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UNITED STATES NUCLEAR REGULATORY COMMISSIONNIAGARA MOHAWK POWER CORPORATIONNINE MILE POINT NUCLEAR STATION, UNIT 2DOCKET NO. 50-410NOTICE OF ENVIRONMENTAL ASSESSMENTAND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from the requirements of 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 2, "Design basis for protection against natural phenomena" to the Niagara Mohawk Power Corporation (the applicant) for the Nine Mile Point Nuclear Station, Unit 2 (NMP-2), located at the applicant's site in Scriba, New York.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The action would provide an exemption from Commission regulations. The exemption would allow the applicant to operate NMP-2 while additional analysis regarding the design of its downcomers is being performed and allow any required hardware modifications to be completed prior to operation following the first refueling outage.

Pursuant to GDC 2 of 10 CFR Part 50, Appendix A, structures, systems and components important to safety shall be designed to withstand the effects of natural phenomena, such as earthquakes, without loss of capability to perform their safety functions. Further, GDC 2 specifically states that the design basis for these structures, systems and components shall reflect appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena.

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The NMP-2 downcomer design is unique in that it does not provide lateral supports at the free ends of the downcomers; i.e. at the bottom, the downcomers are free to move in a plane perpendicular to the downcomers. All other domestic Mark II plants have employed a bracing system to tie the downcomers together at the bottom to prevent free movement of an individual downcomer pipe.

On the basis of the information provided by the applicant in letters dated January 23 and 24, 1986, the staff has concluded that the downcomer design meets the licensing criteria for the upset and emergency conditions, but that the applicant has not adequately demonstrated the design adequacy for the faulted condition. It is this particular load combination for which the applicant has requested a scheduler exemption to allow additional time to perform further analysis.

The applicant's request for this exemption and the basis therefor, are contained in their letter dated February 18, 1986.

The Need for the Proposed Action: This exemption to GDC 2 would allow the applicant to load fuel, test, and operate NMP-2 until the first refueling outage while performing additional analysis on the downcomers and designing and procuring any hardware needed for modifications to the downcomer design. If hardware modifications are needed, they could be performed during the first refueling outage. Without this exemption, fuel load and operation of NMP-2 would be delayed for a significant period (estimated by the applicant to be 6 to 10 months).

Environmental Impacts of the Proposed Action: This exemption would allow operation of NMP-2 until the first refueling outage while the applicant performs an additional analysis on the downcomers. If additional modifications are required to the downcomers, they could be performed during the first refueling outage.

The Commission has evaluated the analysis of the NMP-2 downcomers submitted January 23, 1986, and determined that the design is adequate for the emergency and upset conditions but that the adequacy of the design has not been demonstrated for the faulted condition.

The loads to be considered in the faulted condition include loads resulting from a loss of coolant accident (LOCA) and loads resulting from a safe shutdown earthquake (SSE). Both of these events (LOCA and SSE) would have to occur simultaneously for the downcomer design to be unacceptable. The downcomer design would be acceptable for the loads resulting from either the LOCA or the SSE occurring separately.

In assessing the potential for an environmental impact resulting from this exemption the following items were considered.

- 1) The probability of a LOCA and an SSE occurring simultaneously and independently is very small.
- 2) In a study by Lawrence Livermore National Laboratory¹ the probability of a seismically - induced, double-ended-guillotine break (DEGB) is estimated to be between 2.5×10^{-10} and 5.0×10^{-7} events per plant year at the 90% confidence limit.

¹Holman, G., T. Lo, C. K. Chou, "Pipe Ruptures in BWR Plants", Lawrence Livermore National Laboratory, University of California, presented during the 13th NRC Water Reactor Safety Research meeting, October 1985.

- 3) The material used for the NMP-2 recirculation piping system is Type 316 NG stainless steel which is considered much less susceptible to intergranular stress corrosion cracking (IGSCC); therefore, the probability of having a DEGB is smaller than for piping susceptible to IGSCC.
- 4) The likelihood of the simultaneous occurrence of a LOCA and an SSE is even smaller during the first fuel cycle.

Because of the extremely low probability of a simultaneous occurrence of a LOCA and an SSE during the first fuel cycle, the Commission has determined that there is no significant increase in the probability of a failure of the downcomers, resulting in higher radiological releases, associated with this exemption. Likewise, the relief does not affect non-radiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant radiological or non-radiological environmental impacts associated with the proposed exemption.

Alternate to the Proposed Action: Because the Commission has concluded that there is no measurable environmental impact associated with the proposed exemption, any alternatives to the exemption will have either no environmental impact or greater environmental impact.

The principal alternative to granting this exemption would be to deny this exemption. The applicant would then be required to perform a confirmatory analysis and any needed plant modifications before loading fuel. This would delay plant operation, but it would not reduce the environmental impacts as assessed in the Final Environmental Statement Related to the Operation of Nine Mile Point Nuclear Station, Unit No. 2 dated May 1985 (FES) for the operating plant.

Alternative Use of Resources: The action in the granting of the exemption discussed above does not involve the use of resources not previously considered in connection with the FES.

Agencies and Persons Consulted: The Commission reviewed the applicant's request that supports the requested exemption discussed above. The Commission did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the requested exemption.

Based on the foregoing environmental assessment, we conclude that the requested actions will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the applicant's request for this exemption dated February 18, 1986, which is available for public inspection at the Commission's Public Document Room 1717 H Street, N.W., Washington D. C. 20555 and at the Penfield Library, State University College, Oswego, New York 13126.

Dated at Bethesda, Maryland this 1st day of May 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

Elinor G. Adensam

Elinor G. Adensam, Director
BWR Project Directorate No. 3
Division of BWR Licensing

May 1, 1986

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Docket Files (50-410)

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DOCKET NO(S). 50-410

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SUBJECT: Three Notices of Environmental Assessment and Finding of No Significant Impact for Nine Mile Point Nuclear Station, Unit 2

The following documents concerning our review of the subject facility are transmitted for your information.

- Notice of Receipt of Application, dated _____.
- Draft/Final Environmental Statment, dated _____.
- Notice of Availability of Draft/Final Environmental Statement, dated _____.
- Safety Evaluation Report, or Supplement No. _____, dated _____.
- Notice of Hearing on Application for Construction Permit, dated _____.
- Notice of Consideration of Issuance of Facility Operating License, dated _____.
- Monthly Notice; Applications and Amendments to Operating Licenses Involving no Significant Hazards Considerations, dated _____.
- Application and Safety Analysis Report, Volume _____.
- Amendment No. _____ to Application/SAR dated _____.
- Construction Permit No. CPPR- _____, Amendment No. _____ dated _____.
- Facility Operating License No. _____, Amendment No. _____, dated _____.
- Order Extending Construction Completion Date, dated _____.
- Other (Specify) ~~See above subject.~~ (Notices dated May 1, 1986; April 8 and 11, 1986.)

Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc: See next page

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Nine Mile Point Nuclear Station
Unit 2

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