



GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84 2386
Writer's Direct Dial Number

(717) 948-8461

4410-85-L-0084
Document ID 0228A

April 18, 1985

IMI Program Office
Attn: Dr. B. J. Snyder
Program Director
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Snyder:

Three Mile Island Nuclear Station, Unit 2 (IMI-2)
Operating License No. DPH-73
Docket No. 50-320
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). An FCR, written against ECR 3862-65-0179 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 32.5 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 $\pm 1.0\%$ was utilized. Unit Work Instruction 4370-3100-84-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

8504240206 850418
PDR ADOCK 05000320
P PDR

was within $\pm 0.5\%$ 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 with the staff's Safety Evaluation Report dated March 7, 1985.

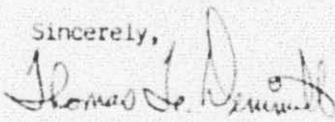
The load cell utilized during performance of the auxiliary hoist rated load test was adequate to allow accurate determination of the load test weight. The instrument utilized had a current calibration sticker with calibration results traceable to the National Bureau of Standards.

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 65,000 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 65,000 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 65,000 pounds, lower the missile shield and discontinue testing." The indicated load did not exceed 65,000 pounds as verified by the test results. Taking into account the load cell accuracy of $\pm 1\%$ 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 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, GPU Nuclear has concluded that the test results confirming a rated capacity of 25 tons are valid and intends to place the auxiliary hoist into service beginning April 22, 1985.

Sincerely,


for F. K. Standerfer
Vice President/Director, IMI-2

FRS/RBS/eml

Attachments

cc: Deputy Program Director - IMI Program Office, Dr. W. D. Travers

TLS 3/22/85
4370-72P31
Work/Sub Order No.

ATTACHMENT 1 (85 Pages)

APU Nuclear

UNIT
WORK INSTRUCTION

85-28784
T. 3/22/85
4370-2100 84 C575
UAT Number 10

Dept/Section	Type	Area/Location	Category	Other Requirements	Tech Spec Related
Plant Ops ()	SOP ()	Building Reactor II	NITS	ECA N/A	Yes <input type="checkbox"/>
Maintenance ()	TCN ()	Elevation 347'-0"	ITS <input checked="" type="checkbox"/>	Other N/A	NO <input checked="" type="checkbox"/>
QC (X)	TCN-2 ()	Grid/Bme 112A	NSR <input checked="" type="checkbox"/>		If Yes,
Rad Con ()	WRA (X)	Admin. Bldg N/A			Time Clock
Recovery Opns (X)		Other N/A			
Other ()					

Requestor J. Q. Hicks 4370 Date 12/14/84 Est 8865 Date Required 3/22/85
Preparer J. Q. Hicks Equip/System Polar Crane
Subject Polar Crane Auxiliary Hoist Testing TCN/SOP Cancellation Date _____
Priority N/A
Purpose:

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.

Description of Work:

PREFACE

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

APPROVAL TO COMMENCE WORK Responsible Supervisor

CONCURRENCE:

Cos Engineer M. O. Smith Date 3/12/85
SRG M. O. Smith Date 3/12/85
QA M. O. Smith Date 3/12/85
Rad Con M. O. Smith Date 3/12/85
SRG M. O. Smith Date 3/12/85

TO Dir M. O. Smith Date 3/12/85
SWE M. O. Smith Date 3/12/85
NBC M. O. Smith Date 3/12/85
LIC M. O. Smith Date 3/12/85
APPROVAL
Cos M. O. Smith Date 3/12/85
Site Ops Dir M. O. Smith Date 3/12/85

UWI COMPLETE

Individual M. O. Smith Time 1415
Responsible Supervisor M. O. Smith
P. D. Supervisor M. O. Smith
Cos Engineer M. O. Smith

Date 4/3/85
Date 4/3/85
Date 4-3-85
Date 4/3/85

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of 9
A0001250

DLS 3/23/01

4370-72831

Work/Sub Order No.

GPU Nuclear

UNIT
WORK INSTRUCTION
CONTINUATION SHEET

4370-3100 84 C575

UWI Number

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-ADM-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 PREREQUISITES

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

UWI 3/23/01 1.1.1 Performed mechanical component walkdowns per UWI 4370-3100-24-C483.

UWI 3/23/01 1.1.2 Performed electrical component walkdowns per UWI 4370-3738-84-E195.

UWI 3/23/01 1.1.3 Replaced electrical components per UWI 4370-3700-84-E240 and ECA 3882-84-0002, latest revision.

UWI 3/23/01 1.1.4 Performed electrical circuit checks per UWI 4370-3700-84-E241.

UWI 3/23/01 1.1.5 Performed electrical component functional checks per UWI 4370-3700-84-E242.

UWI 3/23/01 1.1.6 Performed visual and non-destructive examination of the load hook per UWI 4370-3100-84-C660.

UWI 3/23/01 1.1.7 Performed visual examination of the drum support bearing per UWI 4370-3100-84-C661.

UWI 3/23/01 1.1.8 Performed visual examination of the bottom block per UWI 4370-3100-84-C662.

UWI 3/23/01 1.1.9 Replace the hoisting wire rope per UWI 4370-3100-85-C908.

UWI 3/23/01 1.1.10 Performed visual examination of the upper sheave nest per UWI 4370-3100-84-C664.

UWI 3/23/01 UWI 3/23/01 1.1.11 Fabricate missile shield rigging plate per UWI 4370-3100-84-C574 and C956 UWI 3/23/01

UWI 3/23/01 1.1.12 Replaced and adjusted hoist brakes per UWI 4370-3100-84-C565.

DL5 2/27/05

4370-7.2.531

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84

C575

UWI Number

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 ECA 3882-85-0179, latest revision.

1.1.15

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

1.1.16

Verify approval of the Auxiliary Hoist Load Test Safety Evaluation Report. *UWI 4370-3100-85-C937*

1.1.17

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).

1.7

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

1.8

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

1.9

Prior to performing Section 4.0, a dedicated communications link shall be established between the Coordination Center and Motor Control Center 2-32A, Breaker 1QEF 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.

will be conducted per section 4.0
per 4/1/05
per 4/1/05

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."

22LS 3/23/85

4370-725-31

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UNIT
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4370-3100

84

C575

Unit Number

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.

Lead 3/24/85
3.1.1

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

Lead 3/24/85
3.1.2

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

Lead 3/24/85
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.

Lead 3/24/85
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.

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.

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).

DLS 3/23/55

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GPD Nuclear

UNIT
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CONTINUATION SHEET

4370-3100

84

C575

UWI Number

QC 3.9
Position the Polar Crane in the parked position to allow the inspection team to ascend to the Polar Crane.

WITNESS 3.10
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 367' per the load path shown on Attachment 6. Restrict the load height to an approximate 18" clearance over any obstructions in the load path.

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WORK INSTRUCTION
CONTINUATION SHEET

4370-3100	84	C575
UNIT NUMBER		

Jul 4-2-85

5.7 Disconnect the rigging from the pressurizer missile shield and the main hoist load block.

Jul 4-2-85

5.8 Re-attach the 5 ton hoist to the Polar Crane main hook.

Jul 4-2-85

5.9 Stage rigging equipment at appropriate storage location.

Jul 4-2-85

Repeat steps in line Item 3.1 as required for staging.

Jul 4-2-85

5.10 Remove cribbing and any debris from work area.

Jul 4-2-85

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 IPROCEDURE ☐PROCEDURE CHANGE REQUEST ☐UW1 ☒TEST ☐CHANGE (MODIFICATION) ☐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

YES NO

1.1 Does the Document include actions that result in a release/or potential release of (liquid or gaseous) radioactive material to the environment? ☐ ☒1.2 Does the Document address systems, components or actions which control or monitor releases or potential releases of radioactive/non-radioactive materials to the environment (including sampling, data recording and retention, instrument calibration, measurements and analysis, and action to be taken when limits are reached or exceeded)? ☐ ☒1.3 Does the Document address the disposition or storage for disposition of any non-radioactive waste material? ☐ ☒

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.) ☐ ☒

2. PEIS IMPACT DETERMINATION

YES NO

*2.1 Does the Document result in impact values stated in the PEIS being exceeded? ☐ ☒

3. UNDESIRABLE SAFETY QUESTION DETERMINATION

YES NO

3.1 Does the Document result in changes in the facility, or changes in the procedures described in the FSAR, TER, SD or a Safety Evaluation Report submitted to the NRC? ☐ ☒3.2 Does the Document result in tests or experiments not described in the FSAR, TER, SD? ☒ ☐

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.) ☐ ☒

4. IMPORTANT TO SAFETY DETERMINATION

YES NO

*4.1 Does the Document address work on a structure, system, component, or an activity that provides reasonable assurance that the facility can be operated without undue risk to the health and safety of the public? This includes the broad class of plant features covered (not necessarily explicitly) in the General Design Criteria (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-7313.01) and necessary to assure required safety functions, i.e.:

- (1) The integrity of the reactor coolant pressure boundary ☒ ☐
 (2) The capability to shutdown the reactor and maintain it in a safe shutdown condition; or ☒ ☐
 (3) The capability to prevent or mitigate the consequences of accidents which could result in potential off-site exposures comparable to the guideline exposures of 10 CFR100. ☒ ☐

*4.3 Does the Document address systems or components identified in Procedure 4000-ENG-7313.01 as Class 1 or 1A? (Optional explanation) ☒ ☐

 _____*4.4 Does the document address activities identified in Appendix A to USNRC Regulatory Guide 1.33, Rev. 2, February 1978 which provides administrative, operational or programmatic controls that are not specifically system related? ☒ ☐

Preliminary Evaluation
Part I (Cont'd)

5. IDENTIFICATION OF CHANGES TO NRC APPROVED DOCUMENTS

YES NO

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. Document Organization Plan
- F. Recovery Quality Assurance Plan
- G. Radiation Protection Plan
- H. Security Plan
- I. Emergency Plan
- J. Fire Protection Plan

YES	NO

6. OTHER TECHNICAL SPECIFICATION INDEPENDENT SAFETY REVIEW REQUIREMENTS

YES NO

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

YES NO

- 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 Locks per Technical Specification 3.6.1.3 and 4.6.1.3
- F. A.C. Distribution per Technical Specification 3.8.2.1 and 4.8.2.1
- G. EPICOP 1) Processed water per Technical Specification 3.9.13
- H. Reactor Building sump water per Technical Specification 3.9.14
- I. Crane Travel Containment Building per Technical Specification 3.10.1
- J. Minimum Shift Crew composition during core alterations per Tech. Spec. Table 6.2.1.

YES	NO

7. REVIEW SIGNIFICANCE

YES NO

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

YES NO

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.?

YES NO

(Optional Justification) _____

8. SRG REVIEW

YES NO

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.

YES NO

NOTE: Temporary Procedure Change (TCN) approvals may occur after implementation per 4300.42M.3000.C1, Section 4.3.5.1

9. NRC PRIOR APPROVAL REQUIRED

YES NO

9.1 Is the answer to question 4.3 or 4.4 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 approval by SRG first and by the NRC prior to implementation. (Add/ensure SRG and NRC are on document cover page).

YES	NO

9.2 Is the answer to question 6.1 yes? If yes, then the document shall be subject to approval by SRG first and by the NRC prior to implementation. (Add/ensure SRG and NRC are on document cover page).

YES NO

NOTE: Temporary Procedure Change (TCN) approval may occur after implementation per 4300.42M.3000.C1, 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.

YES NO

FORM 4000-AM-1218, 02-1 (5/84)

EVALUATION COMPLETED BY:

COGEN

Alfaro
Signature

RWP/MS/BS
12/18/84



Nuclear Safety Evaluation
Part III

PROCEDURE	<input type="checkbox"/>	PROCEDURE CHANGE REQUEST	<input type="checkbox"/>	UW:	<input checked="" type="checkbox"/>
TEST	<input type="checkbox"/>	CHANGE (MODIFICATION)	<input type="checkbox"/>	EXPERIMENT	<input type="checkbox"/>

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

TITLE/SUBJECT: Polar Crane Auxiliary Hoist Testing

REF: 10 CFR 50.59(a) (2)

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

YES ☐ NO ☒

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

MNS on del com
1/2/85 w/ S.P. Hacks
& R.W. Brown

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

YES ☐ NO ☒

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 referenced basis.

YES ☐ NO ☒

SEE RESPONSE TO ITEM #1

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

YES ☐ NO ☒

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

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

5. Comments:

Evaluation Completed By:
COC.ENG
Title

RECEIVED
Signature

12/18/84
Date

Unit Work Instruction		List of Attachments		4370-3100-	
				UKI No. 84-C575	
TITLE				Rev. 0	
Polar Crane Auxiliary Hoist Testing				Page 9 of 9	
UWI :	ATTACH.:				
REV.:	No.	DOCUMENT No./	REV.	DESCRIPTION	REMARKS
0	1			Operational Test	
0	2			Rated Load Test	
0	3			Required Plant Configuration	
0	4			Required Plant Configuration	
0	5			Rigging Sketch	
0	6			Load Path Diagram	
0	7			Rigging Sketch	
0	8			Cribbing Diagram	
0	9			Required Plant Configuration	
0	10			Load Path Diagram	
0	11			Skip Box/Pan Details	
0	12			Sling Acceptance Criteria	
0	13			Job Ticket	
0	14			Training Requirements Summary	
0	15			Equipment List	

List of Closeout Attachments

0	16			SOOT Preparation	
0	17			Calculation	
0	18			Test Methodology	
				Equip. Inspection Log	
				Summary	

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 830.2.0-1983, Paragraph 2-2.2.1.

