel are clear prior to moving the load.**
4. **Wear leather gloves for hand protection.**
5. **Ensure personnel on crane are secured during movement of the crane and all hands, feet, etc. are clear of rotating parts.**
6. **Ensure compliance with 1000 AD 04110003.**
### Equipment List

<table>
<thead>
<tr>
<th>Material Deposition</th>
<th>QTY.</th>
<th>Comb Code</th>
<th>Staging Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ton load cell</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammeter - 0 to 999 amps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missile Shield</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigging Plate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post Entry Disposition</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In-CTMT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out-CTMT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Material Staged

9. Material in Ante Room

10. Review Complete: Staging Coordinator
    Materials Coordinator
**BRIEFING CHECKLIST**

PRIOR TO STARTING A TEST, THE TEST ENGINEER SHALL BE ASSURED THAT ALL ITEMS ON THIS CHECKLIST HAVE BEEN CONSIDERED AND THAT A PROPER BRIEFING HAS BEEN CONDUCTED.

**TEST PROCEDURE TITLE:** POLAR CREEK ANNULAR TEST 11.0

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Applicable TCs are incorporated in the test procedure.</td>
<td>Init. - Date</td>
</tr>
<tr>
<td>2.</td>
<td>All key personnel at briefing have indicated that they have read and understand the test procedure.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>3.</td>
<td>All special instructions have been discussed.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>4.</td>
<td>All required test preparations have been made.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>5.</td>
<td>Adequate communications are provided.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>6.</td>
<td>Necessary tools and instruments are available.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>7.</td>
<td>All required instruments are in service. Check to assure calibration is valid.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>8.</td>
<td>All applicable alarms are in service.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>9.</td>
<td>Water quality/chemistry is satisfactory.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>10.</td>
<td>All equipment (instruments, switches, valves, etc) have been tagged out as required.</td>
<td>3/21/85</td>
</tr>
<tr>
<td>11.</td>
<td>Any other tests that are running concurrently have been evaluated for impact on this test.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>All key personnel have been instructed what to do in case of a casualty.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Special safety equipment is available.</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Check any test rigs installed for this test procedure to assure that calibration is valid.</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>What steps will be taken to remove any test rigs installed in Item 14.</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Is current valve line-up status of systems satisfactory for conduct of this test?</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>What steps will be taken to return systems to normal line-up following completion of tests?</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Enter results of briefings in Test Engineer's Log.</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Appropriate code inspectors notified?</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>QC Department notified to witness any designated testing per test procedure.</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Does this test require a radiological work permit (RWP) be initiated?</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>If potential or actual radiation exposure is a consideration in performing this test, have personnel been instructed in means available to minimize radiation exposure?</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Have methods to minimize generation of solid, liquid, and gaseous radioactive wastes been discussed?</td>
<td></td>
</tr>
</tbody>
</table>

**List Personnel in Attendance:** See Attached

Signature: [Signature]
Date: 3/21/85
Test Procedure Title: Polar Crane Aux. Arm Tests, No. 4370-3100-84-C575

Title and Name

Function/Location

See Attached Schedule.

Test Engineer's Signature

Date 3/27/85

4000-ADM-3055.02-2 (2/84)
<table>
<thead>
<tr>
<th>Week Number</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test Engineer</td>
<td>J. Smith</td>
<td>K. Jones</td>
<td>C. Adams</td>
<td>B. White</td>
<td>A. Brown</td>
<td>N. Green</td>
<td>T. Brown</td>
<td>D. Black</td>
<td>E. Red</td>
<td>RWP Area</td>
</tr>
</tbody>
</table>
### ALARA REVIEW COVER SHEET

**Title/Activity Description:** Puller Crane Auxiliary Hoist Testing

**Control Number & REV:** 4570 - 510C - E44575 - C

**Date:** 5/10/75

### REVIEW REQUEST DATA

<table>
<thead>
<tr>
<th>Requesting Department</th>
<th>ARN Review Revisions</th>
<th>Exposure Management</th>
</tr>
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<tbody>
<tr>
<td>Requestor's Name</td>
<td>REV DATE RAD CON SIGNATURE</td>
<td>ETN</td>
</tr>
<tr>
<td>Home Base Code</td>
<td></td>
<td>D45CCCG</td>
</tr>
<tr>
<td>Telephone Number</td>
<td></td>
<td>ESTIMATED EXPOSURE</td>
</tr>
<tr>
<td>Review Need Date</td>
<td></td>
<td>5500 (mrem)</td>
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</tbody>
</table>

