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AUTH.NAME AUTHOR AFFILIATION
LEMPGES,T.E. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards response to draft technical evaluation rept assessing conformance w/general load handling guidelines of NUREG-0612,"Central of Heavy Loads ADDL at Nuclear Power Plants," Addl response will be provided by 831115.

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NIAGARA MOHAWK

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

September 30, 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:

Your December 22, 1980 and February 3, 1981 letters requested information regarding the control of heavy loads at Nine Mile Point Unit 1. Our letters of May 22, 1981, July 28, 1981, September 22, 1981 and August 1, 1982 provided the requested information. Attached is the response to the draft Technical Evaluation Report prepared by Franklin Research Center. The Technical Evaluation Report assessed conformance to: 1) the general load handling guidelines of NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants," Section 5.1.1 and 2) the interim protection measures of NUREG 0612, Section 5.3.

The response attached herein addresses the recommendations made by Franklin Research Center on Guidelines 1 through 4, 5 (b, c, and d), 6 and 7 of NUREG 0612, Section 5.1.1. A response to the recommendations on Guideline 5(a) and the evaluation of the Turbine Building crane against the seven guidelines will be provided by November 15, 1983.

Very truly yours,

T. E. Lempges
Vice President
Nuclear Generation

TEL/MTG:djm
Attachment

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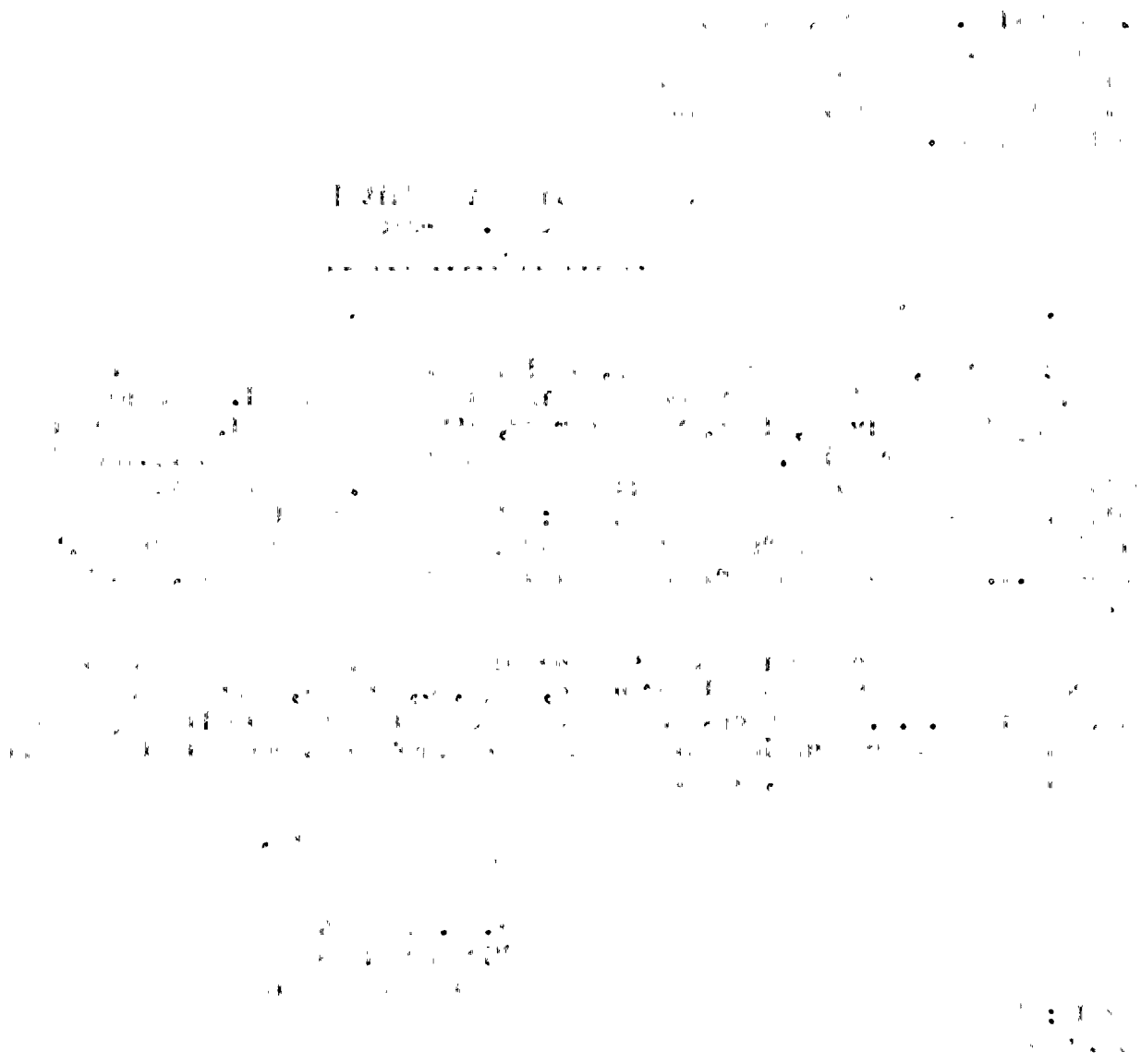

