

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-254/92024(DRS)

License No. DPR-29

Docket No. 50-254

Licensee: Commonwealth Edison Company  
Opus West III  
1400 Opus Place  
Downers Grove, IL 60515

Facility Name: Quad Cities Station, Unit 1

Inspection At: Quad Cities Site, Cordova, IL

Inspection Conducted: October 6 through December 15, 1992

Inspector:

K. D. Ward  
K. D. Ward

12/15/92  
Date

Accompanied By: L. Sage, Illinois Department of Nuclear Safety  
(October 28-29, and December 15, 1992)

Approved By:

J. M. Jacobson  
J. M. Jacobson, Chief  
Materials and Processes Section

12/15/92  
Date

Inspection Summary

Inspection conducted on October 6-9, 20-21, and December 15, 1992  
(Report No. 50-254/92024(DRS))

Areas Inspected: Routine unannounced safety inspection of inservice inspection (ISI) activities including review of programs (73051), data (73755), procedures (73052), observation of work activities (73753), review of the erosion/corrosion (E/C) program (49001), and facility modifications (37701).

Results: No violations or deviations were identified. Based on the results of the inspection, the NRC inspector noted the following:

- ° The licensee adequately demonstrated the ability to properly implement the modifications, E/C, and ISI programs.
- ° The ISI, E/C and modification personnel were very knowledgeable, and utilized state of the art equipment.
- ° Management was involved in the ISI, E/C and modification activities in an effective manner.

## DETAILS

### 1. Persons Contacted

#### Commonwealth Edison Company (CECo)

- \*R. Bax, Station Manager
- \*G. Knapp, ISI/IST Group Leader
- \*J. Wethington, Assistant Technical Staff Supervisor
- \*T. Kuksuk, ISI Coordinator
- \*R. Ruesch, E/C Coordinator
- \*D. Kanakares, Regulatory Assurance
- V. Goetz, Technical Staff

#### U. S. Nuclear Regulatory Commission (NRC)

- \*T. Taylor, Senior Resident Inspector
- J. Shine, Resident Inspector
- P. Prescott, Resident Inspector

#### Illinois Department of Nuclear Safety (IDNS)

- \*L. Sage, Code Compliance Engineer

#### Conam Inspection, Inc.

- D. Kutschkau, Level II

#### Hartford Steam Boiler Inspection and Insurance Company (HSB)

- G. Bosley, ANII

The NRC inspector also contacted and interviewed other licensee and contractor employees.

\*Denotes those present during the exit interview on December 15, 1992.

### 2. Inservice Inspection (ISI) Unit 1

#### a. Program Review (73051)

Personnel from CECo and GE performed the ISI in accordance with ASME Section XI, 1980 Edition, Winter 1980 Addenda. The sampling inspection plan for addressing intergranular stress corrosion cracking (IGSCC) was in accordance with Generic Letter (GL) 88-01. The welds examined in accordance with GL 88-01 were found to be acceptable. The licensee did not make a request for relief from the ASME Code for this outage. The NRC inspector reviewed Audit No. 4/92-10-

007 and surveillances of the ISI program performed by CECOs. The audit and surveillance efforts were found to be acceptable and performed by qualified personnel. Organizational staffing for the ISI program was found to be acceptable and the services of an Authorized Nuclear Inservice Inspector (ANII) were procured from Hartford Steam Boiler Inspection and Insurance Company.

The NRC inspector also reviewed the qualifications and certifications of all inspection personnel performing ISI to ensure conformance with SNT-TC-1A.

b. Procedure Review (73052)

All applicable ISI procedures were approved by the ANII and were reviewed by the NRC inspector. The ISI procedures were found to be acceptable and in accordance with ASME Section V, 1980 Edition, Winter 1980 Addenda.

c. Data Review (73755)

The examination data was within the criteria as outlined in the applicable NDE procedures and ASME Code requirements. The IDNS inspector reviewed VT, PT and UT examination data. All data was within ASME Code requirements and any indications were appropriately dispositioned.

d. Observations of Work Activities (73753)

The NRC inspector observed work activities and had discussions with personnel during the ISI activities. These observations included the following:

- (1) CECOs and GE personnel performing visual examinations (VT) from inside the reactor vessel using an underwater TV camera. The tapes were reviewed by the NRC inspector and the IDNS inspector. This review included the following:
  - (a) jet pump defuser to adapter welds.
  - (b) shroud holddown bolt lower guide pins.
  - (c) shroud access hole covers (AHC). Cracks were observed in the vertical crevices of both AHC welds. Ultrasonic examinations showed circumferential cracks with several areas completely through wall. The repair consisted of electric discharge machining a circular cut through the entire thickness of

the shroud support plate at 30 inch diameter that removed the original AHC, the weld, and associated heat affected zone. The new cover plate was bolted in place with six J-bolts that were tack welded to prevent loosening. The repair was designed in accordance with ASME Section III, Subsection NG, and installed per CECO's ASME Section XI repair and replacement program. Examination of the repair will be performed during future refueling outages.

