William J. Cahill, Jr.
Vice President

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April 2,1980

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:

In response to your February 27, 1980 letter, Attachment A to this letter provides the additional information regarding the overpressure protection system installed at Indian Point Unit No. 2.

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

Very truly yours,

William J. Cahill, Jr.
Vice President

attach.

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Attachment A

Staff Request 1: Overpressure Protection

By letter dated January 9, 1979, you proposed an amendment to the Technical Specifications for the overpressure protection system. Submit your determination of the inaccuracies of the instruments used in the PORV setpoint determination and actuation to ensure that the peak pressure following a postulated overpressure transient does not exceed Appendix G limits.

Response:

In order to develop the overpressure protection system (OPS) setpoint limit curve for the technical specifications, the bare isothermal Appendix G curve was used. The maximum calculated pressure overshoot above the OPS pressure setpoint as a function of temperature was then determined from the generic Westinghouse overpressure transient analyses as they were applied to Indian Point Unit No. 2. The maximum pressure overshoot values were then subtracted from the Appendix G curve limiting values and a maximum OPS setpoint curve was developed. This curve is what appears as Figure 3.1-3 in the January 9, 1979 technical specification change application. The proposed curve is acceptable since the addition of the maximum calculated pressure overshoot to the limiting setpoint value from the curve does not result in exceeding the Appendix G limits. The actual plant OPS setpoint curve is set sufficiently below the proposed technical specification curve such that possible instrumentation errors are conservatively accounted for (i.e., maximum upward drift due to instrumentation error will not result in a violation of the proposed OPS setpoint limit curve).

Significant conservatism exists in the development of the plant setpoint curve. In determining the technical specification setpoint limit curve, the maximum calculated pressure overshoot values were subtracted from the Appendix G limiting values as discussed above. The plant specific

study for Indian Point Unit No. 2, from which the maximum calculated pressure overshoot values were derived, removed some of the excess conservatisms of the generic study but did not remove all of the conservatisms. Although the results of the plant specific study more truly represent the realistic cases which could occur at Indian Point 2 (as compared to the generic cases), more exact plant specific modelling would be expected to yield even more favorable results. Therefore, calculated maximum overshoot values for Indian Point 2 are conservative assessments of what actual pressure overshoot values would be. The following are examples of conservative differences between the generic cases and the Indian Point 2 plant specific cases which have not been taken credit for:

	Parameter	Generic	Indian Point 2
1.	Mass Input Case:		
(a)	S.I. Pump Starting Time (sec)	1.64	3.7 (calculated)
2.	Heat Input Case:		
(a)	R.C. Pump Starting Time (sec)	9-10	15-20 (best estimate from operating experience).
(b)	PORV Opening Time (sec)	3.0	1.5 (surveillance acceptance limit). < 1.0 (actual measured time).
(c)	Steam Generator Secondary Water Volume (ft^3)	3,580	2,447 (actual volume)

Another conservatism is incorporated by the allowance made for instrumentation error. At the minimum temperature of 80F, a 20 psi instrumentation error allowance results in an actual plant OPS setpoint 20 psi below that required by the proposed OPS setpoint limit curve

of Figure 3.1-3. This is the minimum instrumentation error allowance factored into the actual OPS operation since as temperature increases so does the actual instrumentation error allowance provided. Furthermore, the actual instrumentation error is expected to be less than 20 psi at any temperature. The actual total OPS instrumentation inaccuracy has been calculated to be ±8.25psi (SRSS) and ±17.25psi (Absolute Summation). The individual components contributing to the total error are listed below:

	Component	Accuracy
(a)	R/I Converter	±0.2%
(b)	I/I Converter	±0.35%
(c)	Signal Characterizer	±0.25%
(d)	Alarm Unit	±0.1%
(e)	Pressure Transmitter	±0.25%

Therefore, it can be seen that even where the instrumentation error allowance is a minimum, the actual system calculated error, even if determined by absolute summation, is more than sufficient to preclude violation of the proposed technical specification setpoint limit curve.

In summary, the proposed OPS setpoint limit curve (Figure 3.1-3) is acceptable as a technical specification setpoint limit since adherence to it will conservatively preclude exceeding Appendix G limits. In addition, the actual plant setpoint curve very conservatively compensates for possible instrumentation inaccuracies to preclude violation of the technical specification setpoint limit curve.