### RAD CON RECEIVING DATA

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Review Basis</th>
<th>RAD CON Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/15/85</td>
<td>4570</td>
<td>Test and - 45</td>
<td>M.J. Hoerle</td>
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</table>

Max Exposed Individual: 225 (mrem)

### RVP TIME STUDY

**Date:** 5/10/75

**Description of RVP Areas:**

<table>
<thead>
<tr>
<th>NO</th>
<th>Job Classification</th>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>Industrial</td>
<td>4 hrs</td>
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<tr>
<td>B</td>
<td>30</td>
<td>Electrician</td>
<td>12 hrs</td>
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<tr>
<td>C</td>
<td></td>
<td>Carpenter</td>
<td>7. hrs</td>
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<tr>
<td>D</td>
<td>31</td>
<td>Team Electrician</td>
<td>8 hrs</td>
<td>12</td>
<td></td>
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<tr>
<td>E</td>
<td></td>
<td>GC Inspector</td>
<td>4 hrs</td>
<td></td>
<td>12</td>
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<td>H</td>
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</table>

Max Time Per Individual Entry: 2 hrs, 2 hrs, 12 hrs.
I. Supplemental RWP Requirements (Explain on Attached Sheets):

Planning
- [X] Pre-Job Briefing
- [ ] Mock-up Training
- [ ] Post-Job Review
- [ ] Hold Points

Exposure Control
- [ ] Shielding
- [ ] Flush/Remove Source
- [ ] Move Component/Task
- [ ] Remote Handling

Contamination Control
- [ ] Decontamination
- [ ] Containment Device
- [ ] Aux. Ventilation
- [ ] Access Control

II. Special RWP Requirement/Instructions (other than normal RWP requirements)

Personnel Protection/Monitoring
- Special Anti-C's RWP
- Special Respiratory Protection to be determined by RWP Reeves/Adviser
- Special Dosimetry RWP for all workers
- Special Radiation Monitor(s)

III. Dose Estimates

2. All Others: 150 mrem/hour, DSP 33 mrem.

Review Performed By: [Signature] 1-7-74
(Rad. Eng.) Date
Requestor: J. Q. Hicks  4370  Date 11-20-84  Est. 89.65 Date Required 11-30-84

Reparer: J. Q. Hicks  Equipment/System: Polar Crane

Subject: Inspect Wire Rope Before & After Load Test  TN/SOP Cancellation Date

Priority: N/A

Description of Work:

AUXILIARY HOIST

- Inspect Polar Crane Wire Rope Before and After Load Test. ANSI B30.2-1976, Paragraphs 2-2.4.1 and 2-2.4.2 shall be used as Acceptance Criteria (Reference Attachment 1).

- Remove Handrails from around the 347' Open Hatch as Required.

- Position Polar Crane as Required (Attachment 3).

- Establish Life Lines and Prepare Spider for Polar Crane/Elevation 347' Access (Attachment 4).

- Perform Wire Rope Inspection as the Auxiliary Hoist Lift Load Block is Lowered to Elevation 305'.

Lead Engr
Supt.
Safety

Time 0945 Date 12-26-85

APPROVAL TO COMMENCE WORK: Responsible Supervisor

CONCURRENCE:
Cog Engineer: All Sessions  Date 11-17-84 SWEN RP

Supt: M.D. Smith  Date 12-11-84 NRC UWIP

SRG NRP  Date

QA NRP  Date

Rad Con: J.R. Hunt A  Date 12-12-84

SRO NRP  Date

UWIP COMPLETE:
Individual:  Time 0900 Date 9-10-85

Responsible Supervisor:  Date 4-10-85

P. D. Supervisor:  Date 4-10-85

Cog. Engineer:  Date 4-10-85
STAGE LOAD BLOCK ON ELEVATION 305' IN STAGING SADDLE (ATTACHMENT 5).

SECURE EIGHT-PART LOAD LINE AT ELEVATION 347' TO PREVENT FURTHER ROPE MOVEMENT THROUGH THE LOAD BLOCK (ATTACHMENT 6).

