Commonwealth Edison
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Downers Grove, Illinois 60515

May 28, 1993

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Units 2 and 3
Supplemental Response to Generic Letter (GL) 89-13,
"Service Water System Problems Affecting Safety
Related Equipment," dated July 18, 1989
NRC Docket Nos. 50-237 and 50-249

References: (a) M. Richter letter to U.S. NRC, dated January 29, 1990.

(b) D. Taylor letter to U.S. NRC, dated November 14, 1990.

(c) D. Taylor letter to U.S. NRC, dated May 21, 1991.

Dear Dr. Murley:

In the Reference (a), (b), and (c) letters, Commonwealth Edison (CECo) provided our initial and supplemental responses, respectively, to GL 89-13. GL 89-13 was issued by the NRC following concerns raised toward nuclear station service water systems. The Generic Letter requested licensees to take actions which would ensure that their service water systems were in compliance with, and would be maintained in compliance with 10 CFR Part 50, Appendix A, General Design Criteria 44, 45, 46, and Appendix B, Section XI. Additionally, the Generic Letter required licensees to provide a response that would confirm that the licensee had established programs to implement the recommended actions of the Generic Letter, or that equally effective actions had been pursued.

The purpose of this letter is to provide an updated response to GL 89-13 for Dresden Station. Certain items discussed in Reference (b) and (c) are superceded by this letter. The attachment specifies those items and includes the current status.

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To the best of my knowledge and belief, the statements contained herein are true and correct. In some respects, these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contractor employees, and consultants. Such information has been reviewed in accordance with Company practice, and I believe it to be reliable.

If there are any questions concerning this matter, please contact this office.

Sincerely,

Peter L. Piet
Nuclear Licensing Administrator

Attachment

cc: A. B. Davis, Regional Administrator-RIII
J.F. Stang, Project Manager-NRR
M.N. Leach, Senior Resident Inspector-Dresden
Office of Nuclear Facility Safety-IDNS

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ISSUE 1

GL 89-13, Item II
Conduct a test program to verify the heat transfer capability of all safety-related heat exchangers cooled by service water. The total program should consist of an initial test program and a periodic retest program.

CECo's Response from Reference (c)
The Unit 2 and 3 shared Control Room HVAC (CRHVAC) Refrigerant Condensing heat exchanger will be tested during the next Unit 3 outage. A proceduralized monitoring program has been developed to monitor control room temperatures and condenser performance. The testing frequency will be on a quarterly basis and monthly during the months of July and August. Although no routine station operational surveillances are currently performed for the CRHVAC system, a review of maintenance history revealed that equipment such as the condensers, motors and air handling units had been cleaned and repaired as corrective maintenance dictated. CRHVAC service water inlet/outlet temperatures and pressure are trended in accordance with Dresden Technical Procedure, DTP-10, "Plant Performance Monitoring".

Supplemental Response
The Control Room HVAC (CRHVAC) Refrigerant Condensing heat exchanger consists of two independent trains, the non-safety related train 'A' and the safety related train 'B'. During normal operation, train A is utilized while train B is in standby. The coolant for the safety-related train can be supplied by either service water or by safety-related Containment Cooling Service Water (CCSW); the safety-related CCSW backs up the non-safety-related service water.

Because train A is the normally operated train, it was initially tested to satisfy the commitment that was made in response to GL 89-13. However, since train B is the safety related train, this is the train that should have been tested in order to meet the commitment that was made in response of GL 89-13. Train B does not have the necessary monitoring equipment to perform that testing. Currently, the station Integrated Reporting Process is being utilized to investigate this deviation.

To address the lack of monitoring equipment on train B, a design change to install pressure indicators has been initiated. This design change is scheduled to be complete by December of 1993. After the pressure indicators are installed the differential pressure will be monitored per station procedure.

ISSUE 1 (continued)

Currently, the operability of the train B is demonstrated per DOS 5750-03 "Control Room Ventilation Train B AHU Monthly Surveillance." This test, initiated in June of 1992, was originally performed quarterly as a special procedure. It is now performed monthly. In the time frame since the surveillance was initiated in 1992, the test has been completed successfully. In addition to this test, the station also performed a baseline differential pressure test during D2R13 which indicated acceptable levels of performance. Train B was also cleaned and inspected during D2R13 and will continue to be cleaned and inspected every Unit 2 refueling outage.

ISSUE 2

GL 89-13, Item II
Conduct a test program to verify the heat exchanger capability of all safety-related heat exchangers cooled by service water. The total program should consist of an initial test program and a periodic retest program.

CECo's Response from Reference (c)
The Unit 2 and 2/3 Diesel Generator (DG) cooling water pump motor coolers were tested for operability using the temperature monitoring method. Both temperatures were found to be acceptable. Testing will be performed monthly and in particular during the summer months when service water temperatures maximize.

Supplemental Response
In CECo's original response to GL 89-13 (Reference (a)), CECo stated that "If testing at design conditions is not possible, test data will be extrapolated to design conditions." To effectively determine performance in an absolute sense, at less than design conditions, it is necessary to take cooling water data and extrapolate that information to design conditions. In order to extrapolate, both the inlet and outlet temperatures of the tube and shell side of a heat exchanger need to be recorded. This is not feasible due to the inherent design of the DGCW pump motor cooler.

