William J. Cahill, Jr.
Vice President

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April 14, 1980

Re: Indian Point Unit No. 2
Docket No. 50-247

Director of Nuclear Reactor Regulation
ATTN: Mr. A Schwencer, Chief
Operating Reactors Branch No. 1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Schwencer:

Attached is our response to your March 5, 1980 request for additional information regarding the Indian Point Unit No. 2 auxiliary feedwater system reliability improvements.

Should you or your staff have any further questions, please contact us.

Very truly yours,

William J. Cahill, Jr.
Vice President

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Attachment

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ATTACHMENT

A. Short Term Recommendations

1. Recommendation (GS-1)

No Comment

2. Recommendation (GS-2)

No Comment

3. Recommendation (GS-3)

The ability of the Auxiliary Feedwater System (AFWS) to supply sufficient water for decay heat removal, with the control valves initially in the throttled position, has been demonstrated numerous times by actual plant operation. The AFWS is normally used for reactor cooldown for a planned plant shutdown as well as for a shutdown caused by a "trip". Since the start of commercial operation there have been approximately 65 trips from between the 90 to 100% power level.

In all of these instances, there have never been any problems associated with decay heat removal.

As noted in our response of December 19, 1979, existing procedures permit the operator to immediately increase the flow rate except in the case where the steam generator feed rings have been uncovered for more than 5 minutes. In the latter instance, flow is throttled for a brief period until the feed ring is full of water. With no feedwater flow to the steam generators there would be at least 30 minutes before the generators would boil dry, which provides more than sufficient time for operator action. In addition, the regulating valves are designed to permit manual operation.

The starting of the AFWS with throttled control valves was reviewed by the Commission in their evaluation of the plant design and operation following a feedwater line break in 1973 caused by waterhammer. The throttled AFWS start-up mode procedure was instituted at that time after an extensive test program demonstrated that waterhammer would be precluded under such conditions. Based on the above, we believe that the successful history of usage of the system with the present procedures, which confirmed the test results, is sufficient evidence of their acceptability.

4. Recommendation (GS-4)

No Comment

5. Recommendation (GS-6)

Administrative and periodic surveillance test procedures have been revised to require independent verification of proper valve alignment following maintenance or periodic testing of the AFW system.

6. Recommendations (GS-7)

No Comment

7. Recommendation (Plant Specific)

No Comment

B. Additional Short Term Recommendations

1. Recommendation No. 1

The design of the redundant Condensate Storage Tank level indication system will meet the following criteria:

a) The new system will be independent of the existing system from the level sensors to the control room indicator. Low level in the tank will be sounded by the existing control room alarm system.

b) The power supply for the new system will be independent of the existing level indication system.

c) The new level indication system, including the power supply, will be designed to safety-grade criteria.

2. Recommendation No. 2

An endurance test on all AFW system pumps will be performed in accordance with the revision to Recommendation No. 2 attached to the Commission's March 5, 1980 letter. We expect to complete these tests by April 30, 1980 and will provide a summary of the conditions and results of the tests by June 16, 1980.

3. Recommendation No. 3

No Comment

4. Recommendation No. 4

The design of the Auxiliary Feedwater System is such that the alignment of only one train need be changed for testing purposes. This design feature along with test procedures and administrative controls, which prohibit removal of more than one AFWS train at the same time, assures the availability of the remaining two trains.

C. Long Term Recommendations

1. Recommendation (GL-2)

In lieu of redundant valves, we will install a position indication system for the two manual valves between the Condensate Storage Tank and the auxiliary feedwater pump suction manifold. The position indication system while not classified as safety-grade will be designed to meet safety-grade environmental and electrical criteria. Two separately mounted position indication switches will be located on the stem of each valve. One of the position switches on each valve will actuate individual valve position status lights in the central control room (CCR). The second position switch on each valve will actuate the existing CCR alarm system via a new visual category alarm trouble light in the CCR should either of their respective valves not be open. The wiring for the individual valve status lights will be routed independently of the wiring for the category alarm/indication. These proposed modifications are conceptually similar to the modifications made in 1976 to certain engineered safeguards valves to satisfy the requirements of 10 CFR Part 50, Appendix K, and NRC Branch Technical Position EICSB-18.

Procedures will be instituted requiring that the auxiliary feedwater pumps be placed in the manual start mode in the event of an alarm indicating that one of the valves is not in the open position. The Auxiliary Feedwater System will be maintained in the manual start mode until the valve is returned to its open position or that it has been verified that the valve is open.

In addition, a proposed technical specification change will be submitted to the NRC to require that if one of the two valves is not open, then, within one hour, either the valve shall be reopened or the valves from the alternate city water supply shall be opened and the system restored to the automatic mode. If this requirement cannot be met, then the unit shall be placed in the hot shutdown condition utilizing normal operating procedures. If the above requirement cannot be met within an additional 24 hours, the unit shall be brought below 350°F utilizing normal operating procedures.

2. Recommendation (GL-5)

Recommendation GL-5 is identical to the long-term requirements of TMI-2 Lessons Learned Task Force Recommendation 2.1.7a. In our October 17, 1979 and November 20, 1979 responses to Recommendation 2.1.7a, we indicated our original intention to provide all auto-start signals to all three AFW pumps as part of the upgrading of the AFWS automatic initiation signals and circuits to meet safety-grade requirements. However, based on the recommendations made by the NRC's Bulletins and Orders (B & O) Task Force as a result of their plant-specific AFWS reliability evaluation for Indian Point Unit No. 2, the additional auto-start signals would not significantly improve the reliability of the AFWS. Accordingly, we now plan to maintain the existing automatic initiation signals to the three AFW pumps as described in the (B & O) Task Force Report and will upgrade their respective circuits to meet safety-grade requirements. This

will also render the Indian Point Unit No. 2 design consistent with the present safety-grade design of the Indian Point Unit No. 3 AFWS.

3. Recommendation (Plant Specific No. 1)

No Comment

4. Recommendation (Plant Specific No. 2)

The design for independent power supplies to the valve position controllers will be provided to the Commission, for their review, prior to January 1, 1981.

D. Basis for AFW System Flow Requirements

The Auxiliary Feedwater System design basis information requested by the Commission is being prepared by the N.S.S. supplier (Westinghouse). Based on their schedule for completion of the study, it is anticipated that this information will be available for submission to the Commission by August 11, 1980.