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U.S. Nuclear Regulatory Commission
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Subject: **Indian Point 3 Nuclear Power Plant**
Docket No. 50-286
Update of Electrical Distribution System
Functional Inspection (EDSFI) Issue - Containment Penetrations

Dear Sir:

During the period March 19 through April 19, 1991, the NRC conducted an electrical distribution system functional inspection (EDSFI) at Indian Point 3 (Inspection Report 50-286/91-80). By letter dated October 21, 1991, the Authority provided the NRC a schedule for resolving unresolved issues addressed in the EDSFI which included expanding ongoing electrical system studies. This schedule was updated by the Authority's letter dated July 20, 1992. The purpose of this letter is to provide an update on recent findings regarding containment electrical penetration circuit coordination (Inspection Report 50-286/91-80, Unresolved Item no. 12).

As a result of the ongoing electrical system studies and the Indian Point 3 EDSFI findings, the Authority was evaluating the adequacy of protection for the plant electrical distribution system. While examining replacement of the pressurizer heater breakers, a potential design versus as built discrepancy was noted. Consequently, we accelerated our review of circuit breaker coordination for the heater circuits. During the course of this accelerated evaluation, it was determined that heater circuit cable, penetration and connections are not fully protected by their protective devices. It should be noted that the pressurizer heaters are not safety related equipment. However, because the heaters are reenergized during small break loss-of-coolant-accident or steam line break scenarios, a failure of the heater cabling or connections could be postulated as a consequential failure. If a short circuit was to occur at the heaters, and we postulate a failure of one of the molded case circuit breakers at the heater distribution panel, the upstream breaker (at the 480 V AC switchgear) would not clear the fault in time to protect the integrity of the containment penetration. However, penetrations associated with the pressurizer heaters are protected for the maximum calculated fault currents at the penetrations.

Although this condition does not appear to have been evaluated when the plant was designed and built, the Authority considers that enhanced coordination should be provided for the heater circuits. For this reason, the Authority is evaluating two options to resolve this issue. Option one involves the installation of fuses in each of the pressurizer heater circuits. Option two involves modification or replacement of the existing low voltage power circuit breaker "Amptector" trip units with a unit providing increased sensitivity in the short time fault region allowing for penetration back-up protection for postulated faults. The Authority expects either option to be completed by June 30,1993. It is not known at this time whether or not an outage is needed for either option. The Authority has performed an operability evaluation concerning this issue in accordance with existing procedures.

If you have any questions, please contact Mr. P. Kokolakis.

Very truly yours,

Ralph E. Beedle

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