1.1.1 Exceptions to Test Standards - The test will meet the requirements of ANSI 830.2.0-1983, 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

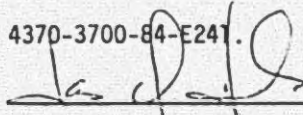
2.3.1 General Electric Instruction GEH-2458A for Geared Rotary Limit Switch Model CR115E

3.0 PREREQUISITES

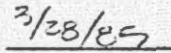
3.1 TESTS

3.1.1 Electrical circuit checks completed as per UWI

4370-3700-84-E241.



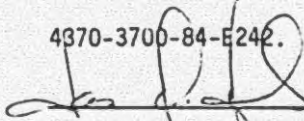
Signature



Date

3.1.2 Electrical component functional checks completed as per UWI

4370-3700-84-E242.



Signature



Date

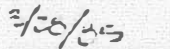
3.2 CONSTRUCTION COMPLETION STATUS

3.2.1 Replaced and adjusted auxiliary hoist brakes per UWI

4370-3100-84-C665.



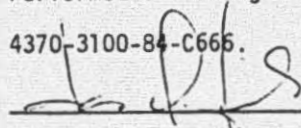
Signature



Date

3.2.2 Performed oil change and lubrication per UWI

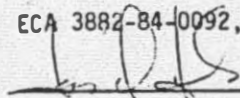
4370-3100-84-C666.


 Signature

 3/28/85
 Date

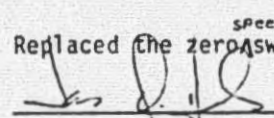
3.2.3 Replaced electrical components per UWI 4370-3700-84-E240 and

ECA 3882-84-0092, Latest Revision.


 Signature

 3/28/85
 Date

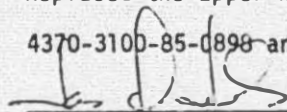
3.2.4 Replaced the zero switch per UWI 4370-3700-85-E393.

 SPEED MES 3/1/85

 Signature

 3/28/85
 Date

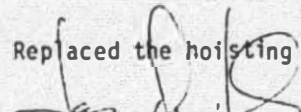
3.2.5 Replaced the upper weight type limit switch cable per UWI

4370-3100-85-0898 and ECA 3882-85-0179, latest revision.


 Signature

 3/28/85
 Date

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


 Signature

 -85 MES 3/1/85
 3/28/85
 Date

3.3 ENVIRONMENTAL CONDITIONS

None

3.4 TECHNICAL SPECIFICATION

None

4.0 TEST EQUIPMENT

None

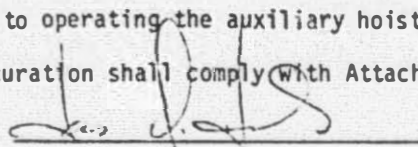
5.0 LIMITS AND PRECAUTIONS

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)

3/28/84

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.

gm gm 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.

gm gm 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.

gm gm 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.

*Waived
QC/H*

E

WITNESS

gm 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 9.0.

*FC
3327
0.00*

QNV 8.5 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.

Witness
QQA
→

WITNESS

QNV 8.6 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.

QC
QQA

QNV 8.7 Remove the jumper wire installed in Line Item 8.2 per Procedure 4000-ADM-3020.08.

QNV 8.8 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.

QNV 8.9 Set the upper geared rotary limit switch at present load block elevation per vendor instructions on Exhibit 2.

QNV 8.10 Using the high speed auxiliary hoist motor, lower the load block for approximately 30 seconds.

QNV 8.11 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.

QC
QQA

NOTE: If the upper geared rotary limit switch does not activate, repeat Steps 8.8 through 8.11 until it activates satisfactorily.

QNV

gpc 8.12 Using the auxiliary hoist inching drive motor, lower the load block for approximately 60 seconds.

WPC
WPC
WPC
WITNESS gpc
gpc
gpc
OQA 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.

gpc 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.

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

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

WPC
WPC
WPC
WITNESS gpc
gpc
gpc
OQA 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.

W 8.18 Using the auxiliary hoist inching drive motor, raise the load block for approximately 60 seconds.

W 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.

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

W 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]
Signature

3/29/05
Date

EXHIBIT 1

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.4	Upper weight type limit switch activates in high speed.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	YES	JM	3/24/85	1002
8.6	Upper weight type limit switch activates in inching speed.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	YES	JM	3/24/85	1006
8.11	Upper geared rotary limit switch activates in high speed.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	YES	JM	3/27/85	1047
8.13	Upper geared rotary limit switch activates in inching speed.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	YES	JM	3/24/85	1059
8.14	Check auxiliary hoist brakes (inboard and outboard) proper operation and engagement.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JM	3/24/85	1120
8.14	Check auxiliary hoist drive coupling and shafts for excessive vibration or wobble.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JM	3/24/85	1120
8.14	Check auxiliary hoist drum support bearing for excessive noise and vibration.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JM	3/24/85	1120
8.14	Check auxiliary hoist gear case for excessive noise, vibration, spillage, or throw of lubricants.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JM	3/24/85	1120

EXHIBIT 1

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.14	Check auxiliary hoist driveshaft support bearings for excessive noise and vibration.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	Check auxiliary hoist drum for rotation and operating condition.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	Check auxiliary hoist wire rope for reeving and unreeving ease.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	Check auxiliary hoist for excessive noise, overall condition, and operation. NOTE: Due to location of the upper sheave nest, only limited checks can be performed.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	Observe the auxiliary hoist load block for excessive noise, twisting, rocking, or other abnormal conditions.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	In the inching speed mode, check clutch engagement for slippage, vibration, noise and overall condition.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120
8.14	In the inching speed mode, check the operation of the motor gear box for excessive noise and vibration.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	3/29/85	1120

EXHIBIT 1

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.14	Check the eddy current brake for scraping, rubbing, vibration, excessive noise, and overall operation.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	<i>[Signature]</i>	3/24/85	1120
8.17	Lower geared rotary limit switch activates in high speed.	<input checked="" type="checkbox"/> YES. <input type="checkbox"/> NO	YES	<i>[Signature]</i>	3/24/85	1137
8.19	Lower geared rotary limit switch activates in inching speed.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	YES	<i>[Signature]</i>	3/24/85	1145



CR115E

GEARED ROTARY LIMIT SWITCH

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

A-C PILOT DUTY			D-C PILOT DUTY		
VOLT	BREAK	MAKE	VOLT	SINGLE THROW	DOUBLE THROW
115	15 amp	40 amp	115	0.5 amp	0.25 amp
230	10 amp	20 amp	230	0.25 amp	0.1 amp
460	6 amp	10 amp	600	0.05 amp
575	5 amp	8 amp			

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 pinion. 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 pinion for each cam by referring to the indicating arrow on insulation shield.
4. Depress pinion with a screwdriver until gears mesh.
5. Rotate cam in direction to operate switch.

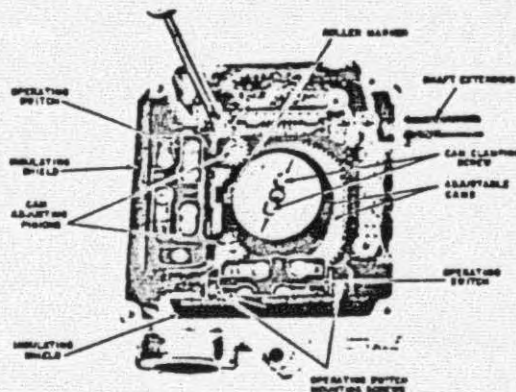


FIGURE 1 - CR115E Geared Rotary Limit Switch

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. Re-tighten 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 1

GEAR RATIO	TURNS OF INPUT SHAFT			
	MAX.	MIN.	OVERTRAVEL	TO RESET
20:1	19	1	1/2	1/2
40:1	38	2	1	2/3
80:1	75	3	2	1
111:1	104	1	3 1/2	1/2
222:1	208	2	6 1/2	2/3
320:1	300	1	10	1/2
445:1	415	3	13	1
640:1	600	2	20	2/3
1280:1	1200	3	40	1

The values above are for devices using the CR115B1 PSATS and having quick reset clutch feature on ratios 111:1 through 1280:1.

NOTE: Second dwell cam is not available.

POLAR CRANE AUXILIARY HOIST RATED LOAD TEST

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

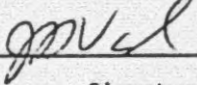
2.1 Procedure 4000-IMP-3891.01 - "TMI Unit 2 Recovery Operations Polar Crane Operation"

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

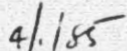
3.0 PREREQUISITES

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



WITNESS

[Signature]
QCsum 4-2-85
OQA

- 4.1 One load cell of 100,000 pounds measuring capacity permitting actual load determination from indicated was within ^{act 3/21/85} ±.5 percent accuracy within calibration range. Calibration range shall be from 0 to 100,000 pounds.

Load Cell Manufacturer: Dillon 100,000 lb Dillon
 Load Cell Serial No. : SD-6
 Calibration Due Date : 1-11-86
 Load Cell Weight : -500 lbs

QC



WITNESS

[Signature]
QCsum 4-2-85
OQA

- 4.2 One ammeter of 999 amperes measuring capacity permitting actual current readings within ± 2 percent accuracy ^{of the indicated value. act 3/21/85} ~~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

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 ± 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. load cell
scale indicates "0" reading

- 4.2 One ammeter of 999 amperes measuring capacity permitting actual current readings within ± 2 percent accuracy OF THE INDICATED VALUE. 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

Note: Testers discontinued on 4/1/85 due to
FAULTY WAD CELL. Replaced on 4/1/85. Jm 4/1/85

QC

WITNESS

QC
S.M.
OQA

QC

WITNESS

QC
S.M.
OQA

- 4.3 One surveying level with a minimum leveling accuracy of 0 to 1/4" at 75 feet.

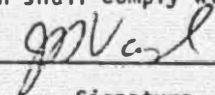
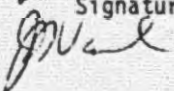
Level Manufacturer : DIETZEN
Level Serial No. : 525639

5.0 LIMITS AND PRECAUTIONS

- 5.1 This test involves work in radiation areas. Restrictions of the applicable RWP's 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.

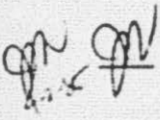
 4/1/85
Signature Date
 4/2/85

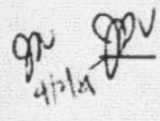
7.0 PREREQUISITE SYSTEM CONDITIONS

None

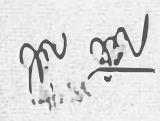
8.0 TEST METHOD

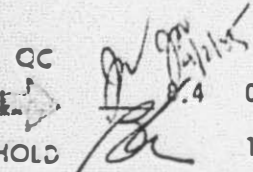
NOTE: A test engineer shall initial in the left hand margin of each completed step.

 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".

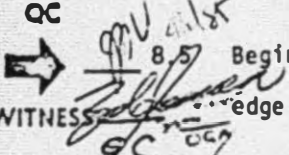
 8.2 Attach the ammeter specified in Line Item 4.2 to one phase of the inching speed motor as required to monitor the running current during motor energization.

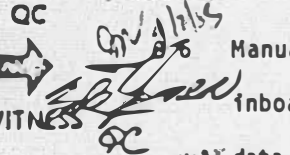
CAUTION: IF AT ANY TIME DURING MOTOR ENERGIZATION, THE MONITORED RUNNING CURRENT OF THE INCHING SPEED MOTOR EXCEEDS ^{1.61 A (1.61 A @ 115V)} ~~7.65~~ AMPERES, LOWER THE MISSILE SHIELD AND DISCONTINUE TESTING. IN-RUSH (INITIAL) CURRENT SHALL NOT BE INCLUDED IN MONITORING.

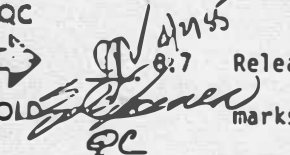
 8.3 Operate the Auxiliary Hoist inching speed motor in the up direction until tension is applied to the rigging and the indicated load begins to increase.

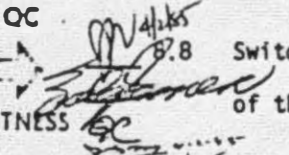
 8.4 Continue to operate the inching speed motor until the indicated load reaches 62500 pounds (\pm 1000 pounds). Record data in Section

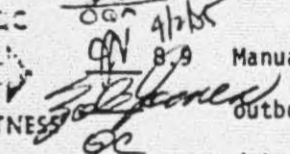
9.0.

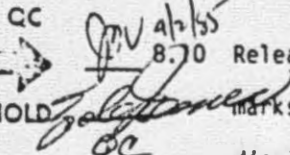
QC

 8.5 Beginning with the outboard Auxiliary Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.


QC

 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.



QC

 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.


QC

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



QC

 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.


QC

 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.



QC
 8.5 Beginning with the outboard Auxiliary ^{inboard} Hoist brake, match mark the edge of the brake shoe and brake wheel with a legible marker.


WITNESS  



QC
 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.


WITNESS  



QC
 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.


HOLD  



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

WITNESS  

QC
 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.

WITNESS  

QC
 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.

HOLD  

Note: Testing was discontinued on 4/1/85 due to faulty logic. All data recorded on this page was reperfomed on 4/2/85. - Sgt 4/3/85

CAUTION: IF ANY TIME DURING THE LIFTING OF THE PRESSURIZER SHIELD THE ATC LOAD EXCEEDS 65,000 POUNDS, LOWER THE MISSILE SHIELD AND OIL TESTING.

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

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

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.

