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Vice President

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February 2, 1990

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

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

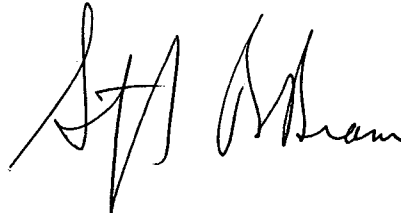
SUBJECT: Response to Generic Letter 89-13, Service Water System Problems
Affecting Safety-Related Equipment

Consolidated Edison is familiar with recent industry and NRC efforts to ameliorate the effects of service water system failures. In conjunction with these efforts, we have initiated a program intended to assure that the Indian Point Unit No. 2 Service Water and Component Cooling Water Systems will satisfy their licensing basis and that the safety-related components and the safety-related portions of the systems will function as required. This overall program includes implementation of test, inspection and maintenance programs as well as Design Basis Documentation (DBD), training and procedural reviews.

Our response to each of the five required actions set forth in the Generic Letter are provided in the attachment to this letter. The tasks and programs that are to be implemented as a result of our response to Generic Letter 89-13 are scheduled for completion by the end of the Cycle 10/11 refueling outage for Indian Point 2, currently scheduled to begin February, 1991.

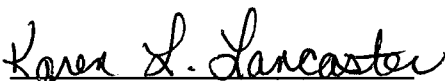
This response is submitted pursuant to the provisions of Section 182a, Atomic Energy Act of 1954 as amended. Should you or your staff have any questions, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,



Attachment

Subscribed and sworn to
before me this 2nd day
of February, 1990.


Notary Public

KAREN L. LANCASTER
Notary Public, State of New York
No. 60-4643659
Qualified in Westchester County
Term Expires 9/30/91

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cc: Mr. William Russell
Regional Administrator - Region I
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Mr. Donald S. Brinkman, Senior Project Manager
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ATTACHMENT

RESPONSE TO GENERIC LETTER 89-13

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
FEBRUARY, 1990

NRC Generic Letter 89-13, Required Action I

For open cycle service water systems, implement and maintain an ongoing program of surveillance and control techniques to significantly reduce the incidence of flow blockage problems as a result of biofouling. Precautions should be taken to obey Federal, State & Local environmental regulations.

Response

We will implement a program to visually inspect the Service Water System intake structures of both Indian Point Units 1 and 2. Inspections will initially be conducted at a frequency of once per refueling cycle. The structures will be examined for macroscopic biological fouling, sedimentation and corrosion.

In addition, we will continue the chlorination and chemical monitoring procedures presently in place on Unit 2, and will re-implement the chlorination and monitoring procedures on Unit 1. We also have a policy in place for chlorination of the Service Water System during periods of lay-up.

NRC Generic Letter 89-13, Required Action II

Verify the heat transfer capability of all the safety related heat exchangers cooled by service water.

Response

We have identified twenty-four (24) safety related heat exchangers cooled by the service water system for inclusion in a test/inspection program. The program to be implemented will divide the heat exchangers into two groups. The first group of heat exchangers will be part of a performance test program in which flow and temperature measurements will be used to calculate & verify the heat transfer capability of each unit. The exact method of testing to be used with each unit is presently under review. The data from these tests will be trended and compared to predetermined heat exchanger safety limits. Degradation to the safety limit will initiate the required maintenance to return the heat exchanger to an acceptable performance level.

The heat exchangers included in the second group will be incorporated in a routine inspection and maintenance program, in which the units will be opened and inspected for cleanliness, biofouling and corrosion/erosion. Problems uncovered by these inspections will be addressed by the maintenance part of this program which will return the heat exchangers to acceptable performance levels.

Equipment history, size, layout and ALARA considerations will be used to determine into which program a particular heat exchanger will be included. Initial testing/inspection frequency will be set at once per refueling outage.

The following heat exchangers are to be included in the above program:

- A) Reactor Containment Fan Cooling Units (RCFCs) (5)
- B) RCFC Motor Coolers (5)
- C) Component Cooling Water (CCW) Heat Exchangers (2)
- D) Emergency Diesel Generator Jacket Water Coolers (3)
- E) Emergency Diesel Generator Lube Oil Coolers (3)
- F) Instrument Air Compressor Closed Cooling Water Heat Exchangers (2)
- G) Radiation Monitor Sample Coolers (4)

The remaining heat exchangers cooled by the Indian Point Unit 2 Service Water System are non-safety related, and are not part of any accident mitigation system, and so are not included in the above program. Additionally, we are not including the heat exchangers cooled by the Component Cooling Water System in the test/inspection program, since a chemistry control program for this intermediate closed cycle cooling system has been in place over the entire operating history of the plant. The records verifying this program date back to April 18, 1972 and are available for review at the station.

