

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

September 17, 1979

Re: Indian Point Unit Nos. 1&2
Docket Nos. 50-3 & 50-247

Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. Grier:

Your letter dated August 13, 1979 enclosed IE Bulletin 79-21 which requires certain action with regard to PWR power reactor facilities with operating licenses. Specifically, the Bulletin required a review of the liquid measuring systems within containment to determine if the signals are used to initiate safety actions or are used to provide post-accident monitoring information and the effect of post-accident ambient temperatures on the indicated water level.

With respect to Indian Point Unit No. 1, the unit was shutdown on October 31, 1974 and is presently in the defueled condition awaiting a decision by the Company whether or not to install an emergency core cooling system in accordance with the Commission's regulations. The information requested in the Bulletin will be provided if an affirmative decision is reached to return the unit to service.

With respect to Indian Point Unit No. 2, we have completed the required review. The results of this review are as follows:

Steam Generators

1. Level indication and control signals for each nuclear steam generator are derived from four level transmitters (each of the reference type). The reference legs for these transmitters are of the open column type. The first three are narrow range transmitters and are used for indication and control while the fourth is used for wide range indication only. The outputs from the three narrow range transmitters are used in the development of the low-low level reactor trip.

In Westinghouse's June 22, 1979 letter (NS-TMA-2104) to Mr. Victor Stello, it was stated that in the case of a feedline rupture, an adverse environment could be present and could delay or prevent the primary signal arising from steam generator water level (low-low steam generator level). Westinghouse recommended a change in the allowable water level trip set point to accommodate a potential temperature-induced bias which could result from containment temperatures up to 280°F (see attached Table 1). The conservative assumption of 280°F would result in a 10% temperature-induced bias. Since initial startup, Indian Point Unit No. 2 has operated with

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the low-low steam generator level reactor trip set at 15% of span versus the 0% of span assumed in the accident analysis (the technical specification requirement is $\geq 5\%$ of span). The existing 15% margin is more than adequate to accommodate a potential 10% temperature-induced bias and therefore, no steam generator water level trip setpoint change is required. In addition, the reactor would actually be tripped considerably earlier (prior to the ambient containment temperature reaching 280°F) since the high containment pressure trip is set at ≤ 2 psig which (based on a review of steamline break analysis) corresponds to an expected containment temperature of less than 170°F and, therefore, a potential temperature-induced bias of less than 4% of span.

2. With regard to post-accident recovery actions, our existing procedures already require that the steam generator levels be maintained between 35% and 65% of span thus assuring that the steam generator tubes are fully covered and the steam generators are not water solid. This required range is more than adequate to compensate for any potential temperature-induced bias (see attached Table 2). On this basis, we feel that no further instructions or guidance to the operators is necessary.

Pressurizer

1. Three sets of level taps are provided on the pressurizer. A total of four level transmitters are provided. Three of these are used to generate signals for reactor protection, reactor control, anticipatory alarms and indication. The fourth level transmitter, which shares a common set of level taps with one of the three above, is calibrated for cold water and is used for low temperature indication during the initial phase of start-up, the initial phase of refueling and the final phase of shutdown. The first three transmitters employ a sealed reference leg while the fourth transmitter utilizes an open column reference leg.

Since pressurizer low water level is not utilized to initiate any safety actions, no action is necessary.

2. With regard to post-accident ambient conditions, Westinghouse has calculated that a postulated 280°F containment temperature would result in a potential 15% temperature-induced bias due to heatup of the sealed type reference leg. We are evaluating whether or not any of our post-accident monitoring procedures are impacted by this effect. Any necessary procedural revisions and retraining of operators will be completed by December 17, 1979.

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

Very truly yours,



William J. Cahill, Jr.
Vice President

cc: Office of Inspection and Enforcement
Division of Reactor Operations Inspection
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. T. Rebelowski, Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 38
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TABLE 1

Correction to indicated steam generator water level for Reference Leg Heatup effects due to post-accident containment temperature (before reactor trip)

<u>Maximum containment temperature Reached before reactor trip, °F</u>	<u>Correction to S/G Level, % of Span</u>
90°	0%
200°	4%
280°	10%
320°	13%
400°	20%

BASIS:

Level Calibration Pressure \leq 1000 psia

Reference Leg Calibration Temperature \geq 90° F

Height of Reference Leg \leq 1.1x Level Span

TABLE 2

Corrections to allowable indicated steam generator water level for Reference Leg Heatup and Pressure changes following a high-energy line break, to assure that true level is between the level taps

<u>Containment Temperature °F</u>	<u>Correction To Minimum Allowed Indicated Level, % of Span</u>	<u>Corrections To Maximum Allowed Indicated Level, % of Span</u>
90°	+1	-4
200°	+6	-4
280°	+11	-4
320°	+14	-4
400°	+21	-4

BASIS:

Level Calibration Pressure ≤ 1000 psia

Reference Leg Calibration Temperature $\geq 90^\circ\text{F}$

Height of Reference Leg $\leq 1.1 \times$ Level Span

Pressure ≥ 50 psia

Pressure ≤ 200 psi + Calibration Pressure

Boiling in the Reference Leg is not assumed.