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNIT 1

DOCKET NO. 50-220
DPR-63

Response to Draft Technical Evaluation
Report Prepared by Franklin Research Center
Regarding Conformance to NUREG 0612
Sections 5.1.1 and 5.3

I. INTRODUCTION

By letter dated December 22, 1980 from Mr. D. G. Eisenhut, licensees were requested to review controls for the handling of heavy loads. Our letters dated May 22, 1981, July 28, 1981 and September 22, 1981 provided the information requested in Section 2.1 of Enclosure 3 to your letter. Our August 1, 1982 letter provided the remainder of the information requested in Sections 2.2 and 2.3 of Enclosure 3 to your December 22, 1980 letter.

A draft Technical Evaluation Report (April 30, 1982) was prepared by Franklin Research Center for the Nuclear Regulatory Commission on the responses submitted by Niagara Mohawk regarding Section 2.1 of Enclosure 3 to your letter. This draft Technical Evaluation Report was performed with the following objectives:

1) to assess conformance to the general load handling guidelines of NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants," Section 5.1.1.; and

2) to assess conformance to the interim protection measures of NUREG 0612, Section 5.3.

The draft Technical Evaluation Report provided recommendations for Nine Mile Point Unit 1 to achieve compliance with the seven guidelines established by the Nuclear Regulatory Commission in NUREG 0612, Section 5.1.1. The draft Technical Evaluation Report concluded that Nine Mile Point Unit 1 was in compliance with NUREG 0612, Section 5.3. This submittal provides our partial response to the recommendations formulated in that report.

II. DISCUSSION

1. Safe Load Paths [Guideline 1, NUREG 0612, Section 5.1.1(1)]

"Safe load paths should be defined for the movement of heavy loads to minimize the potential for heavy loads, if dropped, to impact irradiated fuel in the reactor vessel and in the spent fuel pool, or to impact safe shutdown equipment. The path should follow, to the extent practical, structural floor members, beams, etc., such that if the load is dropped, the structure is more likely to withstand the impact. These load paths should be defined in procedures, shown on equipment layout drawings, and clearly marked on the floor in the area where the load is to be handled. Deviations from defined load paths should require written alternative procedures approved by the plant safety review committee."

Recommendations (FRC Draft Technical Evaluation Report, April 30, 1982)

"a. Provide visual aids for operators and supervisors to identify safe load paths."

"b. Verify that deviations from safe load paths are approved in writing by the plant safety review committee."

[illegible]

II. DISCUSSION (Continued)

Response

a. The standard operating practice at Nine Mile Point Unit 1 is to utilize a signalman to ensure that the load paths depicted in the procedures are followed. The signalman provides movement instructions to the crane operator. This standard operating practice satisfies the recommendation requiring visual aids to identify safe load paths as discussed via telecon with members of your staff on October 28, 1982.

b. Section 6.2 of Administrative Procedure APN-1, Procedure for Administrative Controls, details the required actions necessary for approval of deviations, changes, etc., to approved procedures. Temporary changes to approved procedures must be approved by two members of the plant supervisory staff, at least one of whom shall hold a senior reactor operator license on the unit affected. Within seven days of temporary approval, the change must be reviewed by the Site Operations Review Committee and approved by the Station Superintendent and the General Superintendent, Nuclear Generation.