CONTINUE TO PERFORM WIRE ROPE INSPECTION WHILE ALLOWING THE LEADING LOAD LINES TO COIL ON ELEVATION 347' (ATTACHMENT 7). CONTINUE UNREEVING UNTIL ONLY TWO DEAD WRAPS REMAIN ON THE DRUM. INSPECT DRUM FOR NICKS, CONCAVATION, GOUGES OR OBVIOUS DEFECTS.

INSPECT THE WIRE ROPE ATTACHMENT POINT AT THE DRUM.

PERFORM WIRE ROPE CORE INSPECTIONS RANDOMLY ON THE SECTION OF ROPE ACCESSIBLE AT ELEVATION 347' USING A MARLINE SPIKE.

I. WIRE ROPE INSPECTION RESULTS

1. WIRE ROPE CONDITION IS:

   - Initial & Date Below for Pre-load Test & Post-load Test
     Slight  Moderate  Severe
     Jan 2/20/85

SURFACE CORROSION:

   - Non-existent  For Replacement Rope - Jan 2/9/85

ORIGINAL DIAMETER WEAR:

   - Jan 2/20/85

   - Jan 4/9/85 (include actual rope diameter measurements in close out attachment)

HEAT DAMAGE:

   - Acceptable - Jan 2/20/85

   - Acceptable - Jan 4/9/85 (non-existent)
Nuclear

UNIT WORK INSTRUCTION CONTINUATION SHEET

RoPE DiSTORtIoN:
Acceptable
Jan 4/9/85

UNACCEPTABLE

BROKEN WIRES:
Acceptable
Jan 4/9/85

UNACCEPTABLE

CORE CORROSION:
Acceptable
Jan 2/20/85

UNACCEPTABLE

(Not applicable to post-load test)

2. ADDITIONAL COMMENTS: The wire rope was damaged during initial inspection severely enough to require complete replacement of the wire rope. Note that the existing condition of the original wire rope was found to be acceptable for continued use (excluding damaged received during inspection).

II. FIELD ENGINEERING WIRE ROPE CONDITION EVALUATION

INITIAL DATE FOR PRELOAD TEST & POST-LOAD TEST:
Use-AS-15

REPLACE
Jan 2/24/85

Auxiliary Hoist Wire Rope
Jan 4/9/85

Field Engineer's Signature
Date 2-26-85

PRE-LOAD TEST

POST-LOAD TEST

Date 4-9-85
- **Remove wire rope on drum.** Ensure wire rope properly seats on drum. Note: lubrication of the wire rope may be performed at this time if rope is found to be acceptable for use. (Reference UWI 4370-3100-04-C(10)).

- Remove mooring which secured eight-part load line at elevation 347', after slack in leading lines has been reeved.

- Continue reeving wire rope until the load block has been hoisted near the upper limit switch.

- **Dock spider in its normal dock position and stage life lines.**

- **Position polar crane in its normal parked position.**

- **Replace handrail around the 347' open hatch.**

- **Clean work area and remove debris.**
<table>
<thead>
<tr>
<th>Original Wire Rope Diameter Year</th>
<th>Gear Case Side</th>
<th>Support Bearing Side</th>
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<tbody>
<tr>
<td>3/4 Drum Full</td>
<td>0.833&quot;</td>
<td>0.828&quot;</td>
</tr>
<tr>
<td>1/2 Drum Full</td>
<td>0.824&quot;</td>
<td>0.825&quot;</td>
</tr>
<tr>
<td>1/4 Drum Full</td>
<td>0.828&quot;</td>
<td>0.825&quot;</td>
</tr>
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</table>

Measurements Taken By: [Signature] 9/86

Field Engineer
CORRECTION TO UNIT WORK INSTRUCTION

Subject: 4370-3100-84-C663

Date: April 17, 1985

4370-85-6068

3-Mile Island, Unit-2

Trailer 105

Location: File: 3006/1625 NR

From: Manager, Recovery Operations

D. M. Lake

To:

DISTRIBUTION

Attached are several polar crane auxiliary hoist wire rope diameter measurements taken at random along the wire rope length. These measurements were taken by Site Engineering due to an apparent discrepancy with the validity of the measurements reported in Unit Work Instruction 4370-3100-84-C663, closeout attachment 10. This memorandum will be attached to the Unit Work Instruction to document this correction.

