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November 16, 1983

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

Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Eisenhut:

By letter dated August 22, 1983 (S. A. Varga to J. D. O'Toole) the NRC Staff issued its Safety Evaluation Report (SER) regarding the safe shutdown capability in the event of fire at Indian Point Unit 2 (IP-2). Although we were not requested to comment on that SER, our continued study of the Alternate Safe Shutdown System (ASSS) at IP-2 has determined that some clarifying remarks are necessary. These clarifications are discussed below in the format of the SER.

1) Section 1.0, page -2-, line 6 and Section 2.4, page-5-, line 1:

Reference is made to an NRC letter from S. A. Varga to J. D. O'Toole dated August 6, 1982. Our records show that the NRC letter addressing the action items and schedules was from D. G. Eisenhut to J. D. O'Toole dated August 10, 1982.

2) Section 2.1, page -2-, lines 18-23:

At IP-2 the primary method to maintain reactor shutdown which is relied on for Appendix R purposes is use of at least one of the charging pumps with suction from the Refueling Water Storage Tank (RWST) and powered from an IP-2 power source, not the boric acid transfer pumps. The alternative means is to use one of the charging pumps taking suction from the RWST and powered from the ASSS. If available, boration could also be provided by the boric acid transfer pumps with suction from the boric acid storage tank. From the SER it could be implied that portions of the boric acid transfer system need to be made "free of fire damage" for hot shutdown within the context of Appendix R. In fact, we have made portions of the charging system "free of fire damage"; charging pump 23 is part of the ASSS, and certain exemptions for the charging system are pending. The reactor coolant makeup function provided by the charging system with suction from the RWST, provides sufficient

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boration to adequately support Reactor Coolant System (RCS) shutdown and cooldown requirements and is therefore the method relied upon for Appendix R. The boric acid transfer system will be used if available and not damaged by fire. In addition, as noted in Appendix A to our January 10, 1983 submittal, the boric acid transfer system can be used for cold shutdown with certain repairs, although these are not required in order to satisfy Appendix R.

3) Section 2.1, page -3-, line 4:

Contrary to the statement on this page, in response to Action Item 7 in Section 2.0 of our January 10, 1983 submittal we stated in part that, "Operation of the ARV's (Atmospheric Relief Valves) is not essential for hot shutdown since the main steam line safety valves will relieve steam to the atmosphere." Additionally, in response to Action Item 4 when we were describing alternate shutdown methods we stated in part, "... the inventory of water in the steam generator would be exhausted through the safety relief valves until operator control of the atmospheric dump valves was established..." The primary method of steam relief relied on for Appendix R is via the main steam line safety valves or the atmospheric dump valves. Exclusion of the role of the main steam safety valves from the writeup in the SER makes it incomplete. Accordingly, the statement on page -3- of the SER should read "... With steam relief via the main steam line safety valves or the atmospheric dump valves."

4) Section 2.1, page -3-, line 11:

The statement about primary system pressure needs to be corrected to take into account our response to Action Items 4 and 10 in Section 2.0 of our January 10, 1983 submittal. Specifically, in response to Action Item 4 we stated, in part, that "Once the SSS is operational, the RCS level is controlled by the SSS charging pump. While pressurizer heaters and sprays are normally used to control minor RCS pressure variations, the RCS can be kept in a subcooled condition by controlling heat removal from the steam generators." In response to Action Item 10 we stated that, "As discussed in response to Action Item 4, RCS pressure will be controlled by controlling heat removal from the secondary system. RCS level will be controlled by charging flow. While the pressurizer heaters are normally used to control minor pressure variations in the RCS at full power, the conditions during hot shutdown and decay heat removal do not require such fine control. The only control necessary is to preserve subcooling in the RCS. This can be accomplished by controlling the heat removal rate from the steam generators."

