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MANGAN,C.V. Niagara Mohawk Power Corp.
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VASSALLO,D.B. Operating Reactors Branch 2

SUBJECT: Forwards response to 840406 request for addl info re control of heavy loads,NUREG-0612.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

July 26, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Your December 22, 1980 and February 3, 1981 letters requested information regarding the control of heavy loads at Nine Mile Point Unit 1. Our May 22, 1981, July 28, 1981, September 22, 1981, August 1, 1982, September 30, 1983, November 15, 1983 and December 15, 1983 letters provided the requested information. During a telephone discussion with members of your staff on April 6, 1984, additional information was requested on two items with regard to our aforementioned submittals. Attached is our response to your request for additional information.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan
Vice President
Nuclear Engineering and Licensing

MTG/djm
Attachment

A033
1/1

CONTROL OF HEAVY LOADS, NUREG 0612
NINE MILE POINT UNIT 1
DOCKET NO. 50-220
DPR-63

I. The first open item dealt with special lifting devices. As presented by your staff, the subject of special lifting devices consisted of three areas of interest; design margins, proof of workmanship and a continuing inspection program. Each of these three areas is discussed below.

A. Design Margins

With regard to design margins, members of your staff indicated that Niagara Mohawk had adequately addressed this subject.

B. Proof of Workmanship

Table 1 lists the special lifting devices used at Nine Mile Point Unit 1 with the respective proof of workmanship documentation that is presently available. We are continuing our search to locate the remaining documentation.

C. Continuing Inspection Program

With regard to a continuing inspection program, it is our position that neither an expanded Non-destructive Examination (NDE) Program nor a periodic overload stress test is necessary to provide assurance of the integrity of the special lifting devices. The bases for this is threefold: 1) the thorough visual examination of the special lifting device that is required, by procedure, prior to using the device, 2) the detailed training program that is required of personnel handling the devices, and 3) historically no problems have been encountered using the special lifting devices; some since initial plant startup in 1969.

As stated above, each special lifting device is subject to a thorough and complete visual examination prior to each use. Examples of verification sheets for a visual examination are provided. In addition to the visual inspection, each lifting device is load tested before the movement of a heavy load is commenced. General practice has been to rig the special lifting device to the crane and the load then lift and hold the load (under tension) for several minutes. This practice assures the integrity of the special listing device prior to moving the load. This practice will be reinforced by formally including it in the training program.

As indicated in our September 30, 1983 and November 15, 1983 letters, Niagara Mohawk has a thorough and complete training program for crane operators and riggers consistent with applicable chapters of ANSI B30.9-1971 and ANSI B30.2-1976. This training program provides qualified individuals to perform the visual inspections of the special lifting devices and, therefore, assures the safe handling of the load.

C. Continuing Inspection Program (Continued)

As noted in NUREG 0612, the large majority of accidents are the result of crane operator error and not a result of inadequate design or poor workmanship. This observation can be used as a bases for re-review and, if necessary, upgrading of training programs. However, no bases is provided for assuming significant problems will be encountered in the future as a result of the lack of the type of a continuing inspection program suggested by your staff. An historical evaluation of the lifting devices used at Nine Mile Point Unit 1 was performed. No problems have been encountered while using the special lifting devices. Although not qualitative in nature, this evaluation can be used as a bases for determining the type and frequency of inspections performed on the special lifting devices. If for example, historically (either plant specific or industry) problems had been encountered from failure of special lifting devices, or if frequent replacement or repair of special lifting devices was necessary due to abnormal degradation, then a bases can be provided for instituting a specific type of inspection program. However, if historically no problems have been encountered; if a continuing inspection program is in place using trained and qualified individuals and the devices are used on a very infrequent bases, then there is no bases for changing the type and frequency of inspections.

In addition, specifically with regard to an expanded Non-destructive Examination Program, considerable time, with corresponding additional costs would be required to perform the examinations. This would include items such as surface preparation (i.e. removing paint by grinding or scrapping, etc.) and then repainting before and after each examination. This additional time and cost, based on the current Niagara Mohawk practices with regard to inspections of the special lifting devices, is not warranted.

Based on the above, we believe our current practices constitute an acceptable continuing inspection program and meets the intent of the guidance put forth by the Nuclear Regulatory Commission.

II. The second open item addressed safe load paths associated with the Turbine Building crane. Our November 15, 1983 letter indicated that redundant cable trays were located under the east and west ends of the crane operating floor, and as such, a single load drop would not affect both redundant cables. The location of safe shutdown cables with respect to the Turbine Building crane load paths was re-reviewed. The re-review addressed the possibility of avoiding passing over the floor area above the safe shutdown cables. The review determined that it was not possible to completely avoid passing over the floor area above the cable trays when handling a load. Your staff suggested that since exclusion areas cannot be established a caution should be added to procedures to identify to the crane operator that safe shutdown trays are located below the floor area of the load path. As indicated in our November 15, 1983 letter, procedures relating to Turbine Building load handling operations are not provided. However, as an alternate, we intend to attach a sign inside the crane cab and to the remote pendant cautioning the operators of the existence of the cable trays. We believe that this alternate approach meets the intent of incorporating a caution into a procedure and, therefore, will ensure safe handling operation in the Turbine Building.