If you have any questions or comments, please contact J. Q. Hicks at extension 8865.

JQH/khc

Attachment: As stated above.

cc: Manager, Site Engineering - R. E. Gallagher, w/a
Unit 2 Project QA Engineer - D. L. Hosking, w/a
Site Operations Director - S. Levin, w/a
Procedures/Methods Coordinator - M. J. McMullen, w/a
Project Field Engineer - R. J. Montgomery, w/a
Lead Civil Engineer - R. W. Parsons, w/a
Engineer, Site Engineering - M. D. Smith, w/a

Doc.: 850160a
Caliper Serial No.: QCT 43
Calibration Due Date: 12-10-85
Measurements Taken By: M. D. Smith
Date: 4-16-85

DRUM

EQUALIZER SHEAVES

UPPER SHEAVES

BLOCK

FOR OTHER ARRANGEMENT OF REEVING
20-30 TON TROLLEY SEE DRG. NO. R-13090

WHITING CORPORATION
HARVY, ILLINOIS

TITLE: ROPE REEVING DIAGRAM
FOR A PARTS OF ROPE

DATE: 1-17-33
SCALE: 0.5 IN.
APPROVED BY: G.E.M.
R.H.
R-1369
Work Order No. 4370

Date 3-5-85 Ext. B865 Date Required 3-12-85

Requestor J. Q. Hicks
Preparer J. Q. Hicks
Subject NDE FL/AUXILIARY HOST HOOK

Purpose:

Revised as described below to eliminate removal of the auxiliary host hook from the bottom block due to inaccessible.

Description of Work:

- Revisions Required:

  1. Eliminate (DELETE) Line Items 15, 20, and Attachment 3.
  2. Perform NDE on the hook section shown on Attachment 6.

- All other work described per Revision 0 shall remain unchanged.

APPROVAL TO COMMENCE WORK: Responsible Supervisor

S. W. Ray

Time 9:00 Date 3-21-85

CONCURRENCE:

Cog. Engineer

Date 3/5/85

RTR M.R. Smith

Date 3/16/85

SRG I.R.

Date 3/13/85

QA P. T. Jordan

Date 3/11/85

Rad Con

Date 3/11/85

SRO I.R.

Date 3/11/85

UWI COMPLETE:

Individual

Time 0:800 Date 4-10-85

Responsible Supervisor

Date 4-10-85

P. D. Supervisor

Date 4-10-85

Cog. Engineer

Date 4-10-85
# Work Instruction

**Unit:** Nuclear

**Operation:**
- Maintenance
- QC
- Recovery Ops

**Area/Location:** Reactor II

**Category:** NTS

**Other Requirements:**
- ECA: N/A
- Other: N/A

**Tech Spec Related:**
- Yes: No
- If Yes: Time Clock

**Requestor:** J. Q. Hicks

**Preparer:** J. Q. Hicks

**Subject:** NDE Auxiliary Hoist Hook

**Priority:** N/A

**Purpose:**
To perform a nondestructive examination (NDE) of the polar crane auxiliary hoist hook before and after the auxiliary hoist load test.

**Description of Work:**
- Perform a magnetic particle and visual examination on the auxiliary hoist hook before and after load testing.

The magnetic particle examination shall be performed in accordance with Procedure G110-QAP-7209.01 as applicable utilizing the AC yoke method.

Visual examination acceptance criteria shall be in accordance with ANSI P30.10-1982 as applicable (Reference Attachment 1).

**Date:** 11-16-84

**Ext. Date:** 11-30-84

**Equipment/System:** Polar Crane

**TCN/SOP Cancellation Date:** N/A

---

**Lead Eng.:** 11/17/84

**Supt.:** Safety

**Approval to Commence Work:** Responsible Supervisor

**Time:** 9:00

**Date:** 11/17/84

---

**Concurrence:**

- Cog. Eng.: H. L. LeCoeu
- SRG: R. L. Phillips
- QA: D. F. Turner
- SRO: N/A

**UWI Complete:** Individual: Site Ops. Dir.: 12/14/84

---

**Individual:**

- Responsible Supervisor: 9:00
- P. D. Supervisor: 9:00
- Cog. Engineer: 9:00

**Page:** 1

**Of:** 7

**A00001960**
Pre-load test NDE results

I. Visual examination performed in accordance with ANSI P 30.10 - 1982.

Auxiliary hoist load hook: 3/26/85

Acceptable

Comments:

II. Magnetic particle examination performed in accordance with procedure C-1100 - GAP-7209.01 (AC yoke method). Acceptance criteria: No cracks or linear indications.