In addition, as a high-low pressure interface, the pressurizer power operated relief valves would be kept closed (and/or isolated by their associated block valves) for this fire scenario and not used for pressure control. This action assures that the RCS pressure boundary is not compromised. Of course, if the normal RCS pressure control systems are available and not damaged by fire, they will be used.

5) Section 2.2, page -4-:

This section of the SER lists the plant areas which are circumvented by the ASSS letter. Omitted from this list is "Zone 3A-Corridor (PAB el. 15'-0)". The complete list is provided in our response to Action Item 1 in Section 2.0 of our January 10, 1983 submittal.

6) Section 2.3, page -4-:

The second sentence briefly mentions the exemptions requested in our January 10, 1983 submittal. Beyond providing a listing of the affected fire zones, as mentioned, we performed a detailed fire hazards analysis to evaluate each zone as required by 10 CFR 50.48 and Section III.G.2 of Appendix R. In some cases additional quantitative thermal effects analyses were performed to provide added justification for exempting each zone from Section III.G.2. Thus, even though certain fire zones at IP-2 do not meet the strict design requirements of Section III.G.2, we do comply with 10 CFR 50.48 through the exemption process. It is our understanding that these exemptions are pending and a separate SER will be forthcoming to specifically cover the Section III.G.2 evaluations. Since the August 22, 1983 SER covers the ASSS, we recommend that either Section 2.3 of the SER be deleted or revised to adequately cover the details associated with the Appendix R exemptions which are pending.

7) Section 2.4, page -6-, lines 1-5:

While it is correct that those connections are not hardwired, not all of the components listed are required for cold shutdown. In fact, the safety injection pump serves only as an enhancement to the ASSS as discussed in our response to Action Item 5 in our January 10, 1983 submittal and is not relied on for Appendix R. The statements in the SER could imply that portions of the safety injection system or motor control center 27 are needed for cold shutdown within the context of Appendix R. However, of these only the RHR pump is required in order to meet Appendix R. The above noted statements should be revised to say "...These connections are not hardwired since these components are either used for cold shutdown or serve as backup to shutdown components".

8) Section 2.4, page -7-:

The instrumentation for the ASSS as listed on this page includes "discharge pressure" and "flow indication" for the safety injection pumps. As previously discussed, the safety injection pumps serve only as an enhancement to the ASSS and are not relied on for Appendix R. Accordingly the clarification that applies is "Safety injection is not a system relied on for the ASSS in the context of Appendix R but serves as an enhancement."

9) Section 2.4, page -7-:

The last sentence implies that "IP-1 switchgear" will be used as the power source for the additional ASSS instrumentation we committed to install. In response to Action Item 12 in our January 10, 1983 submittal we implied that this equipment would be powered from IP-1 but did not explicitly identify "IP-1 switchgear" as the source. At the time of our January 10, 1983 submittal, we had not specifically identified the power source. We are currently reviewing this and are considering other IP-1 power sources (such as IP-1 batteries). We therefore suggest that this sentence be revised to eliminate the explicit identification of the power source for future instruments.

Additionally, this discussion of instrumentation implies that the mechanical gauges are independent of fire areas other than those circumvented by the ASSS. Since many of these indications are locally mounted they may be in the area containing the component. However, fires in these areas are treated in the exemption requests contained in Section 4.0 of our January 10, 1983 submittal where the separation requirements of Section III.G.2 of Appendix R are not met. These exemptions have been supplemented by our July 13, 1983 and September 9, 1983 submittals and their approval is now pending. We suggest that the discussion of instrumentation in this SER be revised by adding an additional sentence after the last sentence on page -7- as follows:

"Fire damage in these areas would be limited, as described in the exemption requests, and although mechanical gauges may be in the fire area they could be used following suppression of the fire."

