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July 19, 1993

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

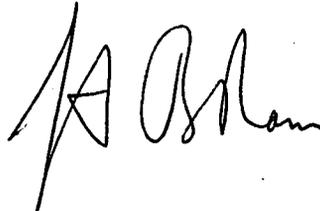
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US Nuclear Regulatory Commission
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SUBJECT: Supplementary Information in Support of
Application Dated September 29, 1992 to Amend
Technical Specifications Pertaining to 480 Volt
Bus Degraded Voltage Setpoints

This letter is in response to a question from the Office of Nuclear Reactor Regulation regarding the time delay for a degraded voltage condition concurrent with a safety injection. This delay is nominally 10 seconds +/- 2 seconds to allow for tolerance of the time delay relay. When this time delay is met, the 480V bus supply breakers are tripped, de-energizing the 480V buses. The de-energization of the 480V buses is detected by the 480V undervoltage relays (blackout), and the 480V buses are then loaded on the emergency diesels similar to a loss of offsite power concurrent with safety injection event. Postulating all time delays in the most conservative direction, and assuming the degraded voltage occurs just prior to when the safety injection pumps should receive a start signal under normal voltage conditions (T=6 seconds into the event), the safety injection pumps will start (after the 480V buses are reloaded onto the emergency diesels) at T=25 seconds into the event. The residual heat removal pumps will start at T=30 seconds into the event, and water is delivered and available for refill. This is consistent with the Westinghouse analysis which begins the refill period at T=37.2 seconds into the event.

Should you have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,



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