The Honorable Lane Evans
United States House of Representatives
Washington, D.C. 20515

July 28, 1992

Dear Congressman Evans:

In our letter to you of May 25, 1990, we committed to keep you informed on the cracks in the reactor vessel head at the Quad Cities Station, Unit 2, by sending you additional documents as they become available. We have already sent you several relevant documents with our letters of August 6, 1990, and October 22, 1990. Enclosure 1 is a letter from Commonwealth Edison presenting the results of the inspections performed during the last refueling outage and a plan for future inspections. Enclosure 2 is our letter to Commonwealth Edison approving the future inspection plan.

The licensee found no new flaws, no apparent change in the existing flaws, no pitting in cavities where base metal was exposed, and no apparent change in flaws which were associated with cavities. The future inspection plan will adequately monitor reactor vessel head condition. Therefore, we continue to believe that operation of Quad Cities, Unit 2, with the flaws poses no safety concerns. I trust that this additional information satisfies our commitment to you.

Sincerely, Original Signed By:
James M. Taylor
James M. Taylor
Executive Director
for Operations

Enclosures:
1. Letter from John L. Schrage, Commonwealth Edison, May 11, 1992
2. Letter from Leonard N. Olshan, U.S. Nuclear Regulatory Commission, June 23, 1992

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DATE	7/17/92	7/20/92	7/20/92	7/21/92	7/24/92	7/24

Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

May 11, 1992

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

ATTN: Document Control Desk

SUBJECT: Quad Cities Station Uni ; 1 and 2
Results of Reactor Head Inspection;
Future Reactor Head Examination Plan
NRC Docket Nos. 50-254 and 50-265

REFERENCES:
(a) J.L. Schrage (CECo) to T.E. Murley letter dated September 30, 1991.

(b) Teleconference between CECo (J.L. Schrage et al) and NRC (L.N. Olshan et al) on March 5, 1992.

(c) Conference between CECo (J.L. Schrage) and NRC (L.N. Olshan, W. Koo, B. Elliott) on March 19, 1992.

Dear Dr. Murley:

On April 19, 1990 members of the Nuclear Reactor Regulation's (NRR) and Commonwealth Edison Company's (CECo's) staff conducted a technical meeting to discuss the cracks identified in the Quad Cities Unit 2 Reactor Vessel Head. During that meeting, CECo committed to perform inspections of the Reactor Vessel Heads at each of its Boiling Water Reactor (BWR) Plants.

In Reference (a), CECo described the Reactor Head and Upper Shell Inspection Plan for Quad Cities Station Unit 2 for the winter refuel outage (Q2R11). This inspection plan was implemented during the outage. The purpose of this letter is to describe the results of that inspection and provide the Quad Cities Unit 2 Reactor Head and Upper Shell Inspection Plan for future refuel outages.

The results of the inspection were discussed with your staff in a teleconference on March 5, 1992 (Reference(b)), and are described in Attachment 1. The inspection resulted in the following conclusions:

- There were no new flaws detected in the cladding and base metal.
- There were no apparent changes in length and depth of the existing flaws.

ENCLOSURE 1

- There was no pitting in cavities where base metal was exposed.
- There were no apparent changes in length and depth of flaws which were associated with cavities.

The proposed Reactor Head and Upper Shell Inspection Plan for future Unit 2 refuel outages was also presented to your staff during the March 5, 1992 teleconference (Reference (b)). The staff raised questions during that teleconference regarding the proposed UT sizing of existing cracks. CECo revised the proposed inspection plan to address these questions, and presented this revision to your staff during a conference on March 19, 1992 (Reference(c)) The revised plan required UT sizing of three surface penetrating cracks and three embedded cracks, including the deepest crack. During the March 19, 1992 conference, the staff indicated that the revised inspection plan adequately addressed the questions which were raised during the March 5, 1992 teleconference. Therefore, the final Reactor Head and Upper Shell Inspection Plan for future Quad Cities Unit 2 refuel outages is submitted for your staff's review (Attachment 2).

If there are any questions or comments on either the results of the recent inspection, or the Reactor Head and Upper Shell Inspection Plan for future Unit 2 outages, please contact John L. Schrage at 708-515-7283.

John L. Schrage
Nuclear Licensing Administrator

Attachment

cc: A. Bert Davis, Regional Administrator - RIII
L. N. Olshan, Project Manager - NRR
T. E. Taylor, Senior Resident Inspector - Quad Cities
B. J. Elliot, NRR Technical Staff

/scl:1316:1

ATTACHMENT 1

QUAD CITIES UNIT-2
RPV HEAD EXAMINATION RESULTS (Q2R11)

1. VT-3 100% OF RPV HEAD ID, OUTSIDE THE 12" WIDE BAND CENTERED ON THE RPV HEAD-TO-FLANGE WELD.

   Result: A Section from 100° to 125° on the ID of the RPV Head Dollar weld had heavier rust appearance.

