U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-304/80-07

Docket No. 50-304 License No. DPR-48

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, IL 60690

Facility Name: Zion Station, Unit 2

Inspection At: Zion Site, Zion, IL

Inspection Conducted: April 29-30, May 19-21, and June 3-4, 1980

Inspector: for W. J. Key 6/18/80

Approved By: D. H. Danielson, Chief 6/18/80
Engineering Support Section 2

Inspection Summary

Inspections on April 29-30, May 19-21, June 3-4, 1980 (Report No. 50-304/80-07)
Areas Inspected: Review of the ISI program and procedures for this refueling outage, observation of ISI examination activities, and review of examination results. The inspection involved a total of 51 on-site hours by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Commonwealth Edison Company (CECO)

*J. Maranyi, Technical Staff Supervisor
*R. C. Ward, Operating Engineer
*R. E. Shannon, ISI Coordinator
*C. G. Silich, ISI Technical Staff
*T. Lukens, Quality Control Supervisor
*R. Rostkowski
*B. Majhi, ISI Technical Staff

Westinghouse Electric Corporation (W)

*B. Lefebvre, Senior Engineer, Level III

Hartford Steam Boiler Insurance (Hartford)

J. Mislevy, Authorized Nuclear Inspector

*Denotes those present at the exit interview.

Functional or Program Areas Inspected

1. Inservice Inspection Program Review

The inspector reviewed the ISI program for this second outage, second period, of the ISI inspection interval 1980 inspection. Examinations are to be in accordance with the requirements of Plant Technical Specifications, Section 4.3, and the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1974 including Summer 1975 Addenda. The following systems and components from tables IWB-2600 and IWC-2600 of ASME Section XI are scheduled for examination during this outage:

Class 1 Items

Reactor Vessel
Pressurizer
Steam Generators
Piping Systems
Pumps and Valves

Class II Items

Excess Letdown Heat Exchangers
Residual Heat Exchangers
Seal Water Heat Exchangers
Non-Regenerative Letdwon Heat Exchangers
Regenerative Heat Exchangers

Volume Control Tank
Seal Water Injection Filters
Reactor Coolant Filters
Seal Water Return Filter
Piping Welds
Pressure Retaining Bolting
Residual Heat Removal Pumps
Centrifugal Charging Pumps
Positive Displacement Charging Pumps
Reactor Coolant Pump
Valves

No items of noncompliance or deviations were identified.

2. ISI Examination Procedure Review

The following Westinghouse ISI procedures were reviewed for changes and amendments:

ISI-8	Visual Examination
ISI-11	Liquid Penetrant Examination
ISI-15	Ultrasonic Examination of Studs, Bolts, and Nuts
ISI-47	Manual Ultrasonic Examination of Circumferential and Longitudinal Butt Welds in Ferritic Vessels of 2.5" Thick and Greater
ISI-70	Magnetic Particle Examination A field change was made, reviewed, and approved to this procedure during this outage permitting wet fluorescent examinations to be performed.
ISI-205	Manual Ultrasonic Examination of Full Penetration Circumferential and Longitudinal Butt Welds

No items of noncompliance or deviations were identified.

3. Personnel Certifications and Qualification

The following personnel records were examined for method and level of qualification in accordance with ASNT-TC-1A requirements:

	UT	PT	VT	MT	RT
Westinghouse Electric					
B. J. Lefebvre	III	III	III	III	IIR
J. W. Bell	IIR	II	IIA	II	II
Sonic Systems International					
B. Aston	II	II			
D. Bockey	II	II			
J. L. Cannizzo	II	II			
R. Curl	I	I			
L. McClain	II	II			
J. Obermeyer	I	I			

R. Spivy	II	II	II
S. Stanford	I	I	

No items of noncompliance or deviations were identified.

4. Equipment and Materials

The following equipment and materials were examined for certification and calibration:

Ultrasonic Calibration Blocks

Plant ID	Heat No.	Material
CWE-1	C1488	A351-CF-8M
CWE-5	14085	14" sch. 40, A358, C-1, Type 316-SS
CWE-12	M0937	8" sch. 40, A312, Type 316-SS
CWE-17	M6108	4" sch. 120, A312, Type 316-SS
CWE-21	3E263	1"x4"x13", SA-240, Type 304-SS
CWE-36	535771	10" sch. 160, A376, Type 316-SS

Ultrasonic Instruments

Sonic MK-1, S/N-00711E
Sonic MK-1, S/N-00712E
Sonic MK-1, S/N 774415
Sonic MK-1, S/N-780605
Branson-Sonoray 301, S/N-72101

Transducers

Manufacturer	Frequency MHZ	Size	S/N
Aerotech	2.25	1/2"x1"	B06923
Aerotech	1.0	1.0"	C29614
Aerotech	5.0	.5"	S3179
Aerotech	5.0"	.375"	J05710
Aerotech	2.25	.750	L09961
Aerotech	2.25	1/2"x1"	S773137
Aerotech	5.0	.250	19096
Aerotech	2.25	.5"	H18506

Couplant - Ultragel II, Batch E17960

Liquid Penetrant Materials

Penetrant - - Spot-Check, Batch No. 6A035
Developer - - Spot-Check, Batch No. 79L004
Cleaner - - Spot-Check, Batch No. 79J083

Magnetic Particle Materials

Magnaflux Yoke S/N-Y-6
Magnaflux 3A - Powder
Magnaflux 14 AM, Magnaglow Fluorescent Bath

No items of noncompliance or deviations were identified.

