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L. M. Hill
Resident Manager

November 14, 1994
IPN-94- 145

Mr. Thomas T. Martin
Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Technical Specification Special Report for an Extended Outage of the Carbon Dioxide Fire Protection System

Dear Mr. Martin:

The purpose of this letter is to provide a Technical Specification required Special Report for an extended outage of the Carbon Dioxide (CO_2) Fire Protection System. The Authority will maintain compensatory actions during this system outage according to Technical Specifications. We plan to have the system fully restored by December 31, 1994. The Authority provides this special report as Attachment I.

The Authority recognizes that the CO_2 system design deficiency, presented in the attached report, has similarities to past experiences with inadequate post modification testing. Therefore, engineering will review the effectiveness of the post modification testing program by reviewing a sample of post modification tests performed or being performed this outage and determine if other programmatic improvements are required.

The Authority has listed commitments made in this letter as Attachment II.

If you have any questions regarding this report, please contact Mr. K. Peters at (914) 736-8029.

Very truly yours,

L. M. Hill
Resident Manager
Indian Point 3 Nuclear Power Plant

cc: see next page

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Attachments

cc: Document Control Desk
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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

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Technical Specification Special Report for an Extended Outage of the Carbon Dioxide Fire Protection System

Technical Specification section 3.14.G.2 specifies that the Carbon Dioxide (CO_2) Fire Protection System shall be available to the safety related areas whenever the equipment in those areas is required to be operable according to section 3 of the Technical Specifications. These areas include the cable spreading room and switchgear room in the control building, and the diesel generator building. Technical Specification Section 3.14.G.3.b. specifies that if the requirement of 3.14.G.2 is not met within 14 days, a Special Report shall be prepared and submitted to the commission according to specification 6.9.2.f within the next 30 days outlining the cause of inoperability and the plans for restoring the CO_2 System to operable status.

On October 2, 1994, during the performance of surveillance procedure 3PT-R82, "System Functional Test of the CO_2 System," the CO_2 system main DC power feed fuses opened after approximately five to ten minutes of system operation. The power fuses opened on an overcurrent condition. This condition happened twice, once while testing the system for the cable spreading room and subsequently while testing the system for the emergency diesel cell 31. The CO_2 fire protection system responded to the test in both areas by initially actuating as designed with lights, horns, damper actuation, ventilation shutdown, and CO_2 discharge.

Operations stopped testing the CO_2 system after experiencing this condition when testing the second area. After deciding the extent of the CO_2 system's degradation, Operations established continuous fire watches with backup fire suppression equipment for the affected areas, according to Technical Specification section 3.14.G.3.a. A Deviation Event Report (No. 94-897) was initiated for the event. On October 3, 1994, during the next shift, Operations declared the CO_2 Fire Suppression System inoperable for all the specified areas (cable spreading room, switchgear room and diesel generator building). The Operations staff expanded the fire watches for all the areas that did not have full automatic protection. This declaration of inoperability was considered conservative because the test showed that the system can respond initially to a CO_2 system actuation signal and engineering believes the CO_2 fire suppression system is available in all the areas with subsequent manual action. The Technical Specification Basis defines the meaning of CO_2 Fire Protection System availability. The Basis states that " . . . the CO_2 System Fire Protection availability by definition shall be interpreted to mean with the system in either the automatic or manual mode of operation with the automatic mode as the primary mode of operation."

During further review, the diesel system engineer identified that, in the past, the surveillance (3PT-R82) test method placed the emergency diesel generator ventilation systems in a condition outside their design basis. The Authority reported this event in Licensee Event Report 94-10.

Engineering determined the cause of the CO_2 system inoperability to be undersized fuses in the DC control power circuit for the CO_2 fire protection system. The fuses were introduced while modifying (via MMP 94-3-035) the CO_2 system's DC control power circuit. This modification was completed on September 21, 1994. The engineer did not identify the additional loads (e.g.,

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horns and lights) produced by components that actuate during the CO_2 discharge mode, therefore the fuses were undersized. Because the engineer did not identify these additional loads, the engineer did not specify testing with these loads. Engineering is reviewing other modifications performed or being performed during this outage on electrical protective devices to ensure testing is adequate. Design Engineering is counseling their staff on the importance of post modification testing to include verification of all operating conditions whenever possible. They are modifying the DC control power circuit. In addition, they learned that the CO_2 system abort switches for the control building are misconfigured and do not allow execution of the design feature to manually abort the CO_2 system from a single switch if required for personnel safety. We are correcting this original installation wiring defect. Because the CO_2 system was maintained available in all areas with automatic and subsequent manual action, there is no effect on the health and safety of the public.

The Authority is taking corrective action to restore the system to full automatic operability. Engineering is modifying the DC power feed to the CO_2 system control panel with the correct fuse size for all the loads. Operations will revise the test procedure (3PT-R82) to ensure the test method does not render the plant in a condition outside design. Operations will test the CO_2 system with this improved test procedure. We will maintain continuous fire watches with backup fire suppression for unprotected areas until the modification of the CO_2 system is complete and declared operable. Also, we will reconfigure the abort switch wiring to correct the abort design feature by December 31, 1994.

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List of Commitments

Number	Commitment	Date Due
IPN-94-145-01	Engineering will review the effectiveness of the post modification testing program by reviewing a sample of post modification tests performed or being performed this outage and determine if other programmatic improvements are required.	Prior to startup
IPN-94-145-02	Design Engineering is counseling their staff on the importance of post modification testing to include verification of all operating conditions whenever possible.	12/15/94
IPN-94-145-03	Engineering is modifying the DC power feed to the CO_2 system control panel with the correct fuse size for all the loads.	12/15/94
IPN-94-145-04	Engineering is reviewing other modifications performed or being performed this outage on electrical protective devices to ensure testing is adequate.	Prior to startup
IPN-94-145-05	Engineering will reconfigure the abort switch wiring to correct the abort design feature of the CO_2 system.	12/31/94
IPN-94-145-06	Operations will maintain continuous fire watches with backup fire suppression for unprotected areas (cable spreading room, switchgear room and diesel generator building) until the modification of the CO_2 system is complete and declared operable.	In place until the CO_2 system is operable
IPN-94-145-07	Operations will revise the test procedure (3PT-R82) to ensure the test method does not render the plant in a condition outside design. This supplements a previous commitment IPN-94-141-02 made in LER 94-10.	Prior to Use
IPN-94-145-08	Operations will test the CO_2 system areas (cable spreading room, switchgear room and diesel generator building) with this improved test procedure.	12/31/94