2. VT-1 OF ALL EXCAVATED CAVITIES (WHERE BASE METAL EXPOSED).

   Result: No pitting, insignificant rust spots in base metal.

3. PT

   a. SECTION FROM 100° to 125° OF RPV HEAD DOLLAR WELD ID,

      Result: No relevant indications.

   b. 12" WIDE BAND CENTERED ON ID OF RPV HEAD-TO-FLANGE, INCLUDING EXCAVATED LOCATIONS WITHIN THE BAND AND AT 60" & 25" ABOVE FLANGE SURFACE.

      Result: No apparent increases in number of flaws or in length of existing flaws.

4. UT FROM OD OF RPV HEAD-TO-FLANGE USING ENHANCED TECHNIQUE.

   Result: UT detected 20 crack-like indications that resulted in approximately 197" total flaw length or 25% of weld length using OD measurements. In 1990, similar UT detected 21 crack-like indications that resulted in approximately 255" total flaw length or 32% of weld length. Changes in the evaluation of clad roll and crack signals account for the majority of the difference in total flaw length.

5. UT SIZING FROM ID (14 FLAWS AT 18 LOCATIONS).

   Result: Maximum flaw depth is 0.24" into base metal. Maximum flaw depth in 1990 was 0.22" into base metal.

6. CONCLUSION:

   a. No new flaws detected in cladding and base metal.

   b. No apparent changes in length and depth observed on existing/old flaws.

   c. No pitting observed in cavities where base metal is exposed. No apparent changes in length and depth of flaws that are associated with cavities.

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ATTACHMENT 2

QUAD CITIES UNIT-2
FUTURE RPV HEAD EXAMINATION PLAN

The following examination plan will be implemented in lieu of the successive examination requirements of ASME Section XI IWB-2420 (b) on the Quad Cities Unit 2 RPV head every other scheduled refueling outage, beginning with Q2R13 which is currently scheduled for September 1994:

1. Visually examine (VT-3) 100% the inside surface of the Reactor Pressure Vessel (RPV) Head. Conditions to be examined for and recorded:

   a. New cracks and linear indications.

   b. Existing cracks that show a definite increase in length.

   c. Heavy/unusual rust streaks.

2. Visually examine (VT-1) all excavated cavities, where base metal is exposed, for pitting and cracking of the low alloy steel material.

3. If necessary, liquid dye penetrant test (PT) may supplement the visual examinations of activities 1 and/or 2.

4. Ultrasonically test (UT), from the ID and/or OD as allowed by surface condition to determine flaw depth, the following:

   a. All cracks found by activities 1 and 2.

   b. Six locations (stamped with low stress markers) with existing cracks which are in the 12 inch wide band centered (nominally) on the ID of the RPV head-to-flange weld. At least three of the six locations to be monitored are associated with ID surface penetrating cracks as determined by PT.

5. The flaw characteristics found by activity 4.b. will be compared to the 1992 as-left flaw characteristics to determine crack growth. Modification to this examination plan may be necessary if significant crack initiation or significant crack growth is observed during future RPV head examination.

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

June 23, 1992

Docket No. 50-265

Mr. Thomas J. Kovach
Nuclear Licensing Manager
Commonwealth Edison Company-Suite 300
OPUS West III
1400 OPUS Place
Downers Grove, Illinois 60515

Dear Mr. Kovach:

SUBJECT: PLAN FOR FUTURE EXAMINATIONS OF THE QUAD CITIES, UNIT 2, REACTOR HEAD (TAC NO. M76437)

During the Quad Cities, Unit 2, refueling outage of Spring 1990 (Q2R10), flaws were found on the reactor head. As a result, you committed to perform inspections of the reactor head during the following refueling outage (Q2R11). By letter dated May 11, 1992, you presented the results of these inspections and a plan for future inspections. The inspections found no new flaws, no apparent change in the existing flaws, no pitting in cavities where base metal was exposed, and no apparent change in flaws which were associated with cavities.

Your proposed future inspection plan, which incorporates our suggestions from a March 19, 1992 conference call, includes ultrasonic (UR) sizing of three surface penetrating cracks and three embedded cracks, including the deepest crack.

We have reviewed your proposed future inspection plan for the Quad Cities, Unit 2, reactor head and find it acceptable. This completes activities associated with TAC No. M76437.

Sincerely,

Leonard N. Olshan, Project Manager
Project Directorate III-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

cc: See next page

9207020118

ENCLOSURE 2

cc:

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