8.14 In inching speed, lower the load approximately 3 inches and hold for 5 minutes. Record data in Section 9.0.

- QC 8.15 Disconnect the ampmeter 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 ^{63.7 AMPERES} ~~65~~ AMPERES, LOWER THE MISSILE SHIELD AND DISCONTINUE TESTING. IN-RUSH (INITIAL) CURRENT SHALL NOT BE INCLUDED IN MONITORING.

- QC
WITNESS QC
QC
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.

- QC 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.

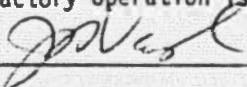
- QC 8.18 Remove jumpers installed on the thermal overloads in Step 8.1 per Procedure 4000-ADH-3020.08. Also disconnect ampmeter installed per Step 8.5

9.0 DATA REQUIREMENTS

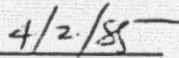
9.1 Record data as specified in Section 8 and on attached data sheets, Exhibit 1.

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



Date

EXHIBIT 1

Reper for meet with new D. 11 am 50-6

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.4	Load cell indicated load.	62,700 lbs	62,500 lbs. (±1,000 lbs.)	JN	4/2/85	1615
8.6	Outboard brake load hold time.	5 min	5 Minutes Minimum	JN	4/2/85	1624
8.7	Visual examination of the outboard brake for march mark displacement.	No visual displacement	No visual displacement	JN	4/2/85	1624
8.7	Load cell indicated load.	62,500 lbs	62,500 lbs. (±1,000 lbs.)	JN	4/2/85	1624
8.9	Inboard brake load hold time.	5 min	5 minutes maximum	JN	4/2/85	1631
8.10	Visual examination of the inboard brake for match mark displacement.	No visual displacement	No visual displacement	JN	4/2/85	1631
8.10	Load cell indicated load.	62,500 lbs	62,500 lbs. (±1,000 lbs.)	JN	4/2/85	1631
8.11	Pressurizer missile shield indicated load.	65,000 indicated	Less than 65,000 lbs.	JN	4/2/85	1637
8.11	Inching speed motor monitored running current.	1.6 A	Less than 2.65 amps. 1.61 A at 4/2/85	JN	4/2/85	1637

Note: Testing was discontinued on 4/1/85 due to
 faulty load cell. All data recorded ^{on this page} ~~was~~ ^{EXHIBIT 1} re-performed
 on 4/2/85. - JAIL 4/2/85 Performed with Dillon SD-4.

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.4	Load cell indicated load.	61,500 lbs	62,500 lbs. (±1,000 lbs.)	JR	4/1/85	1055
	<i>was cell checked to 60,000 lbs. prior to commencing tests brake hold?</i>					
8.6	Outboard brake load hold time.	5 min	5 Minutes Minimum	JR	4/1/85	1100
8.7	Visual examination of the outboard brake for march mark displacement.	No visual displacement	No visual displacement	JR	4/1/85	1100
8.7	Load cell indicated load. <i>completion of in board</i>	<i>some value of 60,000 lbs. in board noted at 5 min start 63,000 lbs</i>	62,500 lbs. (±1,000 lbs.)	JR	4/1/85	1105
8.9	Inboard brake load hold time.	5 min	5 minutes maximum	JR	4/1/85	1110
8.10	Visual examination of the inboard brake for match mark displacement.	No visual displacement	No visual displacement	JR	4/1/85	1110
8.10	Load cell indicated load.	62,100 lbs	62,500 lbs. (±1,000 lbs.)	JR	4/1/85	1110
8.11	Pressurizer missile shield indicated load.		Less than 65,000 lbs.			
8.11	Inching speed motor monitored running current.		Less than 1.65 amps. 1.61 JAIL 4/2/85			

EXHIBIT 1

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.11	Check auxiliary hoist brakes (inboard and outboard) proper operation under load and slippage.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JMV	4/2/85	1640.
8.13	Observe load hook for swivel Capabilities.	Swivels freely ~ 35° under load	Swivels freely.	JMV	4/2/85	1647
8.14	Observe auxiliary hoist inching speed motor excessive vibration, noise, or other abnormal conditions.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JMV	4/2/85	1650
8.14	In the inching speed mode, check clutch engagement for slippage under load. <small>under 2000</small>	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JMV	4/2/85	1650
8.14	Observe the auxiliary hoist load block for excessive noise, twisting, or rocking.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT..	SAT.	JMV	4/2/85	1650
8.16	High speed motor monitored running current.	60.50 amps	Less than 65 amps. 6.27 amps 1/2 amps	JMV	4/2/85	1658
8.16	Initial load reference height. <small>level ref 10.10</small>	29 1/2"	Less than 3'.	JMV	4/2/85	1702
8.16	Test load hold time	10 min	<small>4 in. 3/16 in.</small> 10 minimum	JMV	4/2/85	1712

EXHIBIT 1

9.0 DATA REQUIRED

STEP NO.	DESCRIPTION OF DATA REQUIRED	DATA	ACCEPTANCE CRITERIA	INITIALS ORIG	DATE	TIME
8.15	Final load reference height. (Ref. by line 10.10)	29 1/2" No change	Less than 1/4"	JPV	4/2/85	1713
8.16	Observe eddy current brake for vibration and noise under load.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	4/2/85	1705
8.16	Observe drive shaft support bearing for vibration and noise under load.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	4/2/85	1706
8.16	Observe drive shafts and flexible couplings for noise, vibration, and wobble under load.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	4/2/85	1706
8.16	Observe drum support bearing for vibration and noise under load.	<input checked="" type="checkbox"/> SAT. <input type="checkbox"/> UNSAT.	SAT.	JPV	4/2/85	1707



EXHIBIT 2

UWI 4370-3100-84-C575
Attachment 2
Page 13 of 13

WHITING CORPORATION

HARVEY, ILLINOIS 60426 U.S.A.
AREA CODE 312-331-4000

September 11, 1984

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:

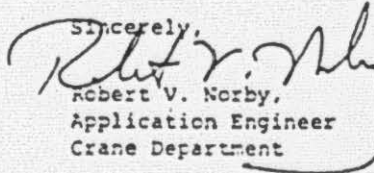
Based upon the results of the Whiting engineering report dated August 23, 1984, Whiting Corporation authorizes a one-time 32.6-ton load test for the 25-ton auxiliary hoist. Page 8 of the Whiting report indicated the load cell would exceed its rated capacity by 16% during load test. Because of the overload, 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 CMAA criteria. However, the stress is still approximately 80% of AISC allowable and approximately 88% of AWS D1.1 for normal bridge allowables.

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 ~~area~~ due to the fact that this is a one-time load for short duration. ~~There could 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

RUN/ic

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.

[illegible]

Upon completion of work notify Control Room (x-6066, 8067) so that the above listed valves may be returned to their normal positions.

TASK SUPV. RED. BELY DATE 3-28-95 TIME 11:06

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.

[illegible]

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 _____

3.29.95

TIME

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:

- gkc 1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.
- gkc 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.
- gkc 3. Close at least one door of each personnel airlock.
- gkc 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-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:

Doc.: 842119K

gkc - Joseph A. Long - 3/28/85
gkc - George L. (u) - 3/28/85

- 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.~~

*mos
penetration
w/ 3.3.3.5 & 3.3.3.6
3/1/15*
- 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.

April 4th 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 initialing, dating and stating time of closure below.

VALVE	SHIFT SUPV.	DATE	TIME
RR-V-5A	<i>[Signature]</i>	3/28/85	0540
RR-V-5B	<i>[Signature]</i>	3/28/85	
RR-V-5C	<i>[Signature]</i>	3/28/85	
RR-V-6C	<i>[Signature]</i>	3/28/85	
RR-V-6D	<i>[Signature]</i>	3/28/85	
RR-V-6E	<i>[Signature]</i>	3/28/85	
RR-V-11A	<i>[Signature]</i>	3/28/85	
RR-V-11B	<i>[Signature]</i>	3/28/85	
RR-V-11C	<i>[Signature]</i>	3/28/85	
RR-V-11D	<i>[Signature]</i>	3/28/85	
RR-V-11E	<i>[Signature]</i>	3/28/85	
RR-V-25A	<i>[Signature]</i>	3/28/85	
RR-V-25B	<i>[Signature]</i>	3/28/85	
RR-V-25C	<i>[Signature]</i>	3/28/85	
RR-V-25D	<i>[Signature]</i>	3/28/85	
RR-V-25E	<i>[Signature]</i>	3/28/85	
GRV-1A	<i>[Signature]</i>	3/28/85	0615
GRV-1B	<i>[Signature]</i>	3/28/85	
MSV-7B	<i>[Signature]</i>	3/28/85	0540
GRV-9	<i>[Signature]</i>	3/28/85	0615
TDW-V001			
TDW-V002			

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 1600

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:

- JML* 1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.
- JML* 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.
- JML* 3. Close at least one door of each personnel airlock.
- JML* 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-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

JML Joseph H. Longdon 3-28-85

- 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.~~

*mos
and telecom
w/ J. Q. Hines
3/11/13*
- 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.

Scil 4/3/85.

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.

VALVE	SHIFT SUPV.	DATE	TIME
RR-V-5A	<i>[Signature]</i>	3/29/85	0430
RR-V-5B	<i>[Signature]</i>	3/29/85	0430
RR-V-5C		3/29/85	0430
RR-V-6C		3/29/85	0430
RR-V-6D		3/29/85	0430
RR-V-6E		3/29/85	0430
RR-V-11A		3/29/85	0430
RR-V-11B		3/29/85	0430
RR-V-11C		3/29/85	0430
RR-V-11D		3/29/85	0430
RR-V-11E		3/29/85	0430
RR-V-25A		3/29/85	0430
RR-V-25B		3/29/85	0430
RR-V-25C		3/29/85	0430
RR-V-25D		3/29/85	0430
RR-V-25E		3/29/85	0430
GRV-1A		3/29/85	0400
GRV-1B		3/29/85	0400
MSV-7B		3/29/85	0430
GRV-9		3/29/85	0400
TDW-V001		3/29/85	0530
TDW-V002		3/29/85	0530

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

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:

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

John 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.

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

John 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:

John - Douglas R. Langdon

- 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.~~

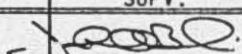
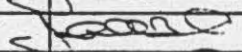
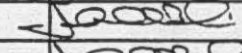

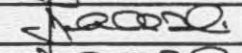
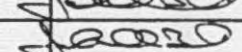
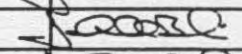

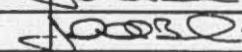
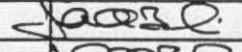

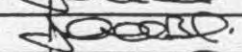

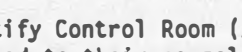
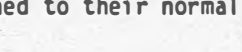


*mos
anulecom
w/ J. O'Hara
3/1/85*
- R-620 - MS-V-225 open for "B" OTSG N₂ compensation for level standpipe. 0-5 PSIG gauge installed downstream.
- R-622 - MS-V-226 open for "A" OTSG N₂ compensation for level standpipe. 0-5 PSIG pressure gauge installed downstream. Also, 0-60 PSIG gauge installed for 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.

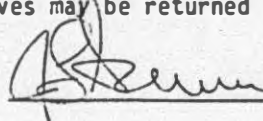
- Rev 9/3/85 5. At the end of an entry day, when all loads are secured, systems may be returned to pre-isolation condition until the next work day. The Task Supervisor shall notify the Control Room Shift Supervisor that the Reactor Building systems may be returned to the pre-load test configuration.

RATED LOAO TEST REQUIRED PLANT CONFIGURATION

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

VALVE	SHIFT SUPV.	DATE	TIME
RR-V-5A		4-1-85	0540
RR-V-5B		4-1-85	0540
RR-V-5C		4-1-85	0540
RR-V-6C		4-1-85	0540
RR-V-6D		4-1-85	0540
RR-V-6E		4-1-85	0540
RR-V-11A		4-1-85	0540
RR-V-11B		4-1-85	0540
RR-V-11C		4-1-85	0540
RR-V-11D		4-1-85	0540
RR-V-11E		4-1-85	0540
RR-V-25A		4-1-85	0540
RR-V-25B		4-1-85	0540
RR-V-25C		4-1-85	0540
RR-V-25D		4-1-85	0540
RR-V-25E		4-1-85	0540
GRV-1A		4-1-85	0540
GRV-1B		4-1-85	0540
MSV-7B		4-1-85	0540
GRV-9		4-1-85	0540
TDW-V001		4-1-85	0540
TDW-V002		4-1-85	0540

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 4-1-85

TIME 1400

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:

- HL 1. Place the operating train of the Reactor Building purge in temporary shut-down per Operating Procedure 2104-4.91, Section 3.3.1.
- HL 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.
- HL 3. Close at least one door of each personnel airlock.
- HL 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-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.~~

*mos
paulson
w/ J. Q. Hines
3/11/65*
- 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.

- Revised 4/3/97 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.

