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September 14, 1988

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

Document Control Desk
U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

SUBJECT: Post-Fire Re-entry Requirements for Fire Zones 1A and 23

This letter clarifies the post-fire re-entry requirements previously discussed in our September 11, 1985 submittal. In that submittal we requested that the requirements for post-fire re-entry to manually operate certain valves be included within the bases for exemption from Appendix R requirements that were previously granted. Our letter of September 11, 1985 also requested NRC concurrence with those bases to preclude future misinterpretation.

On August 12, 1988 we were requested to provide additional information for use in further evaluating our submittal of September 11, 1985. Subsequent to that discussion, we reevaluated our previous submittals in consideration of the requirements of Generic Letter 86-10, "Implementation of Fire Protection Requirements", and have concluded that post-fire re-entry is no longer required into the two fire zones of concern. The Attachment to this letter presents the results of this evaluation and is responsive to the August 12, 1988 request.

Should you or your staff have questions on this submittal, please contact Mr. Jude Del Percio, Manager, Regulatory Affairs.

Very truly yours,

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Attachment

Deletion of Post-Fire Re-entry Requirements into Fire Zones 1A and 23

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
September, 1988

A. Piping and Electrical Tunnel (Fire Zone 1A)

Exemption request 4.2 contained in our January 10, 1983 submittal indicated that pneumatic instrument lines for Alternate Safe Shutdown System (ASSS) instrumentation (pressurizer pressure and level, and steam generator level) are located in the zone. Fire Zone 1A is part of Fire Area A which is circumvented by the ASSS.

In our submittal of July 13, 1983 we updated the exemption request as part of our spurious valve operation study to address the need to re-enter the zone in the extremely unlikely event of multiple maintained phase-to-phase hot shorts in both Component Cooling Water (CCW) and charging flow paths causing loss of Reactor Coolant Pump (RCP) seal and thermal barrier cooling and necessitating manual reopening of valves. It was stated access would be required and could be achieved within 30 minutes of spurious valve closure if it occurred due to a fire in the zone.

In our September 9, 1983 submittal, as part of the justification for exemption, we committed to install 1/2 hour fire wrap on the pneumatic instrument lines to preserve their independence within the zone such that the ASSS is not damaged by a fire. The NRC Safety Evaluation Report (SER) dated October 16, 1984 determined the fire protection measures provided in zone 1A to be an acceptable equivalent to Appendix R Section III.G, and, therefore, granted our requested exemption.

Our September 11, 1985 submittal noted the previous submittals did not explicitly address the need to access isolation valves for the pneumatic instrument lines of the ASSS. It was stated access would be required and could be achieved within 45 minutes after a fire had started. We requested the October 16, 1984 SER be revised to include the post-fire re-entry requirement for these ASSS instrument lines. The October 16, 1984 SER also did not explicitly address the need for post-fire re-entry to manually reestablish RCP seal cooling as discussed above.

In an August 12, 1988 discussion we were informed that the possibility for post-fire re-entry into the zone in less than one hour would not be accepted by the NRC. To obviate the need to reenter the zone, we indicated that corresponding indications of pressurizer level and pressure and steam generator level were available outside the zone.

Subsequent to the phone conversation we have determined post-fire re-entry into the zone is not required based on the following:

1. RCP Seal Cooling

Seal cooling can be performed by charging system seal injection flow or CCW flow to the thermal barriers. Spurious closure of one of two valves is required to cause loss of seal injection to any one pump. Spurious closure of one of four valves is required to cause loss of CCW cooling to the thermal barriers for all four RCPs. Therefore, two separate spurious signals on two independent systems would be required to cause complete loss of the RCP seal cooling function. Generic Letter 86-10 only requires consideration of spurious failure for valves involving Hi/Lo pressure reactor coolant system (RCS) interfaces and not for other valves such as those for RCP seal cooling. With the probability of one spurious failure in one system being extremely low, the probability of two separate spurious failures in two independent systems is even lower. Accordingly, the RCP seal cooling function is assumed and re-entry into Zone 1A is not required.

2. ASSS Pneumatic Instrumentation

Pressurizer pressure and level and steam generator level indications can be obtained from either local instruments in the Fan House or in Containment at the personnel airlock. Therefore, if there is a fire in Zone 1A and the Fan House instrumentation cannot be activated as a result, the alternate instrumentation in Containment will be used for these indications. Accordingly, re-entry into Zone 1A is not required for obtaining required ASSS indications.

B. Auxiliary Boiler Feed Pump Room (Fire Zone 23)

Exemption request 4.12 contained in our January 10, 1983 submittal indicated that access to the Auxiliary Boiler Feed Pump (ABFP) room will be required in the extremely unlikely event of a sustained hot short to all eight of the auxiliary feedwater (AFW) regulator control valves causing valve closure and necessitating manual reopening. The submittal also provided the results of a quantitative thermal analysis and indicated that smoke detectors that alarm in the control room were installed in the room, and, as part of the justification for the exemption we installed a non-combustible partial separation barrier between ABFPs 21 and 23 and wrapped conduits from the pump 23 motor box down to the floor. These actions were implemented to preserve ASSS independence within this fire zone. The October 16, 1984 SER found that, with the proposed modification, an acceptable level of fire protection equivalent to Section III.G of Appendix R would be achieved within the zone. The SER did not address the post-fire access to the regulator valves that might be required for this zone.

In our letter of September 11, 1985 we indicated that opening of the AFW regulator control valves could be performed in 1/2 hour. We also requested the October 16, 1984 SER be revised to include the post-fire re-entry requirement into the zone as part of the basis of exemption 4.12. Re-entry time of 1/2 hour is acceptable because of the limited quantity of combustibles in the zone and the fact that the zone can be accessed within 10 minutes from the control room.

In an August 12, 1988 discussion, we were informed the basis for post-fire re-entry into the ABFP room in less than one hour would not be accepted by the NRC. Information on other alternative shutdown capability without involving the use of the AFW system originally presented during the September, 1985 special Appendix R inspection, was discussed, thereby making it unnecessary to re-enter the zone.

Subsequent to that discussion we have reevaluated our previous submittals per the requirements of GL 86-10. Since the loss of auxiliary feedwater in the event of a fire in the zone is dependent on the occurrence of hot shorts to all eight regulator control valves, this spurious failure need not be postulated since these valves are not Hi/Lo pressure RCS interface valves. Accordingly, re-entry into Zone 23 is not necessary to ensure the supply of auxiliary feedwater to the steam generators, when required.

Additionally, there is an ability to provide an alternate heat sink given a total loss of AFW for any reason, including fires. This is addressed in Emergency Operating Procedure FR-H.1, "Loss of Secondary Heat Sink." As detailed in the procedure, the unit can recover from this event in three ways:

1. reestablish main boiler feedpump to provide main feedwater to at least two steam generators, or

2. depressurize the RCS sufficient to allow the condensate pumps to supply the steam generators, or

3. depressurize the RCS sufficient to allow the safety injection pumps to supply the RCS while allowing coolant to exit through the Power Operated Relief Valves (bleed and feed).

This three-step alternate method has been analyzed and shown to be acceptable for removing RCS decay heat, is controlled by procedure, and operators are trained to perform it. Additionally, the controls and instruments necessary to perform the alternative method of FR-H.1 are in the control room, which is operational for a fire in the ABFP room, and no cabling for those controls and instruments or equipment necessary to implement FR-H.1 are located within the ABFP room. Accordingly, re-entry into Zone 23 is not required to ensure the supply of auxiliary feedwater to the steam generators as alternative capability to restore RCS heat sink is available.