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

August 16, 1995

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

SUBJECT: RESOLUTION OF CORE SHROUD CRACKING AT DRESDEN, UNIT 3, AND QUAD CITIES, UNIT 1 (TAC NOS. M91298 AND 91299)

Dear Mr. Farrar:

During refueling outages in the spring of 1994, Commonwealth Edison Company (ComEd) discovered cracking in the circumferential welds in the core shrouds at Dresden, Unit 3, and Quad Cities, Unit 1. ComEd provided documentation for the NRC staff review and approval concluding that the cracked core shrouds could maintain margins against failure as specified in Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code).

The NRC staff reviewed the ComEd analysis and by letter dated July 21, 1994, issued a safety evaluation (SE) which concluded that the cracked shrouds will satisfy ASME Code margins against weld failure for 15 months of operation above cold shutdown.

During the NRC staff review uncertainties were identified in the following parts of ComEd's analyses:

1. the sizing of the crack in the H5 weld;

2. the recirculation line break load analysis; and

3. core shroud movement under postulated accident loads assuming complete failure of the H5 weld.

The staff's independent evaluation used conservative assumptions to account for the uncertainties identified in ComEd's analyses; however, as discussed in Section 2.6 of the July 21, 1994, SE, ComEd was requested to provide the following confirmatory analyses to the NRC by December 15, 1994:

1. a computerized 3-dimensional asymmetric depressurization analysis for the recirculation line break, including assumptions and entry level conditions,

2. the WHAM calculations for the recirculation line break, including assumptions and entry level conditions, and

3. a detailed analysis of shroud movement, assuming a 360° through-wall crack, following postulated events, including all assumptions, entry level conditions, calculational techniques, and conservatisms. In your evaluation of seismic considerations, the analysis should be based on the most limiting seismic input motion (i.e., Golden Gate Park, time history, and El Centro, and Housner).

By letter dated September 2, 1994, November 15, 1994, and December 14, 1994, ComEd provided additional information to address each of the above uncertainties. The NRC staff has reviewed the above information, and based on the enclosed SE, the NRC staff finds the conclusion reached in our July 21, 1994, SE, that the cracked shrouds will satisfy ASME Code margins against weld failure for 15 months of operation above cold shutdown, remains valid. Satisfying the ASME Code margins against failure provides reasonable assurance that the core shrouds at Dresden, Unit 3, and Quad Cities, Unit 1, will remain intact even under postulated licensing basis and beyond licensing basis accident conditions. Therefore, Dresden, Unit 3, and Quad Cities, Unit 1, can continue to operate without undue risk to the public health and safety.

The NRC staff is currently reviewing plans for a permanent repair of the entire core shroud at Dresden and Quad Cities.

If you have any questions concerning this SE, please contact me at (301) 415-1345.

Sincerely,

Original signed by

John F. Stang, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-249 and 50-254

Enclosure: Safety Evaluation

cc w/encl: See next page

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