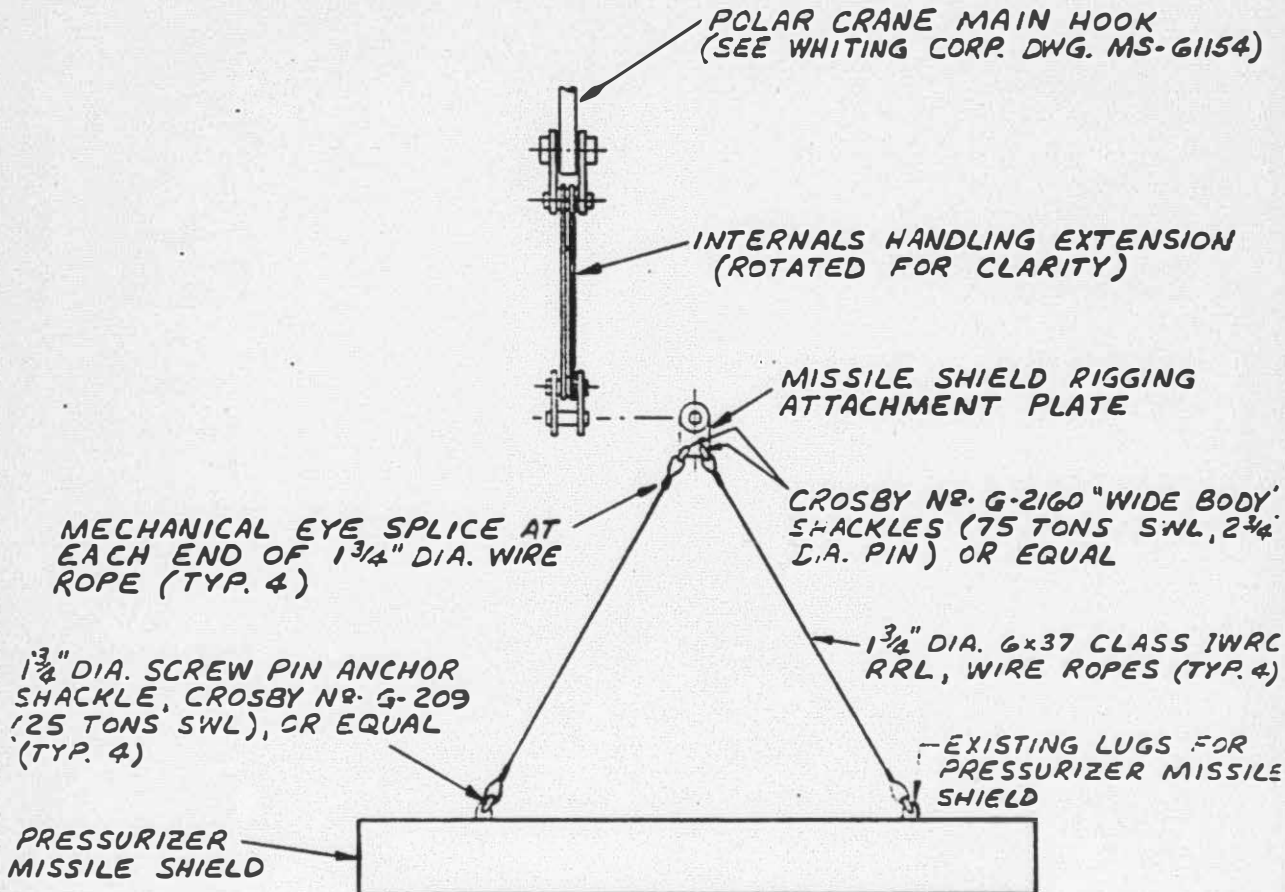
RATED LOAD TEST
REQUIRED PLANT CONFIGURATION

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

VALVE	SHIFT SUPV.	DATE	TIME
RR-V-5A	<i>Al. M. D.</i>	4-2-85	1330
RR-V-5B			
RR-V-5C			
RR-V-6C			
RR-V-6D			
RR-V-6E			
RR-V-11A			
RR-V-11B			
RR-V-11C			
RR-V-11D			
RR-V-11E			
RR-V-25A			
RR-V-25B			
RR-V-25C			
RR-V-25D			
RR-V-25E			
GRV-1A			
GRV-1B			
MSV-7B			
GRV-9			
TDW-V001	✓	✓	✓
TDW-V002	✓	✓	✓

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

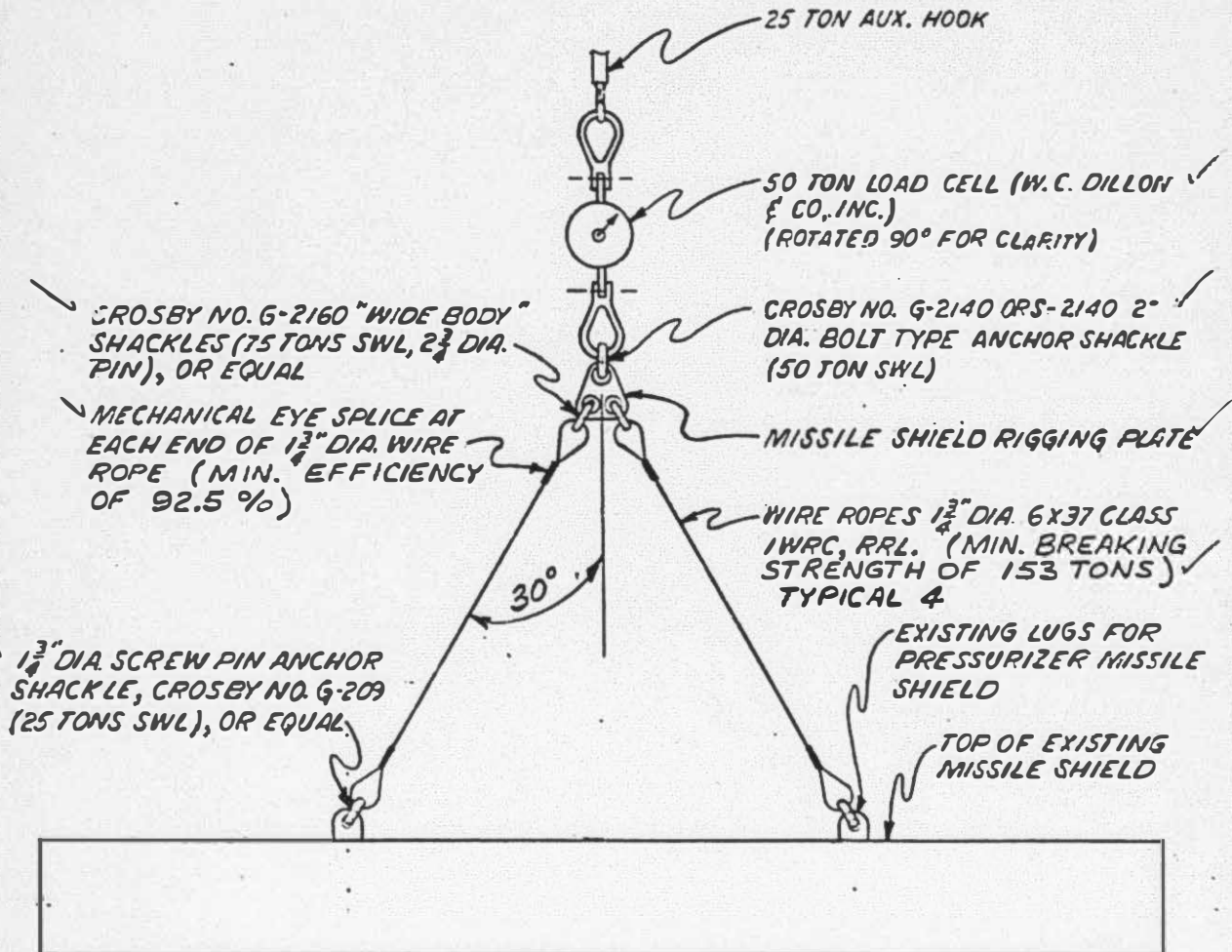
TASK SUPV. *Joe Barry* DATE 4-2-85 TIME 2100



PRESSURIZER MISSILE SHIELD RIGGING
USING POLAR CRANE MAIN HOOK

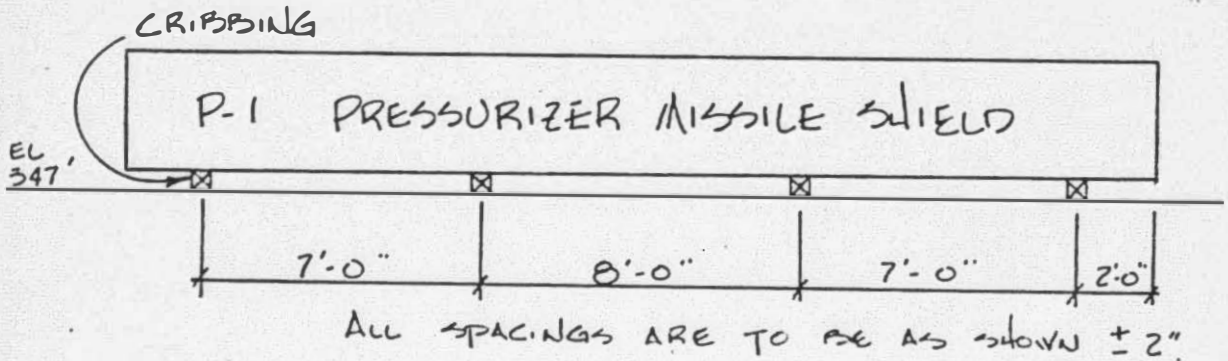
Page 1 of 1



MISSILE SHIELD RIGGING

NOTES:

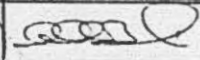
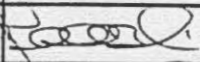
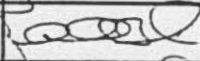


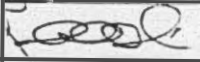
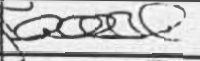
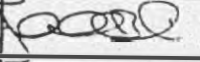

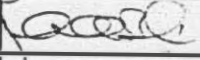
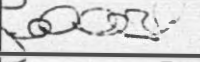
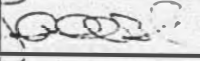
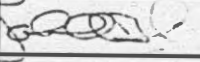
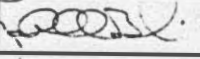
1. CRIBBING shown shall be 4"x4"x5'-0" STRUCTURAL TIMBER MINIMUM.
2. THE CRIBBING ARRANGEMENT shown is RESTRICTED TO EL. 347' IN THE AREA OF THE POLAR CRANE MAIN HOIST LOAD TEST.

CRIBBING DIAGRAM

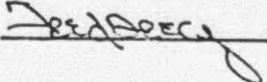
REQUIRED PLANT CONFIGURATION

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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V210		3/28/85	0130
MU-V377		3/28/85	0100
SGC-V2		3/28/85	0300
EF-V12B		3/28/85	0130
MU-V378		3/28/85	0130
MU-V439		3/28/85	0130
EF-V33B		3/28/85	0130
IC-V207		3/28/85	0130
EF-V12A		3/28/85	0130
EF-V33A		3/28/85	0130
CA-V9		3/28/85	0130
SV-V55		3/28/85	0130
SV-V20		3/28/85	0215
NS-V72		3/28/85	0130

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 3-28-85 TIME 1600

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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V81	<i>[Signature]</i>	3/23/85	0130
IC-V3	<i>[Signature]</i>	3/23/85	0130
IC-V4	<i>[Signature]</i>	3/28/85	0130
IC-V5	<i>[Signature]</i>	3/28/85	0130
FW-V17A	<i>[Signature]</i>	3/28/85	0130
FW-V17B	<i>[Signature]</i>	3/28/85	0130
FW-V19A	<i>[Signature]</i>	3/28/85	0130
FW-V19B	<i>[Signature]</i>	3/28/85	0130
FW-V35A	<i>[Signature]</i>	3/28/85	0300
FW-V35B	<i>[Signature]</i>	3/28/85	0300
FW-V68A	<i>[Signature]</i>	3/28/85	0300
FW-V68B	<i>[Signature]</i>	3/28/85	0300
DW-V28	<i>[Signature]</i>	3/28/85	0130
FS-V639	<i>[Signature]</i>	3/28/85	0130

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 1600

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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V210	<i>[Signature]</i>	3/29/85	0440
MU-V377	<i>[Signature]</i>	3/29/85	0440
SGC-V2		3/29/85	0440
EF-V12B		3/29/85	0440
MU-V378		3/29/85	0440
MU-V439		3/29/85	0440
EF-V33B		3/29/85	0440
IC-V207		3/29/85	0440
EF-V12A		3/29/85	0440
EF-V33A		3/29/85	0440
CA-V9		3/29/85	0440
SV-V55		3/29/85	0440
SV-V20		3/29/85	0530
NS-V72	<i>[Signature]</i>	3/29/85	0440

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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V81	<i>[Signature]</i>	3/29/85	0440
IC-V3	<i>[Signature]</i>	3/29/85	0440
IC-V4		3/29/85	0440
IC-V5		3/29/85	0440
FW-V17A		3/29/85	0440
FW-V17B		3/29/85	0440
FW-V19A		3/29/85	0440
FW-V19B		3/29/85	0440
FW-V35A		3/29/85	0400
FW-V35B		3/29/85	0400
FW-V68A		3/29/85	0400
FW-V68B		3/29/85	0400
OW-V28		3/29/85	0440
FS-V639	<i>[Signature]</i>	3/29/85	0440

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

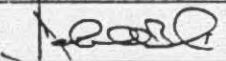
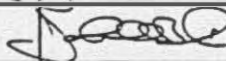



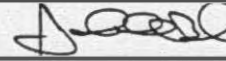

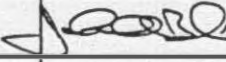






TIME

1505

REQUIRED PLANT CONFIGURATION

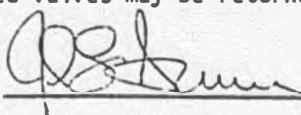
PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

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.