The DGCW pump motor coolers are water to oil jacket type heat exchangers. Due to the configuration of the pump, any extrapolation techniques for these type of heat exchangers is impossible because inlet/outlet temperatures for the oil side of the heat exchanger cannot be obtained. The only data point that is obtainable is the temperature of the DGCW pump motor casing.

To comply with the intent of GL 89-13, Dresden initially measured the temperature of the DGCW pump motor casing for short periods of time. The site evaluated the test method committed to for GL 89-13 (described in References (a),(c) and above) for the DGCW pump motor and determined that the data showed no increase in temperature (casing temperature was equal to service water inlet temperature) with the pump running. Therefore, the casing temperature was not indicative of heat exchanger performance. Consequently, Dresden terminated data collection in February of 1991. However, formal notification of the change in Dresden's position to GL 89-13 for the DGCW pump motor coolers was not communicated to the NRC Staff. The purpose of this letter is to provide such notification.

ISSUE 2 (continued)

Dresden Station has further investigated this issue to determine its safety significance. Through discussions with the pump manufacturer, Dresden Station has discovered that the DGCW pump is designed for a maximum process fluid (service water) temperature of 350 °F. The cooling water, required by the DGCW motor water jacket, is the process fluid. Dresden's DGCW pump process fluid has a maximum temperature of 95 °F as required by Dresden Station Technical Specification 3.7.A. Therefore, the safety significance of previously not performing the test is minimal.

Dresden Station has chosen a final method of monitoring DGCW pump motor cooler performance that meets the intent of GL 89-13. Dresden Station will gather temperature data by monitoring the pump motor casing for more extended periods of time on a quarterly basis. The temperature monitoring method is an EPRI recommended method for heat exchangers of a type consistent with the design of the DGCW pump motor cooler. However, if future evaluation of the test data gathered, using this technique, proves inconclusive, an evaluation will be performed using the vendor information to determine if further testing is required.

ISSUE 3

GL 89-13, Item II
Conduct a test program to verify the heat transfer capability of all safety-related heat exchangers cooled by service water. The total program should consist of an initial test program and a periodic retest program.

CECo's Response from Reference (b) and (c)
Reference (b)
Commonwealth Edison is performing a study to evaluate the required safety function of room coolers. If the study indicated that the room coolers are not required to mitigate the consequences of an accident, i.e. not safety related, the actions required by Generic Letter 89-13, item II may not be performed for those coolers.

Reference (c)
A systematic evaluation identified seventeen Unit 2 and common safety related (SR) heat exchangers to be tested and/or cleaned. Procedures for testing these heat exchangers have been developed. Testing and/or cleaning was performed and will continue to be performed at a minimum of once per refueling outage as requested in GL 89-13 until adequate trending is performed.

Supplemental Response
In Reference (c), Dresden Station committed to test and/or clean the safety-related heat exchangers. The LPCI emergency room coolers and the HPCI room coolers are a subset of the part of the heat exchangers identified in Reference (c). In August of 1990, a study was performed by CECo that determined the LPCI and HPCI room cooler are non-safety related. The Nuclear Engineering Department concurred with the On-Site-Review of the original study and a safety evaluation was completed that concluded that plant safety was not compromised by this categorization. As a result of this study, the room coolers were removed from the scope of GL 89-13. At that time, the station elected not to inspect the room coolers. However, the original commitment for these coolers was not revised.

Based on further evaluations of these room coolers by CECo, a decision was made to inspect and clean these coolers during D2R13. Based on the results of the Unit 2 inspection, Unit 3 was inspected and cleaned during D3F15. These room coolers will continue to be inspected and cleaned every refueling outage.

Additionally, the station Integrated Reporting Process is being utilized to investigate this deviation.

ISSUE 4

GL 89-13, Item 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. The confirmation should include 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 should include recent system walkdown inspections.

CECo's Response from Reference (b)
A service water system design review will be conducted for each of the safety related open-cycle and closed cycle service water systems installed at the station.
The design review will be completed before plant startup following the first refueling outage scheduled to begin 9 months or more after the date of GL 89-13 (D2R12).

Supplemental Response
Dresden has completed the Service Water design review for Units 2 and 3. However, the design review for Unit 3 was completed after the originally scheduled date.

The design review was initiated in 1989, with the Unit 2 report being completed in January 1990 and the Unit 3 report being completed in May 1991. The design review was a large project that involved significant interface with CECO project engineers and the AE. The study did not result in identification of major design issues requiring resolution. All design issues resulting from this study have been addressed or are being addressed by the Station. The Unit 2 startup (D2R12) occurred in February 1991 with the design review for Unit 3 completed in May 1991. Although the Unit 3 report was completed after the date committed to in the response to GL 89-13, the actual completion of the Unit 3 report was eleven months prior to the guidance provided in GL 89-13 (D3R12 ending April 1992). The Station safety evaluation verified that the change to the review completion date did not compromise plant safety in any way.