2. Load Handling Procedures [Guideline 2, NUREG 0612, Section 5.1.1(2)]

"Procedures should be developed to cover load handling operations for heavy loads that are or could be handled over or in proximity to irradiated fuel or safe shutdown equipment. At a minimum, procedures should cover handling of those loads listed in Table 3-1 of NUREG 0612. These procedures should include: identification of required equipment; inspections and acceptance criteria required before movement of load; the steps and proper sequence to be followed in handling the load; defining the safe path; and other special precautions."

Recommendations (FRC draft Technical Evaluation Report; April 30, 1982)

"Provide information concerning the provision of procedures for handling spent fuel casks and other heavy loads in the reactor building."

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[illegible]

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II. DISCUSSION (Continued)

Response

A review of heavy loads not previously identified was performed. The following table lists these heavy loads and the applicable procedure(s) that govern their handling.

Heavy Load	Procedure
Spent Fuel Shipping Cask	FHP-16 (currently being revised)
Tensioner Lifting Assembly	MP-1.2
Hydro Cleaner	FHP-1
Jib Crane	FHP-1
Air Sucker	FHP-1
Fuel Channel Shipping Container	FHP-8
Spent Fuel Gates	MP-1.4
Head Stud Rack	MP-1.2
Head Nut & Washer Rack Lifting Assembly	MP-1.2

Each of these procedures includes the following:

a) identification of required equipment (through use of a descriptive sketch);
b) inspections and acceptance criteria required before movement of the load (through use of a checkoff sheet);
c) procedural steps for movement of the load and;
d) descriptive sketches showing the safe load path.

3. Crane Operator Training [Guideline 3, NUREG 0612, Section 5.1.1(3)]

"Crane operators should be trained, qualified, and conduct themselves in accordance with Chapter 2-3 of ANSI B30.2-1976, 'Overhead and Gantry Cranes' [7]."

Recommendation (FRC draft Technical Evaluation Report, April 30, 1982]

"Verify that the training programs include the requirement for a practical operating examination and appropriate physical qualification."

Response

The current crane operator training program includes the requirement for a practical operating exam. This practical examination is given after the operator undergoes detailed classroom instruction. In addition, the operator is required to meet certain physical qualifications before qualifying to train as a crane operator. These physical qualifications are consistent with ANSI B30.2-1976.

II. DISCUSSION (Continued)

4. Special Lifting Devices [Guideline 4; NUREG 0612; Section 5.1.1(4)]

"Special lifting devices should satisfy the guidelines of ANSI N14.6-1978[8], "Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 pounds (4500 kg) or More for Nuclear Materials." This standard should apply to all special lifting devices which carry heavy loads in areas as defined above. For operating plants certain inspections and load tests may be accepted in lieu of certain material requirements in the standard. In addition, the stress design factor stated in Section 3.2.1.1 of ANSI N14.6 should be based on the combined maximum static and dynamic loads that could be imparted on the handling device based on characteristics of the crane which will be used. *This is in lieu of the guideline in Section 3.2.1.1 of ANSI N14.6 which bases the stress design factor on only the weight (static load) of the load and of the intervening components of the special handling device."

Recommendation (FRC draft Technical Evaluation Report; April 30; 1982)

"Complete special lifting device review as soon as practical versus prior to the next scheduled refueling outage."

Response

Our response is provided in Attachment A, Item 2.2.3 of our letter dated August 1, 1982 from Mr. T. E. Lempges to Mr. D. G. Eisenhut.

5. Lifting Devices (Not Specially Designed) [Guideline 5; NUREG 0612; Section 5.1.1(5)]

"Lifting devices that are not specially designed should be installed and used in accordance with the guidelines of ANSI B30.9-1971, "Slings" [9]. However, in selecting the proper sling, the load used should be the sum of the static and maximum dynamic load. The rating identified on the sling should be in terms of the "static load" which produces the maximum static and dynamic load. Where this restricts slings to use on only certain cranes, the slings should be clearly marked as to the cranes with which they may be used."