VALVE	SHIFT		TIME
	SUPV.	DATE	
NS-V210		4-1-85	0540
MU-V377		4-1-85	0540
SGC-V2		4-1-85	0540
EF-V12B		4-1-85	0540
MU-V378		4-1-85	0540
MU-V439		4-1-85	0540
EF-V33B		4-1-85	0540
IC-V207		4-1-85	0540
EF-V12A		4-1-85	0540
EF-V33A		4-1-85	0540
CA-V9		4-1-85	0540
SV-V55		4-1-85	0540
SV-V20		4-1-85	0540
NS-V72		4-1-85	0540

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

4-1-85

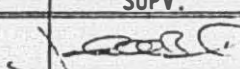

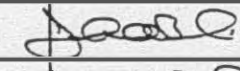
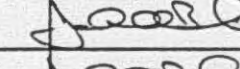

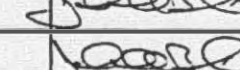
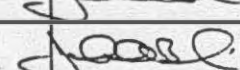
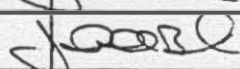

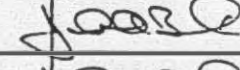
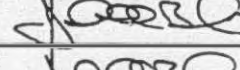


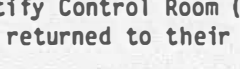
TIME

1400

REQUIRED PLANT CONFIGURATION

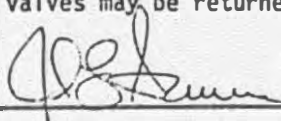
PRE-LOAD TEST AND POST-LOAD TEST ACTIVITIES

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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V81		4-1-85	0345
IC-V3		4-1-85	0545
IC-V4		4-1-85	0545
IC-V5		4-1-85	0545
FW-V17A		4-1-85	0545
FW-V17B		4-1-85	0545
FW-V19A		4-1-85	0545
FW-V19B		4-1-85	0545
FW-V35A		4-1-85	0545
FW-V35B		4-1-85	0545
FW-V68A		4-1-85	0545
FW-V68B		4-1-85	0545
DW-V28		4-1-85	0545
FS-V639		4-1-85	0545

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.



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.

VALVE	SHIFT SUPV.	DATE	TIME
NS-V210	<i>A. M. H.</i>	4-2-85	1250
✓ MU-V377		4-2-85	1145
SGC-V2		4-2-85	1250
EF-V12B		4-2-85	1145
✓ MU-V378		4-2-85	1155
MU-V439		4-2-85	1155
EF-V33B		4-2-85	1155
IC-V207		4-2-85	1250
EF-V12A		4-2-85 4-2-85	1145
EF-V33A		4-2-85	1145
CA-V9		4-2-85	1145
✓ SV-V55		4-2-85	1145
SV-V20		4-2-85	1250
NS-V72		4-2-85	1140

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. *Fred J. J.* 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.

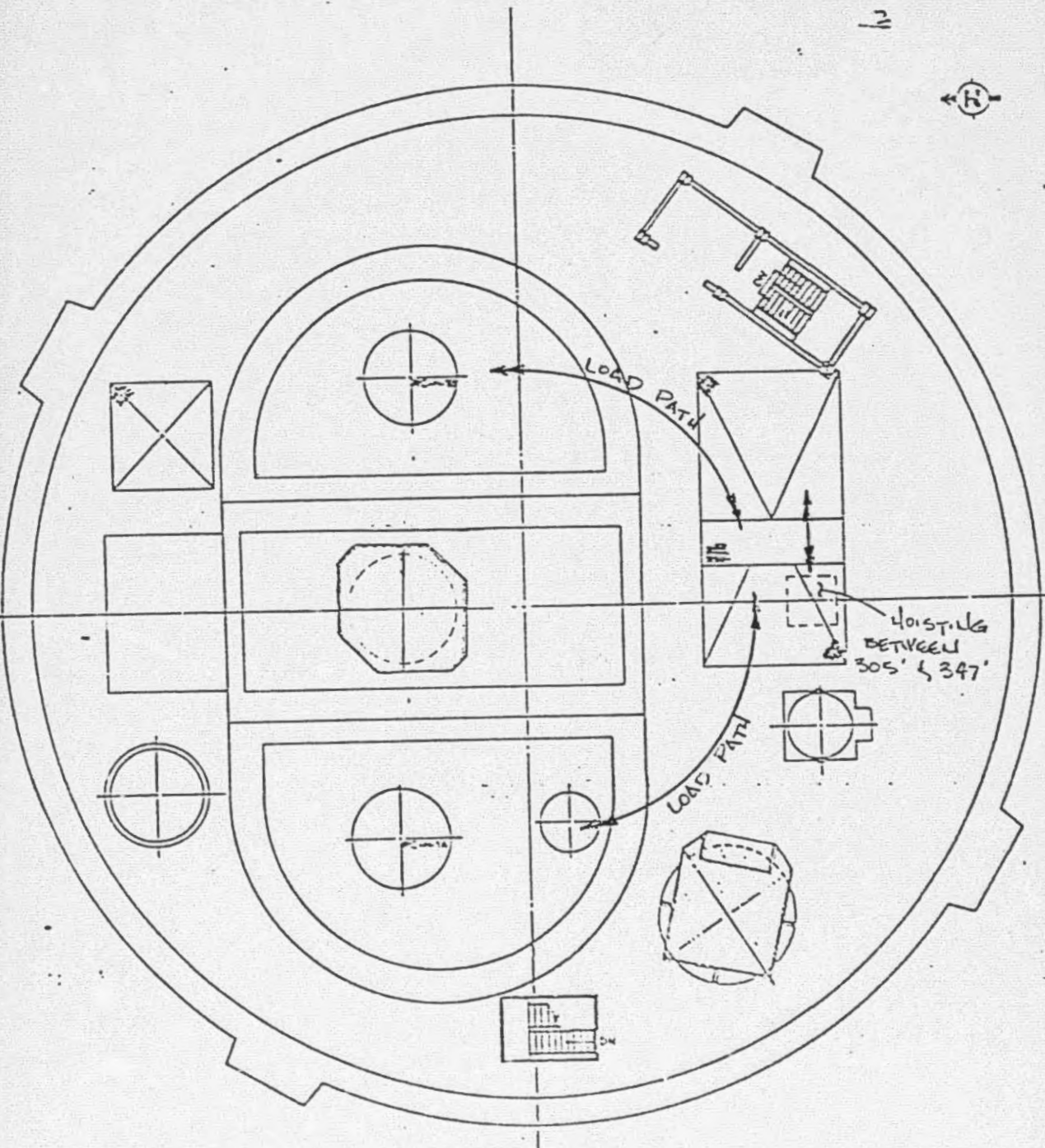
VALVE	SHIFT SUPV.	DATE	TIME
NS-V81	<i>H. M. L.</i>	4-2-85	1140
IC-V3		4-2-85	1140
IC-V4		4-2-85	1140
IC-V5		4-2-85	1140
FW-V17A		4-2-85	1140
FW-V17B		4-2-85	1140
FW-V19A		4-2-85	1140
FW-V19B		4-2-85	1140
FW-V35A		4-2-85	1140
FW-V35B		4-2-85	1140
FW-V68A		4-2-85	1140
FW-V68B		4-2-85	1140
DW-V28		4-2-85	1140
FS-V639		4-2-85	1140

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. *DOED J. J. J.* DATE 4-2-85 TIME 2100

LOAD PATH DIAGRAM

2



PLAN 347'-6"

FOR ASSEMBLY AND STAGING

SUBJECT Skip Box Rigging Details

SHEET NO

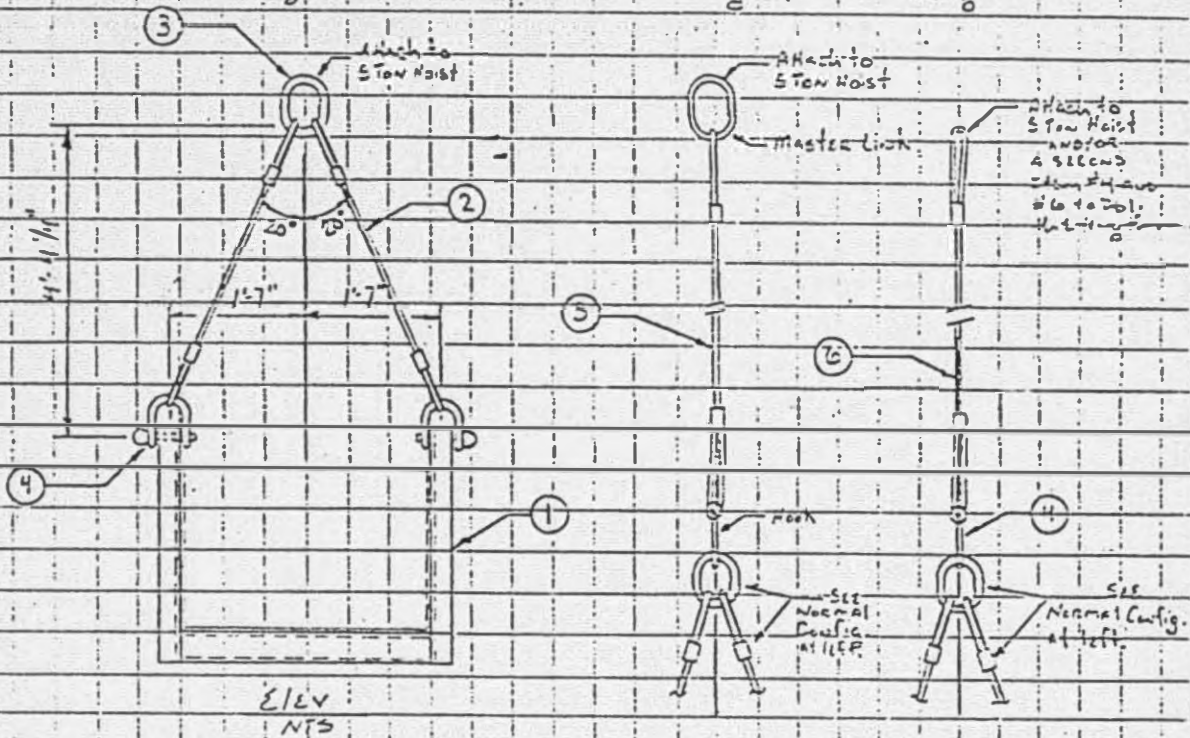
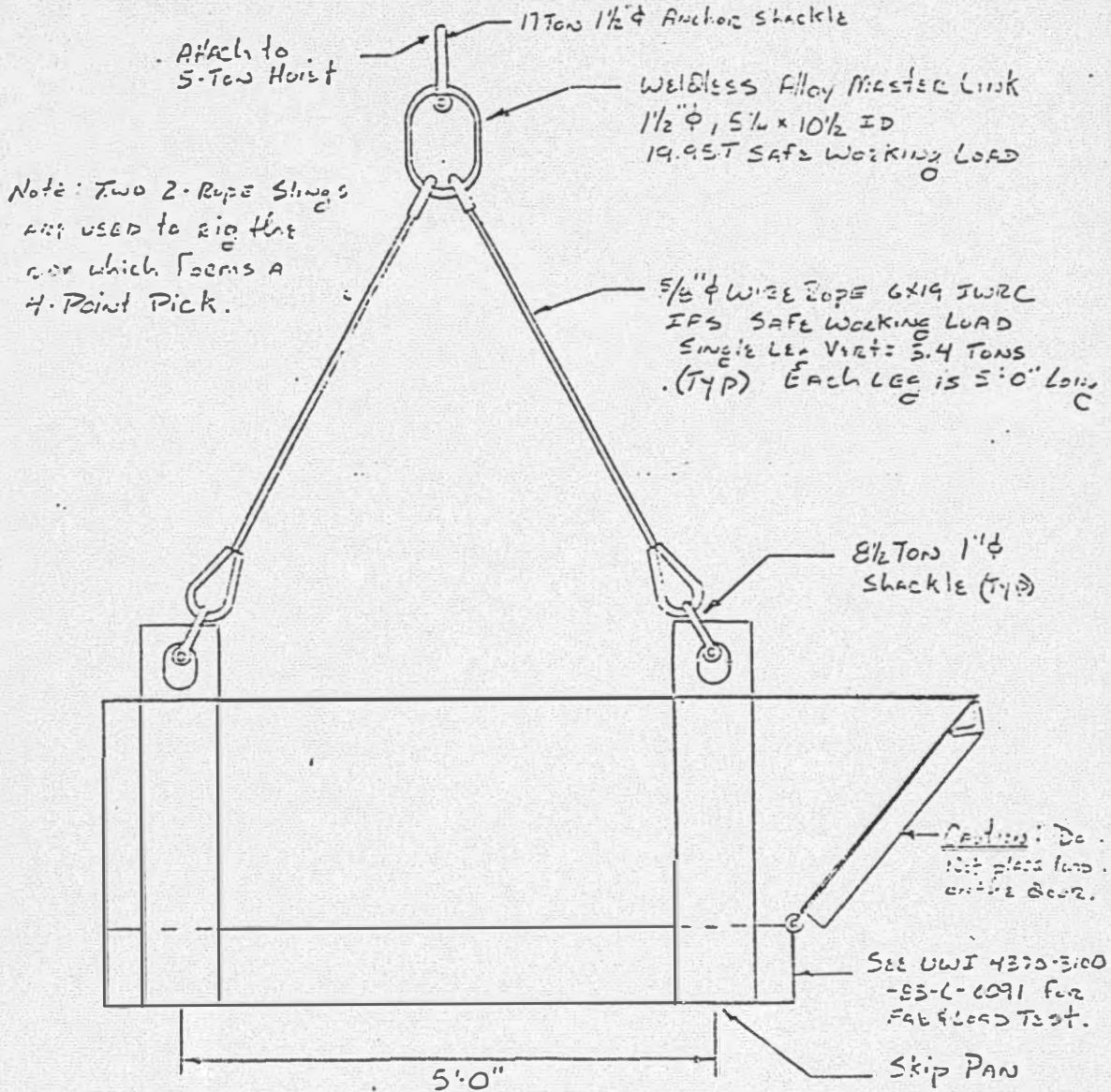
NORMAL
ConfigurationALTERNATE
Config = 1ALTERNATE
Config = 2

Fig No	Description	Rated Capacity
1	Tool/Material Rigging Box, RE: UWI-4370-3100-83-C-104	Max. GROSS WT = 2300lb
-	for FABRICATION AND LOAD TEST.	(See working load + safety factor)
2	5/8" Wire Rope Sling EIPS, SWRC 4" inch spliced thimble ends	3.9 TONS
3	Weldless Alloy master link, 1" stock 4"x6"=D.	12.15 TONS
4	1" Anchor Shackle	8.5 TONS
5	1/2" & 6x12, SWRC 4" weldless master link at the top	The whole sling (2ops, hook & link) LAST LOAD tested to 12,000 lbs, AND HAS A SAFE WORKING LOAD OF 6,000 lbs. U
-	AND A Hook with a safety catch on the bottom (30 FT Long)	1/2" & 6x12
6	3/4" Wire Rope Sling EIPS, SWRC 4" inch spliced eye	5.6 TONS
-	ends ONE #6 + ONE #4 = 9'-6" long	

CAUTION: No more than 1200 lbs. may be placed in this rigging box item #1

Skip PAN Rigging Sketch

Caution: No more than 3000 lbs may be placed in the rigging box.



Max Net Load = 3000 lb

Box Weight = 1100 lb

Total Gross WT = 4100 lb

ANSI
B30.9
1971

UWI 4370-3100-84-C575

Attachment 12

AMERICAN NATIONAL STANDARD

Page 1 of 3

SAFETY STANDARDS FOR CRANES, DERRICKS, HOISTS,
HOOKS, JACKS, AND SLINGS

SLINGS

✓ANSI B30.9 - 1971

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TMI

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 bridle 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:

- a. moisture
- b. extreme heat
- c. corrosion
- d. being run over
- e. 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:

- a. Frequency of sling use
- b. Severity of service conditions
- c. Nature of lifts being made
- d. 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 area

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 base (bowl) of the hook to prevent hook point loading

j. Avoid any kinks, 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.

DESCRIBE
MALFUNCTION
OR
MODIFICATION
DESIREDCAUSE OF
MALFUNCTION
(IF KNOWN)

COMPONENT DESIGNATION										LOCATION / UNIT		JOB TYPE		JOB TICKET NUMBER		REQUEST DATE			RECOMMENDED PRIORITY	
SYS	7	E	COMP TYPE	11	2	COMP ID	15	16	17	22	23	24	25	26	27	28	29	30	31	32

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 575
For machinery history.

ORIGINATOR'S EMP. NO.					SUPERVISOR'S EMP. NO.				
04370					06117				
ORIGINATOR'S SIGNATURE					SUPERVISOR'S SIGNATURE				
DATE					DATE				
12/14/64					12/18/64				

WORK ORDER NUMBER				CC CODE		ACCOUNT NUMBER		PLANT CONDITION				APPROVAL			START						
LOCATION		SERIAL																			
0360																					
CHANGE MOD AID G		R W P		NUC SAFETY		NP AD		REG AGENCY CODE		CHG/MOD ALMERA		TAGGING APPLICATION NO		ENV CODE		OUTAGE CAUSE CODE		STATUS MOD CODE		ESTIMATED DOLLARS	

S/W APPROVAL COMMENCE WORK			S/F APPROVAL COMMENCE WORK			PROCEDURE NUMBER			REF. LOCATION OF CONTRACTOR			EST. CREW SIZE			EST. MANHOURS		
MO DAY YR			MO DAY YR														

ASSISTING DEPARTMENT			ASSISTING DEPARTMENT			ASSISTING DEPARTMENT											
RESP. LOCATION OF CONTRACTOR		EST. CREW		EST. MANHOURS		RESP. LOCATION OF CONTRACTOR		EST. CREW		EST. MANHOURS		RESP. LOCATION OF CONTRACTOR		EST. CREW		EST. MANHOURS	

JOB COMPLETION DATE			FIELD WORK COMPLETION DATE			SIGN OFF REASON CODE			TOTAL ACTUAL MANHOURS			PURCHASE REQUESTION NUMBER			PURCHASE ORDER NUMBER			MATERIAL ORDER NUMBER		
MO DAY YR			MO DAY YR			CODE														
307A			040285																	

RESOLUTION DESCRIPTION																	
07 COMPLETED TASK PER UWI 4370-3100-84-C 575																	
08																	
09																	
10																	

APPROVAL END					FAILURE STATUS					ORIGINATOR — SUPERVISOR — SUPERVISOR OF MAINTENANCE — MAINTENANCE FOREMAN — JOB PERFORMER — MAINTENANCE FOREMAN — SUPERVISOR OF MAINTENANCE — CM COORDINATOR — DATA ENTRY — SUPERVISOR OF MAINTENANCE CM COORDINATOR — DATA ENTRY							
YR MO DAY HR MIN					AD 40 50												

APPROVAL		APPROVAL		CAUSE OF FAILURE CODE		EFFECT OF FAILURE CODE		ACTION TAKEN CODE		REMARKS	
YR MO DAY		YR MO DAY		A B		A B		A B		YR MO DAY	

EXHIBIT 1

TRAINING REQUIREMENTS SUMMARY (See Reverse Side for Instructions)

Attachment 14

Page 1 of 1

PART I.

① UWI Number 4370-310-84-C575 Revision 0

②A ☐ Pre-Job Briefing Only

②B ☒ Classroom ☐ Walkthrough ☐ Mock-Up

③ Special Equipment Training: _____

④ By: [Signature]

Date: 12/14/84

⑤ Training Verified Complete [Signature] Date: 3-23-85
Entry Supervisor or Designee

o INDUSTRIAL SAFETY EVALUATION o

PART II.

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 GPUNC 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 4000 ADM 1100-03

C. Short
Safety Representative

12/18/84
DATE

8705
EXTENSION

REVISION INFORMATION

EQUIPMENT LIST

Attachment 15

1. MATERIAL DEPOSITION	2. QTY.	3. COMB. CODE	4. STAGING LOCATION	POST ENTRY DISPOSITION		
				5. IN-CTMT	6. OUT-CTMT	7. LOCATION
50 ton load cell	1					
Ammeter- 0 to 999 amps range						
Survey Level						
Missile Shield						
Rigging Plate						

8. MATERIAL STAGED _____

9. MATERIAL IN ANTE ROOM _____

 10. REVIEW COMPLETE: STAGING COORDINATOR _____
 MATERIALS COORDINATOR _____

BRIEFING CHECKLIST

PAGE 1 OF 4
 ATTACHMENT 16
 U.S. 4370-3100-Ed-C575

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 CODE Air Line Testing NO. 001

Init. - Date

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

LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85N/AN/AN/AN/ALCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85N/AN/ALCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85N/ALCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85LCIL 3/21/85N/A

List Personnel in Attendance:

see attached

Signature

Date

LCIL 3/21/85

4000-NON-3055, 03-212/84)

TEST MANNING ASSIGNMENT SHEET

Page 1 of 2
Attachment 17

TEST PROCEDURE TITLE: POLAR CODE Adv. Insp. Temp. Log NO. 4570-3100-84-C575 ^{U/I}


Title and Name

Function/Location

See ATTACHED schedule.

Test Engineer's Signature

Date


3/27/85

I

ALARA REVIEW COVER SHEET.

PAGE 1 OF 2

TITLE/ACTIVITY DESCRIPTION		CONTROL NUMBER		REV.	ARN
POLAR CRANE AUXILIARY HOIST TESTING		4370-3100 -E4-C575		C	51017
REVIEW REQUEST DATA		- ARN REVIEW REVISIONS			EXPOSURE MANAGEMENT
REQUESTING DEPARTMENT		REV	DATE	RAD CON SIGNATURE	ETN
REQUESTOR'S NAME					D45J006
NOMENCLATURE CODE					ESTIMATED EXPOSURE
TELEPHONE NUMBER		REVIEW DATA USED			5500 (MREM)
REVIEW NEED DATE		1/27/85 Kokochak Polar Crane			ACTUAL EXPOSURE
		1/27/85 Slum 341'			(MREM)
		1/17/85 Slum 305'			EXPIRATION DATE
RAD CON RECEIVING DATA		MAXIMUM EXPOSED INDIVIDUAL			
DATE	3/27/85	225 (MREM)			
TIME	0700				
REVIEW BASIS	Last Test and Hoist				
RAD CON SIGNATURE	M. J. Harris				

II

RWP TIME STUDY		DESCRIPTION OF RWP AREAS			
		1	2	3	4
POLAR CRANE TOWER DECK WALKWAY EL. 443'-6" EL. 427'-3"		PRESSURIZER HUMIDIFIER EL. 367'-0" EL. 347'-0" (HATCH AREA)	EL. 305' BROWN TIE EL. 347'-0" HATCH OPENING		
NO	JOB CLASSIFICATION				
A	1000	4 hrs	36 hrs		
B	1000	12 hrs			
C	1000		2 hrs		
D	1000	8 hrs	12	2	
E	1000	4 hrs	6 hrs		
F					
G					
H					
MAX. TIME PER INDIVIDUAL ENTRY		2 hrs	2 hrs	2 hrs	

ALARA REVIEW FORMARI 51017

I. Supplemental RWP Requirements (Explain on Attached Sheets):

<u>Planning</u>	<u>Exposure Control</u>	<u>Contamination Control</u>
<input checked="" type="checkbox"/> Pre-Job Briefing	<input type="checkbox"/> Shielding	<input type="checkbox"/> Decontamination
<input type="checkbox"/> Mock-up Training	<input type="checkbox"/> Flush/Remove Source	<input type="checkbox"/> Containment Device
<input type="checkbox"/> Post-Job Review	<input type="checkbox"/> Move Component/Task	<input type="checkbox"/> Aux. Ventilation
<input type="checkbox"/> Hold Points	<input type="checkbox"/> Remote Handling	<input type="checkbox"/> Access Control
<u>Manning of Entry</u> <u>in CC</u>	<u>N/A</u>	<u>N/A</u>

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

Personnel Protection/MonitoringSpecial Anti-C's Prior RWPSpecial Respiratory Protection To be determined by HP based on dirt jar sampleSpecial Dosimetry RTKnee for all workersSpecial Radiation Monitor(s) Prior RWPIII. Dose Estimates

- ① Workers at Pole crane 442' section 225 mrem/man DSP 25%MR.
- ② All others 150 mrem/man DSP 25%MR
- ③ Supervisor 150 mrem/man DSP 25%MR

Review Performed By: MJH
(Rad. Eng.)1-27-85
Date

GPU Nuclear

4370-3100 EACCG3

UWI Number

Dept/Section	Type	Area/Location	Category	Other Requirements	Tech Spec Related
Plant Ops ()	SOP ()	Building <u>Reactor II</u>	NITS <u>X</u>	ECA <u>N/A</u>	Yes <input type="checkbox"/>
Maintenance ()	TCN ()	Elevation <u>347' 442'</u>	ITS	Other <u>N/A</u>	No <input checked="" type="checkbox"/>
QC <u>Jan 1/2/84</u>	TCN-2 ()	Grid/Rm <u>N/A</u>	NSR		If Yes, Time Clock
Rad Con ()	WRA <u>60</u>	Admin. Bldg. <u>N/A</u>			
Recovery Opns <u>60</u>		Other <u>N/A</u>			
Other ()					

Requestor J. Q. Hicks 4370 Date 11-20-84 Ext. 8865 Date Required 11-30-84
 Reparer J. Q. Hicks Equip/System POLAR CRANE
 Subject INSPECT WIRE ROPE BEFORE & AFTER LOAD TEST TCN/SOP Cancellation Date N/A
 Priority N/A

UPPOSE:

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).

Description of Work

- 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 LOAD BLOCK IS LOWERED TO ELEVATION 305'. Lead Engr APR 1/2/84

8504240222 850418
PDR ADOCK 05000320
PDR

ARN 40884Supt. withing 1/2/84Safety Christie 1/2/84

APPROVAL TO COMMENCE WORK. Responsible Supervisor

CATEGORY 1Time 0743Date 2-26-85

CONCURRENCE:

Cog Engineer APR 1/2/84Date 11/27/84SWER WRP

Date

PDR M. D. SmithDate 12/1/84NRC WRP

Date

SRG NR

Date

Date

QA NR

Date

APPROVAL:

Rad Con Robert H. HarkinsDate 12/1/84Cog. Mgr. APR 1/2/84Date 12/1/84SRO NR

Date

Site Op. Dir. APR 1/2/84Date 12/31/84

UWI COMPLETE:

Individual JOSEPHTime 0900Date 9-10-85Responsible Supervisor JOSEPHDate 4-10-85P. D. Supervisor JOSEPHDate 4-10-85Cog. Engineer JOSEPHDate 4/10/85Page 1of 7

A0001960

- 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, corrugation, gouges or obvious defects.}
- INSPECT the wire rope attachment point at the drum. ^{most likely to fail at this point}
- 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
JQH 2/26/85

MODERATE

SEVERE

SURFACE CORROSION:

Non-existent for replacement rope - JQH 4/9/85

ACCEPTABLE
JQH 2/26/85

UNACCEPTABLE

ORIGINAL DIAMETER WEAR: JQH 4/9/85

(Include actual rope diameter measurements in close out attachment)
^{most correlation to 50th Feb 12/1/84}

ACCEPTABLE
JQH 2/26/85

UNACCEPTABLE

HEAT DAMAGE:

JQH 4/9/85 (Non-existent)

ROPE DISTORTION: ACCEPTABLE UNACCEPTABLE
JQI 2/26/85
JQI 4/9/85

BROKEN WIRES: ACCEPTABLE UNACCEPTABLE
JQI 2/26/85
JQI 4/9/85

CORE CORROSION: ACCEPTABLE UNACCEPTABLE
JQI 2/26/85
(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
DAMAGES RECEIVED DURING INSPECTION).