10) Section 3.4, page -9-:

In the first sentence, the use of the term "independent" implies that these circuits are separate from fire zones which are circumvented by the ASSS and within the context of Appendix R they would have to meet Section III.G.2. As presented in Appendix C to our January 10, 1983 submittal, an evaluation was

performed to determine if the common enclosure associated circuits were routed into fire zones being circumvented by the ASSS and, if so, the potential for secondary fires to occur in the common enclosure if the associated circuits were damaged by hot shorts, or shorts to ground. Where adequate protection by circuit breakers, circuit arrangement, or voltage level of cables in the tray precluded such secondary effects, it was not necessary to make the associated circuits independent of the zones circumvented by the ASSS. The evaluation identified a set of potential associated circuits of concern.

Additionally, in Yard Manhole 21 there are associated circuits of concern which are not "independent" of the manhole and as such we have a pending exemption as addressed in response to Action Item 6 and in Section 4.0 of our January 10, 1983 submittal and Enclosure 5 of our September 9, 1983 submittal. Hence, we recommend that Section 3.4 be revised as follows, "Potential associated circuits of concern were identified, and these were evaluated to identify those circuits where fire effects could preclude shutdown using the ASSS. Any such circuits were addressed in the licensee submittals and are further discussed in other sections of this SER. A summary of the associated circuits concern is as follows:"

11) Section 3.4.1, page -10-, line 2:

It is stated, "Fire in any area of IP-2 will not affect the alternate safe shutdown system supply from IP-1." This statement as written is out of context from information provided in response to an informal NRC request concerning breaker coordination for loads attached to IP-2 buses to assure that required power to the ASSS is not affected by fire in IP-2. Coordination of IP-2 breakers supplying power to safe shutdown components is not required for operation of the ASSS because the installed transfer switches transfer power feeds to safe shutdown equipment from IP-2 breakers over to the IP-1 power supply. Thus, fire in any area of IP-2 will not interrupt the ASSS power supply from IP-1 due to breaker maloperation. Once power is transferred to an ASSS component, operation of the corresponding power feed from IP-2 is not relevant. Further, as discussed in Section 7.0 of our January 10, 1983 submittal, in response to items "c" and "d" of Attachment 1 of Enclosure 2 to the August 10, 1983 NRC letter, the electrical cabling which is run from the IP-1 power supply to the transfer switches themselves are routed through IP-2 fire areas. Thus, fire in these IP-2 zones could damage power feeds from the ASSS; however, the same fire would not damage normal power feeds. Accordingly, where the separation/protection of normal and alternate power feeds does

not meet the requirements of Section III.G.2 and the area is relied on for Appendix R, an exemption is pending. We recommend that Section 3.4.1 be revised as follows, "The transfer switches that have been installed as part of the safe shutdown system modifications for IP-2 transfer the power feeds from IP-2 breakers to the IP-1 power supply and available gas turbines. The ASSS components powered from IP-1 power supply do not rely on component power or control power from any IP-2 buses when transferred to the IP-1 power supply by the transfer switches. Fire in any area of Indian Point 2 will not affect the alternate safe shutdown system supply breakers from IP-1. Coordination of IP-2 breakers is not required in order to assure operability of the alternate safe shutdown system."

12) Section 3.4.2, page -10-:

Although this section correctly points out that in Yard Manhole 21 there are circuits whose loss could potentially result in loss of service water capability, it is not mentioned that we have a pending exemption based on suitable alternative protection and our fire analyses. Yard Manhole 21 is discussed in Action Item 6 and in Section 4.0 of our January 10, 1983 submittal and in Enclosure 5 of our September 9, 1983 submittal. We recommend that the SER be revised to point out that no credible fire could cause the loss of the service water system based on the referenced analyses.

The above clarifications are consistent with information in our submittals, and do not affect the conclusions or intent in the NRC Staff SER. We do however believe the clarifications are necessary in order to avoid possible misinterpretations in future reviews/inspections, or by Con Edison personnel in a future reference to the SER. Accordingly, we request your concurrence in these clarifications. If there are any questions on this submittal, please do not hesitate to call us.

Very truly yours,



John D. O'Toole
Vice President

cc: Mr. T. Foley, Senior Resident Inspector
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