Auxiliary hoist load hook: 3/26/85

Acceptable

Comments:

Inspector(s): 3/26/85

DATE

DATE
POST-LOAD TEST NDE RESULTS

I. VISUAL EXAMINATION PERFORMED IN ACCORDANCE WITH ANSI P30.10-1982:

AUXILIARY HOIST LOAD HOOK 4/10/85
ACCEPTABLE

UNACCEPTABLE

COMMENTS: - SEE ATTACHMENT 8 FOR QC PIR

II. MAGNETIC PARTICLE EXAMINATION PERFORMED IN ACCORDANCE WITH PROCEDURE GO10-QAP-7209.01 (AC YOKE METHOD): ACCEPTANCE CRITERIA: NO CRACKS OR LINEAR INDICATIONS.

AUXILIARY HOIST LOAD HOOK 4/10/85
ACCEPTABLE

UNACCEPTABLE

COMMENTS: - SEE ATTACHMENT 8 FOR QC PIR

INSPECTOR(S): - SEE ATTACHMENT 8 4/10/85
QC KL 17/3/85

DATE

QC KL 17/3/85

DATE
## QUALITY CONTROL PLANT INSPECTION REPORT

**Unit No.** 1ME 2  
**Inspector** RANDY KALI  
**PIR No.** WE43/53/85

**Inspection Description** Pre-Load Visual MT  
**Date of Inspection:** 3/2/85

**Method:** Visual: ✗  
**Direct Measurement:**  
**Document Review:**  
**Other:** ✗

**References:**

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<th>Characteristic/ Activity To Be Inspected</th>
<th>Acceptance Criteria</th>
<th>Inspection Results/ Readings</th>
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<td>Oct 709</td>
<td>N/A</td>
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**NCR Issued:** Yes [X] No  
**QAR Issued:** Yes [X] No

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<th>Notes/Comments</th>
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**Comments/Other Information:**

---

**Incorporated By:**  
**Date:** 3/24/95  
**Received and Approved by:**  
**Date:** 3/24/95

**Distribution:**  
*Engineering, Test, and Service Unit* (Only)

---

**Owner:**

---

**Original:**

---
<table>
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<tr>
<th>Site</th>
<th>Task</th>
<th>Test Method</th>
<th>Component</th>
<th>Description</th>
<th>Drawing</th>
<th>Procedure</th>
<th>Material</th>
<th>PIR</th>
<th>Date</th>
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<tr>
<td>TMT 2</td>
<td>Pre-load mt</td>
<td>Magnetic Relo</td>
<td>Auxiliary Hook</td>
<td>Pre-load Test Aux Hook Containment 2</td>
<td>T-49765</td>
<td>6110-007091</td>
<td>C/5</td>
<td>NE</td>
<td>3/19/85</td>
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**Examiner:**
- Level: III
- Level: N/A

**Magnetic Particle (Only):**
- Particle: Cold
- Batch: N/A
- Visible: No
- Fluorescent: No
- Thermometer: N/A

**Dye Penetrant (Only):**
- Cleaner Batch: NA
- Penetrant Batch: NA
- Developer Batch: NA
- Thermometer: N/A

**Weld/Component I.D.:**
- Pipe: NA
- Size: NA
- Scholl/Thick: NA
- Joint Type: NA
- No. Record: NA
- Yes/No: NA

**Remarks:**
- Pre-load test

**Review:** Michael Zerin

**Date:** 3/26/85 QC WELDING/NDE
# Quality Control Plant Inspection Report

**Unit No.:** TMI 2  
**Inspector:** RANDY KAY  
**PIR No.:** W43186/85  
**Inspection Description:** Post/Pre Visual & MT Test  
**Date of Inspection:** 4/4/85