Recommendation (FRC draft Technical Evaluation Report, April 30, 1982)

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

"b. Verify that sling selection is based on the sum of the static and maximum dynamic loads."

"c. Verify that slings are marked with the static load which produces the maximum static and dynamic load."

"d. Verify that slings restricted in use are properly identified as such."

II. DISCUSSION (Continued)

Response

a. A response to this recommendation will be provided by November 15, 1983.

b,c and d.

Slings used in conjunction with the Reactor Building crane, that are restricted in use to handle specific heavy loads, are properly identified in each load handling procedure. The procedures provide a descriptive sketch of the sling, identification of the particular load it is allowed to handle and a checkoff sheet to assure that the sling is acceptable for use. The sling selection for these loads was made by analysis. The analysis utilized both the static and dynamic loads. Since each sling used in conjunction with the Reactor Building crane is identified in this manner, it is Niagara Mohawk's position that the above described arrangement is an acceptable alternative to marking the slings. In addition, as indicated in ANSI B30.9-1971, physical marking of wire rope slings (type used in conjunction with the Reactor Building crane on the refueling floor) is not required.

6. Cranes (Inspection, Testing and Maintenance) [Guideline 6, NUREG 0612, Section 5.1.1.(6)]

"The crane should be inspected, tested, and maintained in accordance with Chapter 2-2 of ANSI B30.2-1976, Overhead and Gantry Cranes, with the exception that tests and inspections should be performed prior to use where it is not practical to meet the frequencies of ANSI B30.2 for periodic inspection and test, or where frequency of crane use is less than the specified inspection and test frequency (e.g., the polar crane inside a PWR containment may only be used every 12 to 18 months during refueling operations, and is generally not accessible during power operation. ANSI B30.2, however, calls for certain inspections to be performed daily or monthly. For such cranes having limited usage, the inspections, tests, and maintenance should be performed prior to their use.)"

Recommendations (FRC draft Technical Evaluation Report, April 30, 1982)

"a. Provide clarification of crane inspection requirements."

"b. Provide load test data per ANSI B30.2-1976, Section 2-2.2."

"c. Provide additional information to clarify the scope of crane PM programs."

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II. DISCUSSION (Continued)

Response

a. Inspection of the Reactor Building crane is governed by procedure N1-MPM-SA4, "Inspection of Reactor Building Crane." The Reactor Building crane has been classified as a crane not in regular use as outlined in ANSI B30.2-1976, Section 2-2.1.4. The Reactor Building crane is inspected, regardless of use, semi-annually. This frequency 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 are adequately included.

b. 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...". Several years ago the Reactor Building trolley was modified to include a redundant hoisting system. This modification was described in our letters of July 26, 1973 and December 10, 1975. After the modification was complete, a rated load test consistent with ANSI B30.2-1976 was successfully performed.

c. Maintenance of the Reactor Building crane is governed by procedure MP-21.1, "Maintenance of Reactor Building Crane" and procedure N1-MPM-SA4, "Inspection of Reactor 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 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 manufacturers 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 signs of wear, examination of hooks for cracks, weld defects, loose nuts and bolts, gears and pinions for broken teeth, and proper tooth contact.

7. Command Design [Guidelines 7, NUREG -612, Section 5.1.1(7)]

"The crane should be designed to meet the applicable criteria and guidelines of Chapter 2-1 of ANSI B30.2-1976, "Overhead and Gantry Cranes" and of CMAA-70, "Specifications for Electric Overhead Traveling Cranes." [10]. An alternative to a specification in ANSI B30.2 or CMAA-70 may be accepted in lieu of specific compliance if the intent of the specification is satisfied."

[illegible]

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[illegible]

[illegible]

[illegible]

II. DISCUSSION (Continued)

Recommendation (FRC draft Technical Evaluation Report, April 30, 1982)

The draft Technical Evaluation Report stated that the Nine Mile Point plant complies with this guideline. Therefore, no response is required.