



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

50-237/249/254/265

September 22, 1994

Mr. D. L. Farrar, Manager  
Nuclear Regulatory Services  
Commonwealth Edison Company  
Executive Towers West III, Suite 500  
1400 OPUS Place  
Downers Grove, IL 60515

SUBJECT: REACTOR WATER CLEANUP SYSTEM PIPING INSPECTION PROGRAM - QUAD CITIES  
NUCLEAR POWER STATION, UNITS 1 AND 2; DRESDEN NUCLEAR POWER STATION,  
UNITS 2 AND 3 (TAC NOS. M88865, M88866, M88700, M88701)

Dear Mr. Farrar:

By letter dated December 23, 1992, the NRC accepted your proposed inspection and action plan concerning the reactor water cleanup (RWCU) system as stated in your letter dated December 14, 1992. In our December 23, 1992, letter, we requested that Commonwealth Edison Company (ComEd, the licensee) notify the NRC should any cracking be identified during the RWCU system piping inspections, regardless of whether or not repairs were required. By letter dated August 20, 1993, ComEd provided the results of the inspection of the RWCU system piping for Quad Cities, Unit 2, and Dresden, Unit 2, which were completed during the refueling outages in the spring of 1993. Five of the eight welds inspected at Quad Cities, Unit 2, and seven of the eight welds inspected at Dresden, Unit 2, showed indications of intergranular stress corrosion cracking (IGSCC). All piping encompassing the welds in which indications were identified, was either replaced or repaired prior to each unit startup.

Based on the inspection findings, ComEd made the decision that continued inspections would not be beneficial. Your August 20, 1993, letter proposed a new plan for the RWCU system piping to satisfy the provisions of Generic Letter (GL) 88-01, "NRC Position of IGSCC in BWR Austenitic Stainless Steel Piping." The licensee proposed to discontinue any further inspections of the existing RWCU piping. In lieu of the continued inspections, ComEd proposed to replace all IGSCC susceptible RWCU piping and the regenerative heat exchangers at Quad Cities, Units 1 and 2, and Dresden, Units 2 and 3, with resistant material.

Quad Cities, Units 1 and 2

As discussed in your February 22, 1994, letter, the proposed schedule for the piping replacement of the RWCU system piping for the Quad Cities units is as follows:

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PDR ADDCK 05000237  
P PDR

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NRC FILE CENTER COPY

DFD1 '10

Quad Cities, Unit 1

Q1R14 - September 1995 (Supply side)  
Q1R15 - October 1997 (Return side)

Quad Cities, Unit 2

Q2R13 - January 1995 (Supply side)  
Q2R14 - September 1996 (Return side)

The licensee indicated that long lead time is required to obtain major equipment and material for the RWCU system piping replacement. Two outages are requested for the replacement based on the efforts required for the RWCU system modifications.

Upgrades and enhancements to the RWCU isolation valves to meet the provisions of GL 89-10, Supplement 3, "Consideration of Results of NRC Sponsored Tests of Motor-Operated Valves," have been completed for both Quad Cities units. These modifications improved the isolation capability of the RWCU system.

Temperature and radiation monitors, which alarm in the control room, were to be installed in areas where existing RWCU piping is routed. If a leak should occur in the RWCU piping prior to the scheduled piping replacement, the temperature and radiation monitors would help in detecting the leaks, and allow operator action to isolate the RWCU piping in a timely manner.

Based on recent findings at Quad Cities, Unit 1, regarding BWR internals cracking caused by IGSCC and the fact that RWCU piping is exposed to the similar water chemistry, the staff is concerned with your proposed schedule of not replacing all the RWCU piping in the first upcoming refueling outage. The staff is concerned with the integrity of the RWCU piping in use for three cycles without inspection of the piping. Unless additional analyses to further justify the RWCU pipe integrity through operating cycle 15 for Quad Cities, Unit 1, and operating cycle 14 for Unit 2 can be provided, all (supply and return side) RWCU piping should be replaced at the next scheduled refueling outage. Also, please provide a description of the temperature and radiation monitors and any other compensatory measure used in lieu of inspections up until the projected replacement.

With no apparent piping leakage at this time, the NRC staff finds the current inspection program for Quad Cities, Units 1 and 2, may be discontinued. You are requested to submit any analyses supporting operation with the existing piping beyond the next refueling outage, within 60 days from the date of this letter. The NRC staff will evaluate your final schedule for the RWCU piping replacement once the above justification is provided.

Dresden, Units 2 and 3

The staff has recently become aware of major BWR internals degradation as a result of IGSCC at Dresden, Unit 3. Dresden, similar to Quad Cities, proposed two outages to replace the RWCU piping. The NRC approved the two cycle replacement schedule by letter dated March 1, 1994. However, in light of recent experience at Dresden, Unit 3, the NRC requests that ComEd provide an analysis to justify the integrity of the RWCU piping through cycle 15 for both Dresden, Units 2 and 3.

Mr. D. L. Farrar

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Please provide a detailed analysis justifying the RWCU piping integrity through the operating cycles for each unit as indicated above, or justify another schedule and provide the description of any compensatory measures taken, within 60 days of receipt of this letter.

Sincerely,

**Original Signed By:**

Robert M. Pulsifer, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254, 50-265,  
50-237, 50-249

cc: see next page

bcc: Mr. John Willis, Greenpeace Int.

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RWessman	

\*See previous concurrence

OFC	LA:PDIII-2*	PM:PDIII-2*	PM:PDIII-2*	D:PDIII-2	BC:EMCB*	BC:EMEB*
NAME	CMOORE	RPULSIFER.rc	JSTANG	RCAPRA Ru	JSTROSNIDER	RWESSMAN
DATE	08/31/94 9/21/94	08/31/94	09/3/94	9/21/94	09/7/9	09/20/94
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Mr. D. L. Farrar

- 3 -

Please provide a detailed analyses justifying the RWCU piping integrity through the operating cycles for each unit as indicated above, or justify another schedule and provide the description of any compensatory measures taken, within 60 days of receipt of this letter.

Sincerely,

Chandu P. Patel, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

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DATE	8/31/94	8/31/94	9/13/94	1 / 94	9/17/94	9/20/94
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

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Sincerely,

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Robert M. Pulsifer, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

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COPY	YES/NO	YES/NO	YES/NO	(YES)/NO	YES/NO	YES/NO

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Mr. D. L. Farrar  
Commonwealth Edison Company

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Unit Nos. 1 and 2

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Mr. D. L. Farrar  
Commonwealth Edison Company

Dresden Nuclear Power Station  
Unit Nos. 2 and 3

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