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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Proposed Changes to Technical Specifications
Regarding Turbine Valve Test Frequency and
Independent Electrical Overspeed Protection
System LCOs and Surveillance Requirements

References:

1. Topical Report WCAP-11525, "Probabilistic Evaluation of Reduction in Turbine Valve Test Frequency."
2. NRC letter to Westinghouse Electric Corp., dated February 2, 1987 (C. E. Rossi to J. A. Martin).
3. NRC letter to New York Power Authority, dated February 26, 1987 (J. D. Neighbors to J. C. Brons).
4. NRC letter to Northern States Power Company, Prairie Island Nuclear Generating Plant, dated February 7, 1989 (D. DiIanni to D. Musolf), Amendments Nos. 86 and 79 to Facility Operating Licenses Nos. DPR-42 and DPR-60 (TAC Nos. 66867 and 66868).

Dear Sir:

Enclosure 1 to this application for amendment to the Indian Point 3 Operating License seeks to reduce the frequency of testing of the Turbine Steam Stop and Control Valves specified in Table 4.1-3 of the Technical Specifications. The evaluation presented in Reference 1 demonstrates that a significant increase in the interval between turbine valve functional tests can be achieved without exceeding the NRC acceptance criteria for the probability of a turbine missile accident (References 2 and 3). Decreased turbine valve test frequency also reduces the likelihood of inadvertent reactor trips, which can occur during the power reduction required to perform the valve tests.

change: LPDR NRC PDR w/out Prop Encl A001

A001
1/1

The Reference 1 topical report was developed as part of a Westinghouse Owners Group (WOG) effort. The report was submitted by Northern States Power in support of a similar Technical Specification change request for the Prairie Island Units. The Prairie Island Units were selected as one of three lead plants for this issue. Reference 4 provides the NRC's review and acceptance of this change for Prairie Island as well as the methodology described in WCAP-11525.

Enclosure 2 to this application for amendment to the Indian Point 3 Operating License seeks to eliminate the limiting conditions for operation (LCOs) and surveillance requirements for the turbine independent electrical overspeed protection system (IEOPS) presently contained in Technical Specification tables 3.5-2 and 4.4-1. The evaluation presented in Reference 1 was performed assuming IEOPS does not exist. The report concludes that even without taking credit for IEOPS, the acceptance criteria for the frequency of turbine missile generation are satisfied based on the current low pressure turbine rotor inspection intervals and turbine valve test frequency of up to 12 months. The dominant faults associated with turbine missile ejection are associated with valve related failures (e.g. steam dump valves fail to open, steam stop/control valves fail to close). Multiple turbine protection actuation trains provide only minimal additional protection since they must ultimately actuate the same valves to preclude an overspeed condition. As the IEOPS provides minimal additional protection, and the probability of missile generation as a result of overspeed events has been demonstrated to more than satisfy the turbine missile acceptance criteria, the Authority believes that LCOs and surveillance requirements for this system are inappropriate.

The periodic testing performed to satisfy the Technical Specification surveillance has resulted in plant trips on at least three separate occasions since 1983. While steps have been taken to minimize such trips, there is always some potential for tripping the unit during on-line testing of any trip actuation system. Risks of unplanned turbine (and reactor) trips due to failures during IEOPS testing are unjustified in view of the minimal reduction in turbine missile probability provided by this system.

Enclosure 3 to this application for amendment to the Indian Point 3 operating license contains revisions to WCAP-11525, Figures 8.2-2, 8.3-5 and Tables 8.2-3, 8.3-1 and 8.3-2. The original figures and tables were based on a maximum overspeed condition of 126%. During the Authority's review of the WCAP, it was noted that the plant licensing basis requires the

postulation of a single failure in the low pressure steam dump system. Such a single failure results in a calculated maximum overspeed of 132%. Accordingly, the conditional probability of missile ejection given the occurrence of design overspeed (Figure 8.2-2) and the total annual probability of turbine missile ejection due to overspeed (Figure 8.3-5) have been recalculated for the maximum overspeed of 132%. The data provided in Enclosures 1 and 2 are based on these revised figures.

Upon implementation of these proposed Technical Specification changes, the methodology contained in WCAP-11525 will establish the licensing basis for limiting the total annual probability of turbine missile ejection. Information on valve failure rate will be included in the plant annual final safety analysis report (FSAR) update. The failure rate information included in the FSAR will be updated at least once every three years. The Authority has been and will continue working with the turbine/turbine valve vendor to maintain a turbine valve failure database for the purpose of tracking changes in valve failure rate. The turbine valve testing frequency probabilistic analysis (by the WCAP-11525 methodology) will be reviewed and reevaluated any time major changes in the turbine system have been made or a significant upward trend in the valve failure rate is identified.

The changes proposed herein are intended to reduce the frequency of equipment testing during power operation. These are but two instances of the type of excessive on-line testing that I discussed in my presentation to the Commission on August 3, 1988 during the annual briefing by NUMARC on plant maintenance. Both Chairman Zech and Commissioner Carr concurred that on-line testing should be minimized if such testing can be shown to be of minimal safety significance. Further, I believe these proposed changes will rectify two instances of frequent testing that are typical of those Chairman Zech has charged the staff with identifying as noted in SECY-88-304.

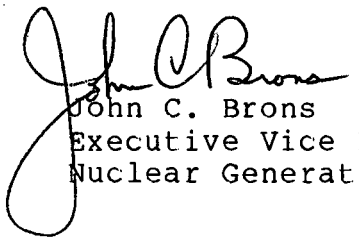
The results of the Reference 1 assessment clearly demonstrate that the applicable acceptance criteria for the probability of turbine missile generation are satisfied for the low pressure rotors presently installed in IP-3. During the cycle 7/8 refueling it is anticipated that these rotors will be replaced with rotors of a superior design. As a result, we anticipate the new rotors will provide a reduction in missile generation probability of at least an order of magnitude.

Enclosed for filing is the signed original document entitled, "Application for Amendment to Operating License," comprising a statement of the proposed changes to the Technical Specifications and the associated Safety Evaluations. (Enclosures I and II, respectively).

In accordance with 10 CFR 50.91, a copy of this application and the associated attachments is being submitted to the designated New York State Official.

Should you or your staff have any questions regarding this matter, please contact Mr. P. Kokolakis of my staff.

Very truly yours,



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