- (2) CECO personnel performing visual examinations of 32 CRD bolts. Two bolts were found to be unacceptable because of corrosion.
- (3) GE personnel performing ultrasonic examinations (UT) on pipe to safe end weld No. 02M-F2. This weld was in the recirculation system. Ultrasonic examinations were also observed on pipe welds No. 32F-S5 and No. 32F-F4. These welds were in the feedwater system.

The IDNS inspector observed UT on pipe welds No. 105-S3, No. 105-S4, and No. 105-F5 and liquid penetrant examinations on pipe weld No. 105-F18 and associated longitudinal welds. These welds were in the shutdown cooling system.

- (4) GE personnel performing magnetic particle examinations on pipe welds No. 30B S17, No. 30B S16, No. 30B S14 and No. 30B S13. These welds were in the main steam system. The ANII also performed a surveillance of these activities.

No violations or deviations were identified.

### 3. Erosion/Corrosion (E/C) Activities (49001)

Commonwealth Edison Company began their E/C program in 1988. A formalized procedure and administrative controls were established to ensure continued long term implementation of an E/C monitoring program for piping and components (Reference NRC Inspection Report No. 50-265/91022(DRS)).

For this refueling outage, CECO selected an inspection sample of approximately 34 components, utilizing the EPRI Chec, Checmate computer program. Of the 34 components examined, 1 was unacceptable and repaired this outage. The NRC inspector reviewed the E/C program, procedures, NDE certifications, data from previous inspections, and observed Conam personnel performing ultrasonic thickness examinations

on piping components on the extraction and feedwater systems. The IDNS inspector also observed data analysis being performed.

To date, several components and pipe sections have been repaired/replaced as a result of the E/C program.

No violations or deviations were identified.

4. Modifications (37701)

a. High Pressure Coolant Injection (HPCI) Turbine Exhaust Line External Vacuum Breaker Line Modification No. M4-1-91-013B

The modification consisted of a new 4" vacuum breaker line, external to the torus and two new motor-operated gate valves for containment isolation purposes. The modification replaced the existing 2" internal line and two unisolable check valves. To complete the configuration of the new vacuum breaker line, four 4" check valves and six local leak rate testing (LLRT) tap lines with seven 3/4" globe valves were installed. Implementation of this modification included all piping/support additions and rework as well as all new electrical cables/components and instruments.

The NRC inspector observed Stone and Webster personnel performing cutting, fitting, and welding operations, and visually examined the completed work. The NRC inspector also reviewed work requests, drawings, weld data sheets and other related documentation. The modification was in accordance with ASME Section XI, and was found to be acceptable.

No violations or deviations were identified.

b. Water Level Instrumentation System (RVWLIS) Modification No. M4-1-87-059A and B

The purpose of this modification was to minimize the effect of reference column water boil-off on the "A" and "B" RVWLIS loops in a post-LOCA or high drywell temperature condition. This modification involved the installation of a new condensing chamber and a new condensate reservoir in each RVWLIS loop. The reference leg piping from the new condensing chambers and the new condensate reservoirs were rerouted, limiting the vertical drop to less than two feet inside the drywell. The reference leg piping from both loops were routed through penetrations No. X-108 (loop "A") and No. X-109 (loop "B"). The variable leg was

rerouted inside the drywell in order to eliminate the tie-in to the reference leg. The piping at penetrations No. X-49-A&D ("A" loop), and No. X-28A&D ("B" loop) was capped outside the drywell.

The NRC inspector observed Stone and Webster personnel performing cutting, fitting, and welding operations, and visually examined the completed modification. The NRC inspector also reviewed work requests, drawings, weld data sheets and other related documentation. The modification was in accordance with ASME Section XI and found to be acceptable.

No violations or deviations were identified.

5. Exit Interview (30703)

The NRC inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection and summarized the scope and findings of the inspection noted in this report. The NRC inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.