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SUBJECT: Forwards final response to Frankling Research Ctr draft technical evaluation rept providing recommendations to achieve compliance w/NUREG-0612,Sections 5.1.1 & 5.3.

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SUBJECT: Forwards final response to tracking research Ctr draft technical evaluation rept providing recommendations to address compliance w/NUREG-0612,Sections 5.1.1 & 5.3.

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NIAGARA MOHAWK

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

November 15, 1983

Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

Dear Mr. Eisenhut:

Our September 30, 1983 letter provided a partial response to the draft Technical Evaluation Report prepared by Franklin Research Center. The draft Technical Evaluation Report provided recommendations to achieve compliance with NUREG 0612, Sections 5.1.1 and 5.3.

The response attached herein addresses the recommendations on Guideline 5(a) for the Reactor Building crane and the evaluation of the Turbine Building crane and load movements against the seven guidelines of NUREG 0612 Section 5.1.1. This letter completes our response to the draft Technical Evaluation Report.

Very truly yours,

T. E. Lempges
Vice President
Nuclear Generation

TEL/MTG:djm
Attachment

A033
1/1

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 1
DOCKET NO. 50-220
DPR-63

I. REACTOR BUILDING

Recommendation (a); Guideline 5

"Verify that the installation and use of slings is in accordance with ANSI B30.9-1971."

Response

Niagara Mohawk uses wire rope with independent wire rope core slings in conjunction with the Reactor Building crane to lift heavy loads up to and across elevation 340 feet of the Reactor Building. A review of ANSI B30.9-1971 Chapter 9-2 Wire Rope indicates that Niagara Mohawk essentially complies with the applicable recommendations of that chapter. In addition, by design, these wire rope slings meet or exceed the requirements of OSHA Standard 29CFR1926.251(c) dated April 1, 1981.

II. TURBINE BUILDING

Recommendation

Evaluate Turbine Building crane 150-ton main hoist/35-ton auxiliary hoist per NUREG 0612 Section 5.1.1.

Response

Each of the seven guidelines is addressed as follows;

1. Safe Load Paths [Section 5.1.1(1)]

   A safe load path is currently being defined for movement of heavy loads with the Turbine Building crane. However, this safe load path will not be incorporated into load handling procedures. A discussion of the safe load path will be incorporated in the training program. It is Niagara Mohawk's judgment that a thorough crane operator training program, when used in conjunction with Turbine Building crane inspection and maintenance procedures provides sufficient assurance that a load drop will not occur. The basis for this judgment is provided below.

There are safety related electrical cables and mechanical equipment in the areas beneath the turbine floor. Safety related cables are located beneath the east and west ends of the Turbine Building crane pickup area. Safe shutdown capability is provided by the cable runs at either the east or west ends of the Turbine Building crane pickup area. Under the pickup area of the crane the cable runs are separated by more than 200 feet. It is unlikely that one drop would disable both trains of redundant systems. Therefore, the ability to safely shutdown and remove decay heat is maintained.

Normal use of the Turbine Building crane is during plant shutdown. During power operation, the crane is used infrequently to move heavy loads. This infrequent use was considered when deciding that safe load paths were not required in procedures.

The crane operator training program is currently being expanded to include a thorough explanation of allowable load paths when handling heavy loads. As part of the training, crane operators are told of areas of turbine building elevation 300 feet that should be avoided during load handling operations. This is a general safe load path for all heavy loads handled with the Turbine Building crane. Since redundancy in shutdown systems is available, this general safe load path training is considered sufficient to mitigate adverse consequences in the unlikely event of a load drop occurrence.

Based on the above, it is Niagara Mohawk's position that equivalent protection will exist (upon completion of the revised training program) to adequately meet the intent of Section 5.1.1(1).

2. Procedures [Section 5.1.1(2)]

Procedures relating to handling operations for heavy loads movement by the Turbine Building crane are not provided. Based on a thorough crane operator training program in conjunction with the redundancy of shutdown systems, it is Niagara Mohawk's judgment that sufficient assurance is provided that an unlikely load drop occurrence will not affect the safe operation or shutdown of the plant.

As stated previously, the training program is currently being expanded to include a review of load handling operations on Turbine Building floor elevation 300 feet. This review will contain, but not be limited to, 1) a general safe load path for movement of heavy loads; 2) stressing areas that should not be traversed; 3) mechanisms for determining appropriate sling selection; and 4) maximum heights from the floor to carry loads, and 5) inspection and acceptance criteria for slings.

Based on the availability of redundant systems and the detailed training program, development of procedures would not significantly enhance the safe handling of heavy loads. It is Niagara Mohawk's position that equivalency to the requirements of Section 5.1.1(2) exists and, therefore, meets the intent of the requirement.