II. FIELD ENGINEERING WIRE ROPE CONDITION EVALUATION
INITIAL & DATE FOR PRELOAD TEST & POST-LOAD TEST.

AUXILIARY HOIST WIRE ROPE USE-AS-IS REPLACE
JQI 4/9/85 JQI 2/24/85

(PRE-LOAD TEST)
FIELD ENGINEER'S SIGNATURE

(POST-LOAD TEST)

DATE 2-26-85

DATE 4-9-85

- REREVE WIRE ROPE ON DRUM. ^{ENSURE WIRE ROPE PROPERLY SEATS ON DRUM. max antitension of 5 lbs 12/10/69}
NOTE: LUBRICATION OF THE WIRE ROPE MAY BE PERFORMED AT THIS TIME IF ROPE IS FOUND TO BE ACCEPTABLE FOR USE (REFERENCE UWI 4370-3100-84-C1X06).
- REMOVE MOORING WHICH SECURED EIGHT-PART LOAD LINE AT ELEVATION 347' AFTER SLACK IN LEADING LINES HAS BEEN REREVEED.
- CONTINUE REREVEING 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.

UW 4370-3100-84-663
Attachment 10
Page 1 of 1

ORIGINAL WIRE ROPE DIAMETER

	GEAR CASE SIDE	SUPPORT BEARING SIDE
@ 3/4 DRUM FULL	0.833"	0.828"
@ 1/2 DRUM FULL	0.824"	0.825"
@ 1/4 DRUM FULL	0.828"	0.825"

Measurements taken by: Las P. S. 4/9/85
FIELD ENGINEER

Subject: CORRECTION TO UNIT WORK INSTRUCTION
#4370-3100-84-C663

Date: April 17, 1985
4370-85-6068

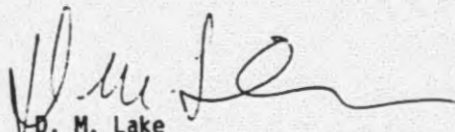
From: Manager, Recovery Operations
D. M. Lake

3-Mile Island, Unit-2
Trailer 105
Location: File: 3006/1625 NR

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.


D. M. Lake
Manager, Recovery Operations

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

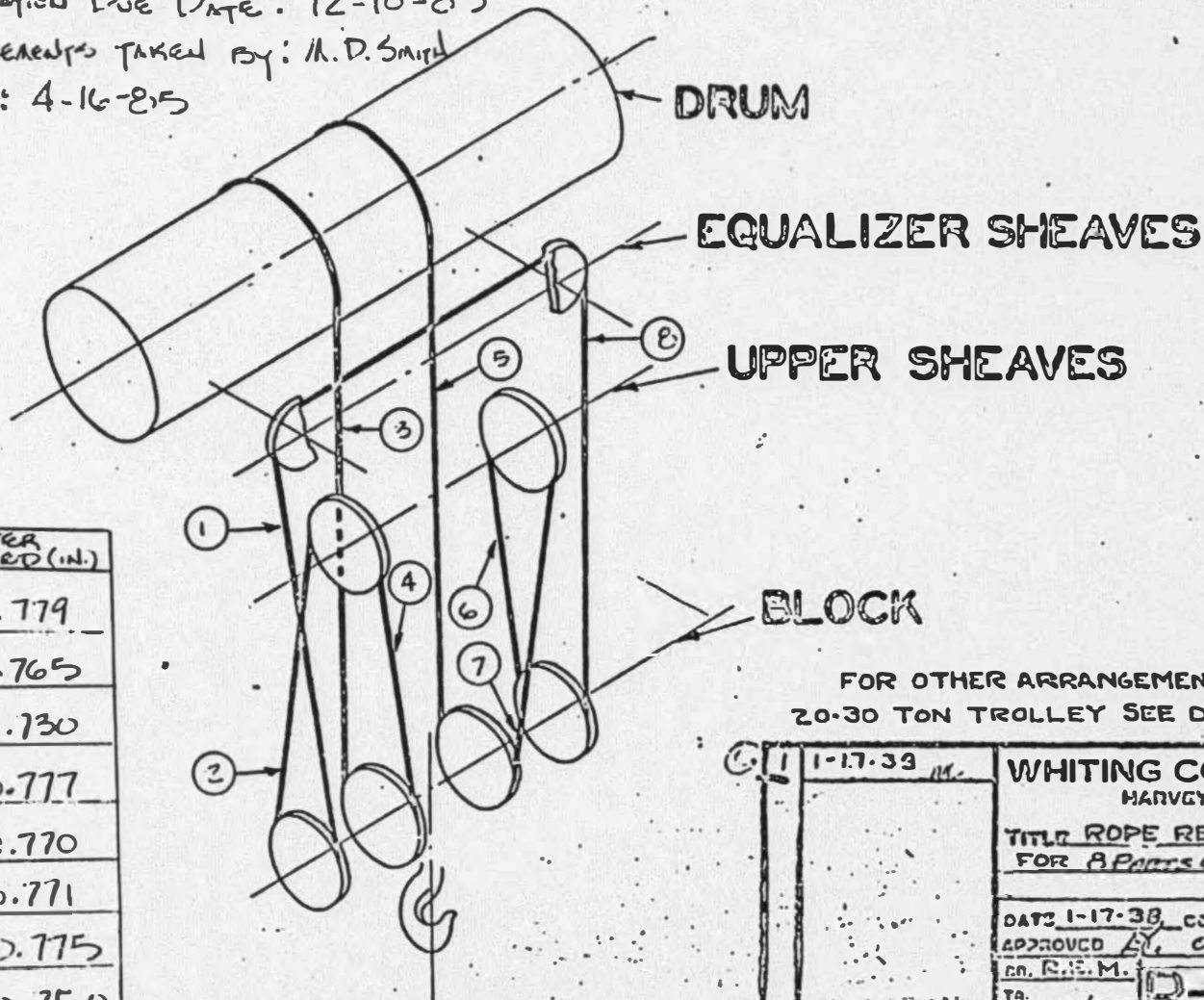
Doc.: 850160a

CALIPER SERIAL No.: QCT 43

CALIBRATION DUE DATE: 12-10-85

MEASUREMENTS TAKEN BY: M.D. Smith

DATE: 4-16-85

DIAMETER
MEASURED (IN.)

①	0.779
②	0.765
③	0.730
④	0.777
⑤	0.770
⑥	0.771
⑦	0.775
⑧	0.750

FOR OTHER ARRANGEMENT OF REEVING
20-30 TON TROLLEY SEE DRG. NO. R-13690

DATE 1-17-39	WHITING CORPORATION HARVEY, ILLINOIS 50
	TITLE ROPE REEVING DIAGRAM FOR 8 PARTS OF ROPE
DATE 1-17-39	SCALE — ONE FT.
APPROVED BY <i>MS</i>	
EN. R.E. M.	
IS. <i>✓</i>	R-13689

UNIT

WORK INSTRUCTION

85-28704
Issued 3/13/85

4370-3100	89	Rel 1
UWI Number		RS

4370-72331

Work/Sub Order No.

GPU Nuclear

Dept/Section	Type	Area/Location	Category	Other Requirements	Tech Spec Related
Plant Ops ()	SOP ()	Building <u>Reactor II</u>	NITS <u>X</u>	ECA <u>4A</u>	Yes <input type="checkbox"/>
Maintenance ()	TCN ()	Elevation <u>347'</u>	ITS	Other <u>N/A</u>	No <u>X</u>
QC (X)	TCN-2 ()	Grid/Rm <u>N/A</u>	NSR		If Yes, Time Clock
Rad Con ()	WRA (X)	Admin. Bldg. <u>N/A</u>			
Recovery Opns (X)		Other <u>N/A</u>			
Other ()					

Requestor J.Q. Hicks 4370 Date 3-5-85 Ext 8865 Date Required 3-12-85
 Preparer J.Q. Hicks Equip/System POLAR CRANE
 Subject NDE P/C AUXILIARY HOIST HOOK TCN/SOP Cancellation Date _____
 Priority 4A
 Purpose:

REVISE AS DESCRIBED BELOW TO ELIMINATE REMOVAL OF THE AUXILIARY HOIST HOOK FROM THE BOTTOM BLOCK DUE TO INACCESSIBILITY.

Description of Work:

ARN - YES

= NO

-REVISIONS REQUIRED:

1. ELIMINATE (DELETE) LINE ITEMS 15, 30, AND ATTACHMENT 3.
2. PERFORM NDE ON THE HOOK SECTION SHOWN ON ATTACHMENT 6.

8504240228 850418
PDR ADOCK 05000320
PDR

LEAD ENG

Supt.

Safety

- ALL OTHER WORK DESCRIBED PER REVISION 0 SHALL REMAIN UNCHANGED.

APPROVAL TO COMMENCE WORK: Responsible Supervisor EACWray Time 0900 Date 3-21-85

CONCURRENCE:

Cog Engineer <u>U. G. Smith</u>	Date <u>3/5/85</u>	SWE <u>WIR</u>	Date _____
RTT <u>U. G. Smith</u>	Date <u>3/6/85</u>	NRC <u>WIR</u>	Date _____
SRG <u>WIR</u>	Date _____	FE <u>E. (Bud) Martin</u>	Date <u>3/12/85</u>
QA <u>B. Smith</u>	Date <u>3/7/85</u>	APPROVAL	
Rad Con <u>B. Smith</u>	Date <u>3/11/85</u>	Cog Manager <u>B. Smith</u>	Date <u>3-11-85</u>
SRO <u>WIR</u>	Date _____	Site Ops. Dir. <u>B. Smith</u>	Date <u>3/12/85</u>

UWI COMPLETE:

Individual <u>B. Smith</u>	Time <u>0800</u>	Date <u>4-10-85</u>	Page _____
Responsible Supervisor <u>B. Smith</u>		Date <u>4-10-85</u>	of _____
P. D. Supervisor <u>B. Smith</u>		Date <u>4-10-85</u>	
Cog. Engineer <u>B. Smith</u>		Date <u>4/10/85</u>	

4370-72831

Work/Sub Order No

GPU Nuclear

UNIT
WORK INSTRUCTION

12/19/84 84-30313

4370-3100 EA C660

UWI Number

59048

Dept/Se Won	Type	Area/Location	Category	Other Requirements	Tech Spec Related
Inst Op ()	SOP ()	Building <u>Reactor II</u>	NITS <u>X</u>	ECA <u>N/A</u>	Yes <input type="checkbox"/>
Maintenance ()	TCN ()	Elevation <u>347</u>	ITS	Other <u>N/A</u>	No <input checked="" type="checkbox"/>
QC ()	TCN-2 ()	Grid/Rm <u>N/A</u>	NSR		If Yes, Time Clock
Rad Con ()	WRA <u>208</u>	Admin. Bldg <u>N/A</u>			
Recovery Ops ()		Other <u>N/A</u>			
Other ()					

Requestor L. G. Hicks 4370 Date 11-16-84 Ext. 8865 Date Required 11-30-84
 Preparer L. G. Hicks Equip/System POLAR CRANE
 Subject NDE AUXILIARY HOIST HOOK TCN/SOP Cancellation Date N/A
 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 PERFORMED PER SECTION 10-11.6 OF THE 1982 EDITION OF THE ASME CODE (REFERENCE ATTACHMENT 1).
 ANSI B30.10-1982A AS APPLICABLE (REFERENCE ATTACHMENT 1).

ARN 4680-2731235
 CATEGORY 1 3/485

Lead Eng L. G. Hicks 11/17/84
 Supt. W. H. Smith 11/17/84
 Safety W. H. Smith 11/17/84

APPROVAL TO COMMENCE WORK: Responsible Supervisor

Time

Date

CONCURRENCE:

Cog. Engineer <u>L. G. Hicks</u>	Date <u>11/17/84</u>	SWE <u>NRH</u>	Date
PMR <u>M. D. Smith</u>	Date <u>11/17/84</u>	NRC <u>NRH</u>	Date
SRG <u>NRH</u>	Date		Date
QA <u>NRH</u>	Date <u>12/15/84</u>	APPROVAL	
Red <u>NRH</u>	Date <u>12/15/84</u>	Cog. Mgr. <u>W. H. Smith</u>	Date <u>12-14-84</u>
SRO <u>NRH</u>	Date	Site Ops. Dir. <u>W. H. Smith</u>	Date <u>12/15/84</u>

UWI COMPLETE:

Individual <u>L. G. Hicks</u>	Time <u>0900</u>	Date <u>4/10/85</u>
Responsible Supervisor <u>W. H. Smith</u>		Date <u>4/10/85</u>
P. D. Supervisor <u>W. H. Smith</u>		Date <u>4-10-85</u>
Cog. Engineer <u>L. G. Hicks</u>		Date <u>4/10/85</u>

Page 1
 of 7

A0001960

PRE-LOAD TEST NDE RESULTS

I. VISUAL EXAMINATION PERFORMED IN ACCORDANCE WITH
ANSI B30.10-1982:

AUXILIARY HOIST
LOAD HOOK

RJK 3/26/85
ACCEPTABLE

UNACCEPTABLE

COMMENTS: _____

II. MAGNETIC PARTICLE EXAMINATION PERFORMED IN
ACCORDANCE WITH PROCEDURE G110-QAP-7209.01
(AC YOKE METHOD): ACCEPTANCE CRITERIA: NO CRACKS
OR LINEAR INDICATIONS.