**Method:** Visual:  
Direct Measurement:  
Document Review:  
Other:  

**References:**

<table>
<thead>
<tr>
<th>Item Identification (as appropriate)</th>
<th>Characteristic/Activity To Be Inspected</th>
<th>Acceptance Criteria</th>
<th>Inspection Results/Readings</th>
<th>Compliance</th>
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<tbody>
<tr>
<td>POST READ TEST Aux. Hook</td>
<td>VISUAL INSPECTION</td>
<td>ASTM</td>
<td>SAT</td>
<td>SAT/UNSAT</td>
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</tbody>
</table>

**Note:** Any Particles Detected [X] at 1. SAT/UNSAT.
### Measuring and Test Equipment Data

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**Identified: Yes [ ] No [ ]**

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**Comment/Cal or Information:**

---

**Received For:**

**Date:** 4/17/85

**Ref.:** 9-10-25

**Signature:**

**Date:** 4/17/85

**Control:**

**Date:** 4/10/85

**Signature:**

**Date:** 4/10/85

**Signature:**

**Date:** 4/10/85
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<th>Task</th>
<th>Test Method</th>
<th>Component</th>
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</thead>
<tbody>
<tr>
<td>TMI 2</td>
<td>Post Load Test</td>
<td>Mag. Particle</td>
<td>Auxiliary Crane Hook</td>
</tr>
</tbody>
</table>

**Description:** Post load Mag. test Auxiliary Crane Hook - Containment 2

**Drawing:** T-4972 (wiring coop)

**Procedure:** NUC. GAP Z09.01

**Material:** CS

**P/N:** WE4318685

**Date:** 4/6/85

**Examiner:** R. Kay

**Level:** III

**Notes:** Acceptance Criteria

**Method**

**Yoke**

**Current**

**Ramp AC**

**Machine** OCT-6277

**Amperes** ORMS

<table>
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<tr>
<th>Weld/Component I.D.</th>
<th>Pipe Size</th>
<th>Schol Thick</th>
<th>Joint Type</th>
<th>NO Record</th>
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<th>Final</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Aux Hook</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>X</td>
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<td>Post. Load Mag.</td>
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**Remarks**

**Review:** 4/10/85

**QC Welding/NDI**
### FIELD CHANGE REQUEST

**FIELD QUESTIONNAIRE**

**SAFETY RELATED**

**IMPORTANT TO SAFETY**

**NOT IMPORTANT TO SAFETY**

<table>
<thead>
<tr>
<th>REF. DOC. OR SPEC.</th>
<th>REV.</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>UWI NO. 4930-3100-85 - C954</td>
<td>0</td>
<td>Replace Queue Hour Upper Limit Switch Cable</td>
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<tr>
<td>ECA NO. 3823-B5-0179</td>
<td>0</td>
<td>Modification to the Auxiliary Hoist Weight Type Limit Switch</td>
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**REASON FOR CHANGE/EVENTING CONDITION**

- Existing cable specified in ECA 0179 as not allowing proper operation of the limit switch. Cable is being replaced with the same diameter cable as specified in the vendor's sample parts bulletin.

**CHANGE REQUEST/SKETCH** (IF NECESSARY)

- Reconnect the lever of the weight type limit switch and the actuating arm using 1/4" diameter 5x19 IWRC wire rope. (2) use open pattern thimbles and 4 u-bolt wire rope clips. Install wire rope clips per Attachment 1.

**FIELD TO DETERMINE LENGTH OF WIRE ROPE REQUIRED DURING INSTALLATION.** Suitable length shall be provided to ensure limit switch activates when the actuating arm is 2' below the lowest point on the upper sheave nest.

---

**DISPOSITION**

- REQUIRED BY: [Signature] 3/28/85
- PREPARED BY: [Signature] 3/28/85

**PRELIMINARY ENGINEERING DISPOSITION**

- INTERIM APPROVAL - PROCEED WITH WORK
- REFER TO MGR ENGINEERING
- DISAPPROVED

**FINAL ENGINEERING DISPOSITION**

- CHANGE APPROVED
- DISAPPROVED

**DISPOSITION DESCRIPTION**

---

**DESIGN COG. ENG. DATE**

- B. W. 7/25/82

**RTR DATE**

- M. E. 3/21/82

**QA DATE**

- N/A

**MGR. ENGINEERING DATE**

- C. J. 3/22/82
Subject: Polar Crane Aux. Hoist Refurbishment Results

From: Manager, Site Engineering
R. E. Gallagher

To: Site Operations Director
S. Levin

Date: April 17, 1985
4340-85-0405

Location: Administration Bldg.

Site Engineering has reviewed all implementing paperwork associated with the auxiliary hoist refurbishment and has concluded that the auxiliary hoist has been satisfactorily refurbished to meet the requirements of the Auxiliary Hoist Refurbishment Plan and ANSI B30.2-1983. Major refurbishment activities are summarized as follows:

- Auxiliary hoist SESA brakes replaced and fully adjusted. Brake drums cleaned and inspected.
- Hoist completely relubricated and regreased.
- Tested, repaired or replaced all electrical devices (relays, breakers, contactors, thermal overloads, etc.).
- Insulation checked on all power wiring.
- Continuity checked on power and control circuitry to verify circuit integrity.
- Energized major components utilizing existing circuitry unloaded and/or uncoupled.
- Repaired/replaced broken, removed or damaged wiring.
- Clutch plates inspected and cleaned.
- All couplings checked and verified acceptable.
- Upper sheave nest, block, and drum inspected.
- Wire rope replaced.
- Performed non-destructive examination (visual and magnetic particle) on auxiliary hook before and after the rated load test.
A comprehensive listing of all implementing refurbishment documents has been transmitted by Recovery Operations via GPUN Memo 4370-85-1016 dated April 11, 1985.

Following refurbishment, the auxiliary hoist was successfully load tested in accordance with ANSI B30.2-1983. After the load test, a discrepancy with the accuracy of the dynamometer used to measure the test weight was discovered. This discrepancy was documented and evaluated by MNCR 090-85. This MNCR concluded that the auxiliary hoist load test was completed satisfactorily and recommended that the dynamometer used during the load test be recalibrated to verify its accuracy. Quality assurance has agreed, via acceptance of the MNCR, that this recalibration should not hinder the turnover or use of the hoist by Site Operations.

Therefore, based on the review of implementing refurbishment paperwork and the successful completion of the operational and rated load test in accordance with ANSI B30.2, Site Engineering recommends that the auxiliary hoist be used at a rated capacity of 25 tons.

Should you have any questions, please advise.

R. E. Gallagher
Manager
Site Engineering

cc: Task Leader, RD&D - D. R. Buchanan
Deputy Manager, Recovery Programs - C. W. Hultman
Manager, Recovery Operations - D. M. Lake
Manager, Recovery Programs - W. H. Linton
Manager, TMI-2 Maintenance - R. E. Seiglitz
Manager, Quality Assurance Engineering Manager - J. F. Marsden
Director, Licensing & Nuclear Safety - R. E. Rogan
Mr. R. E. Gallagher  
Manager - Site Engineering  
CPU Nuclear Corporation  
P. O. Box 480  
Middletown, Pennsylvania 17075  

SUBJECT: Three Mile Island, Unit #2  
Reactor Building Polar Crane S/N 10044  
Auxiliary Hoist Load Test  
Whiting Work Requisition #75792-93

Dear Mr. Gallagher:

The following is a written confirmation to a request by Mr. Mark Smith.  

Pursuant to our Technical Service Agreement - Addendum #4, Appendix A, 1.0 (Scope), Subparagraph 3, the service charge for the following is $300.00 (3 straight time hours @ $100.00/hour).

Based upon the results of the Whiting engineering report dated August 23rd, 1984, Whiting Corporation authorizes a one-time 33.75 ton load test for the 25 ton auxiliary hoist structural and mechanical components. The following structural and mechanical components will be overloaded:

1. Sheave bushing - page 3 of 8/23/84 report  
2. Load sensing arm - page 8 of 8/23/84 report  
3. Load cell - page 8 of 8/23/84 report  
4. Load cell support weld - page 9 of 8/23/84 report

As stated in my September 11, 1984 letter, the load cell diaphragm might require replacement after the test but only if future use of the weigh system is expected. Whiting authorizes the overload and overstress condition of these four items for this one-time overload test.

The normal speed and micro-drive motor adequacy should be verified through the original motor manufacturer.

I am hopeful this information is useful. If you have additional questions, please call.

Sincerely,

[Signature]

R. V. Norby, P.E.  
Application Engineer

RVN:rn