II. TURBINE BUILDING (Continued)

3. Crane Operator Training [Section 5.1.1(3)]

A review of the crane operator training program indicates that the recommendations of ANSI B30.2-1976 Chapter 2-3 are adequately included. This includes a practical exam and physical qualifications consistent with the standard.

Based on the above, the requirements of Section 5.1.1(3) are adequately satisfied.

In addition, the training program is currently being expanded to provide a more detailed, inclusive review of load handling paths, sling selection and procedural movement steps for use of the Turbine Building crane.

4. Special Lifting Devices [Section 5.1.1(4)]

Specially designed lifting devices are used only for lifting certain turbine-generator components. These lifts would only occur during plant shutdown. Since redundancy of shutdown systems is available based on physical distance separation the requirements of 5.1.1(4) are not applicable.

5. Lifting Devices - Not Specially Designed [Section 5.1.1(5)]

The installation and use of slings in conjunction with the Turbine Building crane essentially complies with the applicable guidelines of ANSI B30.9-1971. Discussions with the principal sling supplier have indicated that the requirements of Sections 9-2.2, 9-5.2 and 9-5.3 are essentially complied with. In addition, Niagara Mohawk is revising its rigging and lifting training program to incorporate such items as: 1) assuring that when selecting a sling for a particular load, a minimum factor of safety of five is utilized; 2) effects of temperatures on slings; 3) minimum sling lengths; 4) sling end attachments; 5) storage of slings; 6) sling inspection and replacement; and 7) general safe operating practices. This material has been taken directly from ANSI B30.9-1971. The training program also covers the requirements that the sum of the static and maximum dynamic load be utilized when selecting a sling.

Personnel involved with the use of slings use a rigging handbook and Niagara Mohawk's Accident Prevention Rules, Section 20, in addition to being required to participate in the extensive training program. The rigging handbook and Section 20 of the Accident Prevention Rules include information on; 1) good rigging practices; 2) efficiencies of wire rope connections; 3) safe working loads on various types of slings and sling components; 4) effects of angles on sling loads; 5) pre-use and in-use inspection of slings; and 6) general handling of slings.

The wire rope slings do not have ratings identified on the slings. However, is it Niagara Mohawk's position that physically tagging or marking the slings is not necessary based on the required training program and the information tools available to personnel involved with crane operations.

6. Crane Inspection, Testing and Maintenance [Section 5.1.1(6)]

Inspection of the Turbine Building crane is governed by procedure N1-MPM-SA5, Inspection of Turbine Building Crane. The Turbine Building crane has been classified as a crane not in regular use as outlined in ANSI B30.2-1976, Section 2-2.1.4. For cranes not in regular use, ANSI B30.2-1976 recommends an annual inspection. Regardless of use, the Turbine Building crane is inspected semi-annually, which exceeds the annual requirement of ANSI B30.2-1976. In addition, reinspection is performed prior to use if the crane has been idle for a period of one month or more. This frequency meets the criteria outlined in ANSI B30.2-1976. A review of the inspection procedure indicates that the requirements of ANSI B30.2-1976, Sections 2-2.1.2 and 2-2.1.3, where appropriate, are adequately included.

Our review of ANSI B30.2-1976, Section 2-2.2 indicates that a rated load test is only applicable to "...all new, extensively repaired and altered cranes...." The Turbine Building crane has not been extensively repaired or altered since its installation prior to initial plant startup.

Maintenance of the Turbine Building crane is governed by procedure N1-MP-21.11, Maintenance of Turbine Building Crane (currently in the site internal review process) and N1-MPM-SA5, Inspection of Turbine Building Crane. A review of the maintenance and inspection (preventative maintenance) procedures indicates that the requirements of ANSI B30.2-1976, Sections 2-2.3.1, 2-2.3.2, 2-2.3.3 and 2-2.3.4, where appropriate, are adequately included. For example, the maintenance procedure covers, among other things, the disassembly, inspection, maintenance and reassembly of the bridge and trolley in accordance with the manufacturer's maintenance instructions. The inspection procedure includes provisions to inspect for proper lubrication, electrical and mechanical brake wear and improper adjustment, cables and sheaves for broken strands or sign of wear, examination of hooks for cracks, weld defects, loose nuts and bolts, gears and pinions for broken teeth and proper tooth contact.

7. Crane Design [Section 5.1.1(7)]

The Turbine Building crane is non-safety related. A review of original specifications indicates that the crane was designed to Electrical Overhead Crane Institute (EOCI) Specification No. 61. This standard has since been superseded by Crane Manufacturers Association of America (CMAA) Specification No. 70. The crane vendor was requested to determine if the Turbine Building crane design meets the recommended guidelines or if the intent of the guidelines is adequately satisfied. Based on our review of the applicable recommendations and the vendor review of the crane design, the Turbine Building crane satisfies the intent of Section 5.1.1(7) of NUREG-0612.