5. Observation of ISI Activities

The inspector witnessed the following examinations being performed during this outage:

Liquid Penetrant Examination

Reactor Coolant Filter, Welds 1 and 2
Procedure No. ISI-11, Revision 9
Sketch - Com-2.1310

Magnetic Particle Examination

Reactor Vessel, Studs, Nuts, and Washers
Procedure No. ISI-70, Addenda 1
Sketch - Com-1-1400

Ultrasonic Examination

Pressurizer
Circumferential Weld No. 1
Procedure No. ISI-205
Sketch - Com-1-2100
Calibration Block - CWE-24

Ultrasonic Examination

Steam Generator No. 1 (A)
Channel head to tubesheet weld 1-1
Sketch - Com-1-3100, Calibration Block CWE-27
Procedure No. ISI-47

Liquid Penetrant and Visual Examination

Reactor Coolant Pipe Weld 1DM
Calibration Block CWE-1
UT, Instrument, S/N 60712E
Procedure No. ISI-8 and 11

No items of noncompliance or deviations were identified.

6. ISI Examination Documentation Review

During this examination period a total of 39 recordable indications were identified and are being dispositioned, or corrected. The

inspector reviewed records of examinations performed which included the following:

Program Item No. 22-23
Sketch Reference 1-4400
Safe-End Welds, 5DM-6DM
Ultrasonic and Penetrant Examination

Program Item No. 30 and 31
Sketch Reference 1-6100
Loop Stop Valves
Ultrasonic and Visual Examination of Bolting

Program Item Nos. 1 through 7 (C-II)
Steam Generators
Weld Nos. 1-2, 1-3, 2-5, 3-6, 4-8, 3-9, 4-10
Procedure No. ISI-47
Ultrasonic Examination

RHR Take-Off, 14"
Sketch Reference - Com-2-25-02
Procedure ISI-205 (UT)
Instrument - Sonic MK-1, S/N-780605
Calibration Block CWE-5

RHR Take-Off, 12"
Procedure ISI-205 (UT)
Instrument - Sonic MK-1, S/N-774415
Calibration Block CWE-6

Steam Generators
Sketch Reference - Com-1-3100
Welds 1-1, 2-1, 3-1, 4-1 (Butt)
Procedure ISI-47
Instrument - Sonic MK-1, S/N-00711E
Calibration Block CWE-24

Reactor Coolant Pipe 29"
Sketch Reference - Com-1-4200
Weld No. 1DM
Procedure ISI-205 and ISI-8 (PT)
Instrument - Sonic MK-1, 00712E
Calibration Block CWE-1

The inspector reviewed the following radiographs of the feedwater nozzle repairs made in accordance with the requirements of IE Bulletin 79-13:

Nozzle 2A
Weld No. FW-489

Nozzle 2B
Weld No. FW510

Nozzle 2C
Weld No. FW-497

Nozzle 2D
Weld No. FW503

No items of noncompliance or deviations were identified.

7. Reactor Water Storage Tank (RWST) Unit 2

During an investigation conducted in accordance with IE Bulletin No. 79-17, boric acid crystal build-up was observed on the RHR return line 2S1003-8"-L-R. On August 31, 1979 the licensee sent a diver into the tank who identified welds in the line plate as the cause of the leakage.

On September 4, 1979, the licensee reported their actions to the NRC resident inspector, which was documented in IE Report No. 50-304/79-17.

On September 5, 1979, the licensee and RIII staff held a conference call, at which time the licensee informed the staff of their actions, and their justification for remaining on line until this refueling outage; then they would drain, examine and repair the tank. The RIII staff concluded that the licensee's actions were acceptable and created no health or safety hazard. During this outage the RWST was drained, and the welds liquid penetrant examined. Indications were noted, and removed by grinding, re-examined and rewelded. Following welding the welds were visually and liquid penetrant examined, and found acceptable.

It is believed by the licensee that leakage was due to poor weld quality during construction and not IGSCC. The repair actions taken by the licensee close the open item in IE Report 50-304/79-17.

No items of noncompliance or deviations were identified.

8. Exit Interview

The inspector met with licensee personnel (denoted in the Persons Contacted paragraph) at the conclusion of the inspections on April 30, May 21, and June 4, 1980. The inspector summarized the scope and findings of the inspection.