AUXILIARY HOIST
LOAD HOOK

RJK 3/26/85
ACCEPTABLE

UNACCEPTABLE

added per telecon
w/ M. Ziesie 3-26-85 gm
BW 4-4-85

COMMENTS: _____

INSPECTOR(S):

RJK
QCE 12/5/84

3/26/85
DATE

QCE
QCE 12/5/84

DATE

POST-LOAD TEST NDE RESULTS

I. VISUAL EXAMINATION PERFORMED IN ACCORDANCE WITH
ANSI B30.10-1982:

AUXILIARY HOIST
LOAD HOOK JQH 4/10/85
ACCEPTABLE

UNACCEPTABLE

COMMENTS: - SEE ATTACHMENT 8 FOR QCPIR

II. MAGNETIC PARTICLE EXAMINATION PERFORMED IN
ACCORDANCE WITH PROCEDURE 6110-QAP-7209.01
(AC YOKER METHOD): ACCEPTANCE CRITERIA: NO CRACKS
OR LINEAR INDICATIONS.

AUXILIARY HOIST
LOAD HOOK JQH 4/10/85
ACCEPTABLE

added per Nelson et al, 21010
3/4/85 m DBW 4.4-85

UNACCEPTABLE

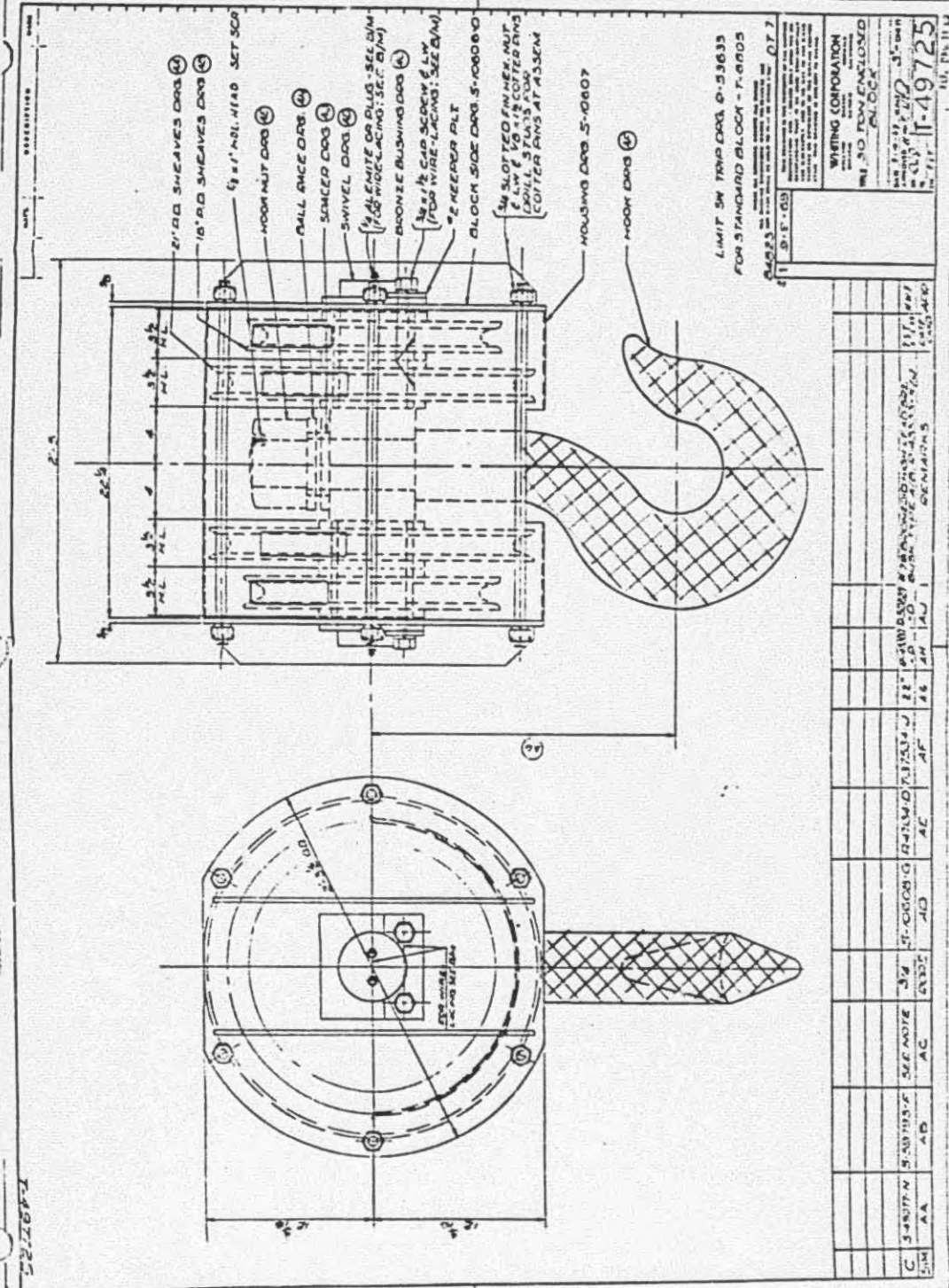
COMMENTS: - SEE ATTACHMENT 8 FOR QCPIR

INSPECTOR(S): - SEE ATTACHMENT 8 JQH 4/10/85
QCK 6/10/85

DATE

QCK 6/10/85
12/5/84

DATE



U/I 4370-3100-85-660
 Revision 1 84 ms
 Attachment 6
 Page 1 of 1

- Perform NDE on this section
 of tile aux. box only

1. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									
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6. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									
7. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									
8. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									
9. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									
10. 3.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N 5.4017 N AA AB AC AD AE AF AG AH AI AJ									

LIMIT 3M TRAP DOG 0-53635
 FOR STANDARD BLOCK - F-8005

WATKINS CORPORATION
 101 50 POWERHOUSE
 BLOCK

1-49725

QUALITY ASSURANCE MODIFICATIONS/OPERATIONS
QUALITY CONTROL PLANT INSPECTION REPORT

Attachment 7

Page 1 of 3

Unit No. IME 2 Inspector KANDY KA PIR No. WE43153/BS
Inspection Description Pre / post Visual & MT Date of Inspection: 3/21/95
OF AUV - CRANE Hook

Method: Visual: ☒ Direct Measurement: ☐ Document Review: ☐ Other: ☒

References:

① UNIT 4370-3100-04 ^{Title} C660

Rev.	Date	Verified
1	3/13/85	125/14

[illegible]

[illegible]

Nutrition and Test Environment Used

Identification of Equipment	Serial No.	Range		Accuracy		Calibration Date Due
		Recd	Used	Recd	Used	
Control Thermometer	001 709	N/A	10-250	N/A	± 10%	5/23/25

MR. TAYLOR: Yes ☐ 2 ☒

QCR Issued: Yes ☐ No ☒

[illegible]

ငမ္မဒိ/ငမ္မဒိ နိဗ္ဗာန်သိက္ခာ

128791 ETC 5/26/05

Page: 3 Feb 1955

Received of Arthur J. [unclear] the sum of 100.00

34112

Distribution () Message Admin. and Services Unit (Orig.)
 () Distribution Section
 () Message
 ()

6 1 2 3 4 5 6 7 8 9 10 11 12
 ()
 ()
 ()



Dye Penetrant/Magnetic Particle

Attachment 7

Page 3 of 3

Site: <u>TMT 2</u>	Task: <u>Preload MT</u>	Test Method: <u>Magnetic Particle</u>	Component: <u>Auxiliary Hook</u>
Description: <u>Pre-load TEST Aux Hook Containment #2</u>			
Drawing: <u>T-49725 (Lifting. Gsp)</u>	Procedure: <u>6110-GAR-702ul</u>	Material: <u>C/S</u>	PIR: <u>W43753/05</u> Date: <u>3/19/85</u>
Examiner: <u>12.2 K</u>	Level: <u>III</u>	Notes: <u>ACCEPTANCE</u> <u>UWI 4370-3100-84/-</u> <u>C660 R0</u>	
Examiner: <u>N/A</u>	Level: <u>N/A</u>		
Magnetic Particle (Dry) Particle: <u>Color <u>Red</u></u> <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry Batch: <u> </u> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Fluorescent Thermometer: <u>92.29</u> Instrument: <u>Temp <u>51.0</u></u> Method: <u>Yoke</u> Current: <u>AC</u> Machine: <u>Peak Probe</u> Amperes: <u>B</u>		Dye Penetrant (Only) Cleaner Batch: <u> </u> Penetrant Batch: <u> </u> Temp: <u> </u> Developer Batch: <u> </u> Method: <u> </u> <input type="checkbox"/> Visible Thermometer: <u> </u> <input type="checkbox"/> Fluorescent Temp: <u> </u>	

[illegible]

QUALITY ASSURANCE MODIFICATIONS/OPERATIONS
QUALITY CONTROL PLANT INSPECTION REPORT

PIR No. WF43186/85

Date of Inspection: 4/4/05

References:

157.

Date

Vorleser

⊥

3/4

128

[illegible]

Item Identification (e.g., Make, Model, etc.)	Quantity/Location	Inspector/Collector	Item Status (e.g., Seized, etc.)	DATE	TIME	UNIT

Inventory and Asset Equipment Used

Identification of Equipment	Serial No.	Range		Accuracy		Calibration Date Due
		Read	Used	Read	Used	
UNIVERSAL TRANSDUCER	100-100	N/A	10-150	N/A	10-150	5/1/85
MAG. VOL.	0-1000	N/A	N/A	N/A	N/A	6/1/85

Item Issued: Yes ☐ No ☒ Item Issued: Yes ☐ No ☒

Item No.	Date	Reason for Issue	Hold/Cont. Release Tag No. Issued

Comments/Other Information:

Inspected by: R. G. KIRBY (R. KAY)
Inspected and signed by: S. M. L. V. S. L.

Date: 4/4/85
Date: 4-10-85

Distribution: () Manager, Admin. and Services Unit: (Orig.)
() CA. Mod/Ops Manager
() CO. Manager
() S/O
Others: () WIDE Distribution 5-227
() _____

6110-QAP-7210-02-1 (1-85)

NDE

Attachment 8
Page 3 of 3

Site: <u>TMT 2</u>	Task: <u>Post Load test</u>	Test Method: <u>MAG. Particle</u>	Component: <u>Auxiliary Crane Hook</u>
Description: <u>Post Load MAG. test Auxiliary Crane Hook - Containment 2</u>			
Drawing: <u>T-49725 (Whiting Corp)</u>	Procedure: <u>610-GAP 704-01</u>	Material: <u>C/S</u>	PIR: <u>WE43186/85</u> Date: <u>4/4/85</u>
Examiner: <u>R. F. Kay</u>		Level: <u>III</u>	Notes: <u>Acceptance Criteria</u> <u>UWI 4370-3100-84-</u> <u>C660 R.O</u>
Examiner: <u>N/A</u>		Level: <u>N/A</u>	
Magnetic Particle (Only) Particle: <u>Color</u> <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry <u>Batch</u> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Fluorescent <u>Thermometer</u> Instrument: <u>Temp</u> Method: <u>Yoke</u> Current: <u>RAMP AC</u> Machine: <u>QCT 627</u> Amperes: <u>8000</u>		Dye Penetrant (Only) Cleaner Batch: # _____ Penetrant Batch: # _____ Temp: _____ Developer Batch: # _____ Method: <input type="checkbox"/> Visible Therm meter: _____ <input type="checkbox"/> Fluorescent Temp: _____	

[illegible]

William L. Allen



Memorandum

Subject: Polar Crane Aux. Hoist Refurbishment
Results

Date: April 17, 1985
4340-85-0405

From: Manager, Site Engineering
R. E. Gallagher

Location: Administration Bldg.

To: Site Operations Director
S. Levin

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:

- o Auxiliary hoist SESA brakes replaced and fully adjusted. Brake drums cleaned and inspected.
- o Hoist completely relubricated and regreased.
- o Tested, repaired or replaced all electrical devices (relays, breakers, contactors, thermal overloads, etc.).
- o Insulation checked on all power wiring.
- o Continuity checked on power and control circuitry to verify circuit integrity.
- o Energized major components utilizing existing circuitry unloaded and/or uncoupled.
- o Repaired/replaced broken, removed or damaged wiring.
- o Clutch plates inspected and cleaned.
- o All couplings checked and verified acceptable.
- o Upper sheave nest, block, and drum inspected.
- o Wire rope replaced.
- o 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-R5-1016 dated April 11, 1985.

Following refurbishment, the auxiliary hoist was successfully load tested in accordance with ANSI 830.2-1983. 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 830.2, 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

^{nos}
DDW/MDS/sdc

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



WHITING CORPORATION

HARVEY, ILLINOIS 60426 U.S.A.
AREA CODE 312-331-4000

April 5, 1985

Mr. R. E. Gallagher
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. 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,

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

RVN:rn

S/B	
ICA	
REC	✓
WE	
TE	
DDN	
JPV	
PM	
RG	
SEC	
10.24.2.8	
FILE	
DATE 4-9	