TABLE 1

LIFTING DEVICE	DOCUMENTATION
Underwater Lifting Rig	I, II, III & Note 1
"LB-1" Bracket	I, II, III & Note 1
"LB-1A" Bracket	I, II, III & Note 1
Spreader Beam	I, II, III & Note 1
Drywell Head Lifting Assembly	I, II, III, IV
Texas Tower	I, II, III, IV
Vessel Head Lifting Rig	I, II, III, IV
Shield Platform Strongback	I, II, III, IV
Dryer/Separator Sling Assembly	I, II, III, IV (example visual inspection sheet attached)
Portable Radiation Shield	Note 2 (example visual inspection sheet attached)
Tensioner Lifting Assembly	Note 2 (example visial inspection sheet attached)

Documentation Types

I Design Specifications
II Material Certification
III Weld Inspection Documents
IV Load Tests

NOTE 1: Documented load tests prior to use cannot be located. These devices were, however, informally load tested by the plant personnel during the initial use of the device. As previously mentioned, the lifting device was attached to the load and tensioned in place for several minutes. Based on the available records of workmanship and design and the procedural controls placed on these lifting devices, Niagara Mohawk believes sufficient assurance is provided that the lifting devices will continue to function as designed.

NOTE 2: Documentation records of workmanship and design cannot be located. However, discussions with personnel from the companies which fabricated the lifting devices assure us that they were designed to applicable codes existing at that time and fabricated to standard shop practices. Niagara Mohawk will pursue load testing in accordance with ANSI N14.6-1978, Section 5.3.1.1. In addition, an engineering evaluation has been done on the devices that concluded adequate design margins are present.

EXAMPLE VERIFICATION SHEET

NINE MILE POINT NUCLEAR STATION UNIT 1
VERIFICATION SHEET

ITEM: Steam Dryer & Moisture Seperator Slings & Lifting Assembly
706E890PT1

DATE

FIG. NO. MP-1.4-11 &
MP-1.4-12 & MP-1.4-13

VERIFIERS NAME

EQUIPMENT PIECE: LIFTING ASSEMBLY

	VISUAL CHECKS REQUIRMENTS	UNACCEPTABLE CRITERIA	MAINTENANCE UNSAT	SAT	INITIAL	REMARKS
1	Top Cable Rings (2) Fig. 1.4-11	Bent, cracks				
2	T&B Mech Splices Fig. 1.4-11 (8)	Cracks, wire Rope pulling out				
3	Wire rope (4) Fig. 1.4-11	Frayed, kinks, cuts				
4	Lifting pins (4) Fig. 1.4-11	Bent, missing				
5	Frame Fig. 1.4-11 & 12	Bent, weld failures				
6	Upper & Lower Guides Fig. 1.4-12	Bent, missing				
7	Rack & pinon Fig. 1.4-12	Does not move freely				
8	Actuating Pole Fig. 1.4-13	Bent, weld failures				

Remarks (Additional)

Assistant/ Supervisor

/ Date

EXAMPLE VERIFICATION SHEET

NINE MILE POINT NUCLEAR STATION UNIT I
VERIFICATION SHEET

ITEM: PORTABLE RADIATION SHIELD LIFTING ASSEMBLY

DATE

FIG. NO. M.P. 1.1-9

VERIFIER'S NAME

EQUIPMENT PIECE: LIFTING ASSEMBLY

	VISUAL CHECKS REQUIREMENTS	UNACCEPTABLE CRITERIA	MAINTENANCE UNSAT SAT INITIAL	REMARKS
1	RINGS (2)	BENT, VISUAL CRACKS		
2	T&B SHACKLES (8)	PINS BENT, MISSING		
3	WIRE ROPE (4)	FRAYED, KINKS, CUTS		
4	LIFTING FRAME(11)	WELD FAILURES, BENT		
5	CONNECTING PINS ON SHIELD	PINS BENT, MISSING, CHAIN UNATTACHED		

REMARKS (ADDITIONAL)

ASSISTANT/SUPERVISOR /DATE

M.P.1.1-8

EXAMPLE VERIFICATION SHEET

NINE MILE POINT NUCLEAR STATION UNIT 1

VERIFICATION SHEET

ITEM: TENSIONER LIFTING ASSEMBLY
REFERENCE BIACH MANUAL FOR 1,680,000 TENSIONER MODEL E161,000

DATE: _____ Fig.No.M.P. 1.2-13

VERIFIERS NAME: _____

EQUIPMENT PIECE NO. TENSIONERS LIFTING ASSEMBLY

	VISUAL INSPECTION		MAINTENANCE			REMARKS
	REQUIREMENTS	UNACCEPTABLE CRITERIA	UNSAT	SAT	INITIAL	
1.	Pear Liuks (1)	Bent, cracks				
2.	Top Mech.Splice(4)	Cracks, dents				
3.	Wire Rope (4)	Frayed, kings, cuts				
4.	Bot Mech.Splice(4)	Cracks, dents				
5.	Bottom Pin & Cotter Key (4)	Bent/missing pins cotter keys missing				
6.	Eyebolts (4)	Bent, missing				
7.	Frame (1)	Bent, weld failure				
8.	Tensioner Support Wire rope (8)	Fray, kniks, cuts				
9.	Mech. Splice (8)	Cracks, dents				
10.	Hooks	Safety clip broken,missing,bent				
11.	Tensioner Eye Bolts (8)	Bent, missing Threads strip				

REMARKS: