

February 13, 1997

Ms. Irene Johnson, Acting Manager  
Nuclear Regulatory Services  
Commonwealth Edison Company  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING THE QUAD  
CITIES NUCLEAR POWER STATION, UNIT 1, ALTERNATIVE TO  
10 CFR 50.55A(G)(6)(ii)(A) AUGMENTED REACTOR PRESSURE VESSEL  
(RPV) EXAMINATION (TAC NO. M97370)

Dear Ms. Johnson:

By letter dated November 22, 1996, Commonwealth Edison Company (ComEd) submitted an alternative to 10 CFR 50.55a(g)(6)(ii)(A) augmented reactor pressure vessel examination requirements for Quad Cities Nuclear Power Station, Unit 1. The staff with assistance from its contractor, Idaho National Engineering Laboratory (INEL), is reviewing and evaluating this alternative. Additional information is required from ComEd in order for the staff to complete its review.

The staff requests that the response to the attached RAI be forwarded to NRC within 60 days. In addition, to expedite the review process, please send a copy of the RAI response to the NRC's contractor, INEL, at the following address:

Michael T. Anderson  
INEL Research Center  
2151 North Boulevard  
P.O. Box 1625  
Idaho Falls, Idaho 83415-2209

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 No.: 50-254

Enclosure: As stated

cc w/encl: See next page

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OFFICE	PA:PDIII-2	e	LA:PDIII-2		D:PDIII-2	E
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DATE	02/13/97		02/13/97		02/13/97	

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

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Nuclear Regulatory Services  
Commonwealth Edison Company  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING THE QUAD CITIES  
NUCLEAR POWER STATION, UNIT 1, ALTERNATIVE TO  
10 CFR 50.55A(G)(6)(ii)(A) AUGMENTED REACTOR PRESSURE VESSEL (RPV)  
EXAMINATION (TAC NO. M97370)

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P.O. Box 1625  
Idaho Falls, Idaho 83415-2209

Sincerely,

A handwritten signature in black ink, appearing to read "Robert M. Pulsifer".

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

Docket No.: 50-254

Enclosure: As stated

cc w/encl: See next page

I. Johnson  
Commonwealth Edison Company

Quad Cities Nuclear Power Station  
Unit Nos. 1 and 2

cc:

Michael I. Miller, Esquire  
Sidley and Austin  
One First National Plaza  
Chicago, Illinois 60603

Document Control Desk-Licensing  
Commonwealth Edison Company  
1400 Opus Place, Suite 400  
Downers Grove, Illinois 60515

Mr. L. William Pearce  
Station Manager  
Quad Cities Nuclear Power Station  
22710 206th Avenue North  
Cordova, Illinois 61242

U.S. Nuclear Regulatory Commission  
Quad Cities Resident Inspectors Office  
22712 206th Avenue North  
Cordova, Illinois 61242

Chairman  
Rock Island County Board  
of Supervisors  
1504 3rd Avenue  
Rock Island County Office Bldg.  
Rock Island, Illinois 61201

Illinois Department of Nuclear Safety  
Office of Nuclear Facility Safety  
1035 Outer Park Drive  
Springfield, Illinois 62704

Regional Administrator  
U.S. NRC, Region III  
801 Warrenville Road  
Lisle, Illinois 60532-4351

Richard J. Singer  
Manager - Nuclear  
MidAmerican Energy Company  
907 Walnut Street  
P.O. Box 657  
Des Moines, Iowa 50303

Brent E. Gale, Esq.  
Vice President - Law and  
Regulatory Affairs  
MidAmerican Energy Company  
One RiverCenter Place  
106 East Second Street  
P.O. Box 4350  
Davenport, Iowa 52808

REQUEST FOR ADDITIONAL INFORMATION  
RELATING TO AN ALTERNATIVE TO AUGMENTED REACTOR PRESSURE VESSEL INSPECTION  
QUAD CITIES NUCLEAR POWER STATION, UNIT 1  
DOCKET NUMBER: 50-254

Request for Additional Information - Alternative to 10 CFR 50.55a(g)(6)(ii)(A)  
Augmented Reactor Pressure Vessel (RPV) Examination

1. Scope/Status of Review

In accordance with 10 CFR 50.55a(g)(6)(ii)(A), all licensees must implement once, as part of the inservice inspection interval in effect on September 8, 1992, an augmented volumetric examination of the RPV welds specified in Item B1.10 of Examination Category B-A of the 1989 Edition of the ASME Code, Section XI. Examination Category B-A, Items B1.11 and B1.12 require volumetric examination of essentially 100 percent of the RPV circumferential and longitudinal shell welds, as defined by Figures IWB-2500-1 and -2, respectively. Essentially 100 percent, as defined by 10 CFR 50.55a(g)(6)(ii)(A)(2), is greater than 90 percent of the examination volume of each weld. Licensee's unable to satisfy the requirements of 10 CFR 50.55a(g)(6)(ii)(A) must propose an alternative to the examination requirements, which may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. In addition, all previously granted relief for Item B1.10, Examination Category B-A for the interval in effect on September 8, 1992, are revoked by the new regulation. For licensees with fewer than 40 months remaining in the interval on the effective date, deferral of the augmented examination is permissible with the conditions stated in the regulations.

The staff has reviewed the information submitted by the licensee in a letter dated November 22, 1996, proposing an alternative to the 10 CFR 50.55a(g)(6)(ii)(A) augmented RPV examination.

2. Additional Information Required

The staff has concluded that additional information and/or clarification is required to complete the evaluation.

- 2.1 Provide the date of the augmented RPV examination. In addition, provide a history of the examinations performed on the RPV to date. The licensee stated that the augmented examination was performed utilizing the GERIS system from within the reactor pressure vessel. Describe how examinations were performed on the vessel for the previous intervals. Did the vessel receive a 100 percent baseline examination?

ENCLOSURE

- 2.2 Considering that the augmented vessel examination is a one time requirement, and considering past examinations may have been performed from the outside surface, discuss increasing examination coverages from the outside surface.
- 2.3 The licensee noted that 53 indications were detected by the augmented examination. The licensee stated that all of these flaws were determined to be fabrication flaws. Provide the basis for this determination.
- 2.4 Based on the review of the limitations listed by the licensee, it appears that one of the main factors resulting in the noncompliance with Code-required coverage is associated with the inspection device manipulator lower limit. For reactor pressure vessel longitudinal welds RPV-VSC1-55 and RPV-VSC1-317, coverages of less than 90 percent were obtained and for circumferential weld RPV-CW-LHC1, 0 percent coverage was obtained. Provide further discussion on these limited examinations. It appears that modification of the manipulator may provide additional reach for increased coverage.
- 2.5 The licensee noted that the procedure for performing the augmented examination was an alternative examination method. In addition, it is stated that the procedure was not in strict compliance with ASME Section XI 1989 Edition, Paragraph IWA-2232; ASME Section V Article 4; or NRC Regulatory Guide 1.150. It is generally agreed that qualification by demonstration would provide a basis to conclude that the flaw detection capabilities of a procedure will be at least equal to that of past examinations. However, performance demonstration does not preclude the requirement to satisfy the Code of record for a plant or other commitments that the licensee may have made. As such, describe the differences between the requirements associated with the Code of record and commitments for the licensee's plant, and the procedure implemented to satisfy the subject examinations. Verify that scanning of welds was performed from both sides of the weld on the same surface where feasible. These examinations should have included scanning for reflectors oriented parallel and transverse to the weld.