In addition to the chemistry control program, recent CCW pump suction strainer inspections conducted during the Cycle 9/10 refueling outage gave no indication of fouling or corrosion. These strainers had been installed in the system since initial start-up. The condition of the mesh screens demonstrates the effectiveness of our chemistry control program in preventing corrosion and fouling, and therefore provides the basis for not including heat exchangers cooled by the CCW system in the aforementioned program.

NRC Generic Letter 89-13, Required Action III

Ensure by establishing a routine inspection and maintenance program for open-cycle service water system piping & components, that corrosion, erosion, protective coating failure, silting and biofouling cannot degrade the performance of the safety-related systems supplied by service water. The maintenance program should have at least the following purposes:

- A) To remove excessive accumulations of biofouling agents, corrosion products and silt.
- B) To repair defective protective coatings and corroded service water system piping and components that could adversely affect performance of their intended safety related function.

Response

We have a QA radiographic program in place, which randomly inspects 10% of the service water piping welds annually. This program exceeds the requirements of ASME, Section XI, and information generated by these inspections is assessed from the standpoint of maintaining pipeline integrity. The existing program does not routinely include underground pipe as part of its random selection process.

To augment this program, we are presently evaluating various inspection techniques for implementation in a service water underground pipe inspection program. Information obtained from these inspections will be evaluated as noted in the existing program.

Service Water System component degradation will be monitored by a number of in place or soon to be implemented programs that ensure the system's ability to perform its safety function. A check valve inspection program, the heat exchanger test/inspection program described in our response to Required Action II and the above pipeline inspection program all provide data for engineering assessment as noted above.

NRC Generic Letter 89-13, Required Action IV

Confirm that the service water system will perform its intended function in accordance with the licensing basis for the plant. Reconstitution of the design basis of the system is not intended. This confirmation should include a review of the ability to perform required safety functions in the event of failure of a single active component. To ensure that the as-built system is in accordance with the appropriate licensing basis documentation, this confirmation should include recent (within the past 2 years) system walkdown inspections.

Response

The Indian Point No. 2 Service Water (SW) and Component Cooling Water (CCW) Systems perform their intended functions in accordance with the licensing basis for the plant. Development of the design basis documents (DBDs) for these systems, while not required by Generic Letter 89-13, is presently in progress. Draft DBDs have been issued for comment and final documents are expected to be issued at the end of our document review process.

Among other things, these documents will reflect information resulting from a recent safety evaluation for an ultimate heat sink temperature increase to 95°F and plant modifications to the SWS to increase the margin of safety for the system. To enhance use by Operations, Maintenance, Engineering Design and Technical Support personnel the SW and CCW Design Basis Documents (DBD) will be detailed to the individual component level.

Results of an on going Operational Equipment (OE) program, which includes system walkdowns to verify as-built status, have been included in the SW DBD & CCW DBD. This program includes discrepancy resolution when as-built details differ from design drawings. Component details are placed into a computerized database for future use and will be updated as plant modifications are installed.

The majority of the walkdowns for the above program were conducted in the latter part of 1987. We have concluded that there is no need for an additional system walkdown at this time, since areas of potential problems were reviewed as part of to the IP-2 Service Water System SSFI conducted from Jan. 25, 1988 to Feb. 19, 1988.

NRC Generic Letter 89-13, Required Action V

Confirm that maintenance practices, operating and emergency procedures and training that involves the Service Water Systems are adequate to ensure that safety-related equipment cooled by service water system will function as intended and that operators of this equipment will perform effectively.

Response

We have recently implemented a maintenance review and procedure upgrade program which includes the CCW Systems. This program should ensure the minimization of human errors in the repair and maintenance of the Service Water and Component Cooling Water Systems.

Indian Point 2 also has an operator training and requalification program intended to increase personnel awareness of the SWS and CCWS and reduce related operating errors. System modifications are routinely monitored by the training department and where appropriate incorporated into the system training modules. In response to Generic Letter 89-13, the training department is presently conducting and documenting a review of the SW and CCW portions of the lesson plans.

As part of the design basis review presently under way, and in response to the Service Water System SSFI, all operating, emergency, and abnormal procedures dealing with the Indian Point Unit 2 SW and CCW systems have been reviewed within the past year.