

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/85026(DRS); 50-455/85018(DRS)

Docket Nos. 50-454; 50-455

Licenses No. NPF-23; CPPR-131

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, Illinois 60690

Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Site, Byron, Illinois

Inspection Conducted: June 3, 19-20, and 24-25, 1985

*K. D. Ward*  
Inspector: K. D. Ward

7/10/85  
Date

*D. H. Danielson*  
Approved By: D. H. Danielson, Chief  
Materials and Processes Section

7/10/85  
Date

Inspection Summary

Inspection on June 3, 19-20, and 24-25, 1985 (Reports No. 50-454/85026(DRS); 50-455/85018(DRS))

Areas Inspected: Unannounced special safety inspection of steam generator shell repairs; welding of reactor vessel intervals; record review of safety-related structures; and review of radiographs and reports of field piping welds. The inspection involved a total of 36 inspector-hours by one NRC inspector.

Results: No violations or deviations were identified.

## DETAILS

### 1. Persons Contacted

#### Commonwealth Edison Company (CECo)

\*R. Klinger, QC Supervisor  
\*G. Briette, QA Engineer  
M. Lohmann, Assistant Construction Superintendent  
J. Worridge, QA Supervisor  
J. Porter, Construction Supervisor  
R. Moravec, Mechanical Supervisor  
W. Witt, Level III NDE

#### Westinghouse Electric Corporation

B. Humphries, Mechanical Engineer  
M. Monkelis, Coordinator

#### Nuclear Installation Services Company (NISCo)

D. Stringer, QA/QC Manager

#### Blount Brothers Corporation (BBC)

R. Bay, QA/QC Manager

#### Nuclear Regulatory Commission (NRC)

J. Hinds, Jr., Senior Resident Inspector

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

\*Denotes those attending the final exit interview June 25, 1985.

### 2. Steam Generator Shell Repairs, Unit 2

An ultrasonic examination (UT) was performed on various indications in girth welds on Unit 2 steam generators (SG). These indications as reported in the preservice inspection (PSI) were rejectable by EBASCO to ASME Code Section XI requirements. Reexamination of these indications was performed by CECO to confirm independently their location and the size. The following listing denotes the steam generator, weld and indication location.

<u>S. G. No.</u>	<u>Weld No.</u>	<u>Indication Location</u>
2095	SGC-02 (tubesheet)	110" CCW
2096	SGC-05 (lower trans.)	212.75" CW
2097	SGC-02	107.25" CW
2097	SGC-06 (upper trans.)	139.25" CW
2098	SGC-06	40.625" CW

All the indications except the one in SG 2095 were located on or very near to the I.D. surface.

A radiographic review of the as built Unit 2 SG welds was made by CECo in the presence of Westinghouse in Pittsburgh, Pennsylvania. All the radiographs and welds complied to ASME Section III. The indications were not of the sizes reported in the baseline UT. Radiographs were also taken for information only of the five areas in November 1983 and were subsequently reviewed by CECo, Westinghouse and the NRC inspector. No unacceptable indications were noted. There were three views of each indication taken, 6° up, 6° down and straight on.

Core holes, 2½" diameter, were machined out of No. 1 #095, Weld #SGC02 and No. 3, #2097, Weld #SGC02 and were analyzed by Westinghouse. The final report will be submitted to CECo in the near future. The NRC inspector was informed by CECo that the results revealed that the indications were not as large as the indications previously identified by UT.

Westinghouse excavated only that amount of material necessary to remove the indications in an effort to maintain minimum wall thickness in No. 2, #2096, Weld #SGC05, No. 3 #2097, Weld #SGC06 and No. 4, #2098, Weld #SGC06, these activities were performed in accordance with the ASME Code, Section III, 1971 Edition, Summer 1972 Addenda, and Westinghouse procedures and specifications.

The NRC inspector visually examined the excavated area inside the steam generator No. 4, #2098, found it blended smooth and acceptable. The other areas in the remaining steam generators were not accessible. The NRC inspector also visually examined the 2½" diameter core holes in the SGs, threaded holes for the bolts, bolts for the flanges and the flanges and gaskets prior to installation.

The NRC inspector reviewed documentation related to the steam generators repairs including Installation/Fabrication Sequence sheets; drawings; NDE records; procedures and specifications. All the indications found by UT were observed being removed in the excavation process. Inspections and audits of these activities were performed by the ANI, (Lumbermens Mutual Casualty Company), CECo, Westinghouse and the ASME Audit Team. The NRC inspector agreed with the actions taken by the licensee. No violations or deviations were identified.

### 3. Reactor Vessel Internals, Welding, Units 1 and 2

#### Unit 1

The welding is completed and the unit is operating. The NRC inspector ascertained that the weld identification records were established to permit clear retrieval of accurate weld data in compliance with the ASME Code and licensee's procedures.

The NRC inspector reviewed related documentation for the welding activities of installing dowel pins in the instrumentation butt columns S/N #07038, weld # E-5T and weld #E-5B, indication removal in instrumentation butt column S/N #07038 and split pin modifications. The documentation included process control sheets and checklists; NDE records; drawings; weld material requisitions; welders certifications; procedures; and audits by NISCo and CECo.

The NRC inspector determined that the above activities were performed in accordance with applicable procedures.

No violations or deviations were identified.

#### Unit 2

The welding is completed and the NRC inspector ascertained that the weld identification records were established to permit clear retrieval of accurate weld data in compliance with the ASME Code and licensee's procedures.

The NRC inspector reviewed related documentation for the welding activities of replacement of guide tube support pins and clevises and installation of thermal sleeves. The documentation included process control sheets and checklists; weld material requisitions; welders certifications; procedures; NDE records; drawings; and audits by NISCo and CECo. The NRC inspector also observed the reactor vessel internals, visually examining items such as the support columns, support ring, and guide tube assemblies. The NRC inspector determined that the above activities were performed in accordance with applicable procedures.

No violations or deviations were identified.

#### 4. Safety-Related Structures, Welding - Review of Quality Records, Unit 2

The NRC inspector reviewed records for knee brace #1855, #1880, #6AB531-N and #6HB526-R, flange, #6AB176N-4 and cover plate #6AB161 and determined that the records were in conformance with established procedures and that the records reflected work accomplishment consistent with NRC requirements and SAR commitments. The NRC inspector reviewed weld inspection records; NDE records; field changes; drawings; welders certifications; procedures and other related documentation.

No violations or deviations were identified.

#### 5. Review of Radiographs Unit 2

The NRC inspector reviewed radiographs and reports of the following field welds in accordance with the ASME Code, Section III, 1974 Edition, Summer 1975 Addenda.

- a. The radiography for the following welds was performed by Pittsburgh Testing Laboratories (PTL) and all were found to be acceptable:

<u>System</u>	<u>Weld No.</u>	<u>Diameter</u>	<u>Thickness</u>	<u>Date RT</u>
RY-13-7	FW-175	4"	0.531"	11/15/83
RY-13-3	FW-177	4"	0.531"	11/15/83
RY-13-7	FW-176	4"	0.531"	11/15/83
RY-13-4	FW-179	6"	0.719"	07/11/83
RY-13-5	FW-180	6"	0.719"	01/18/84
RY-13-4	FW-178	6"	0.719"	07/11/83
RY-13	FW-113	4"	0.531"/0.521"	10/10/83
RY-13	FW-123	4"	0.740"/0.531"	01/23/84
SX-42	FW-2693	16"	0.375"	07/15/81
SX-42	FW-2699	10"	0.386"	11/10/81
SX-42	FW-2698	14"	0.375"	08/03/81
SX-42	FW-2697	14"	0.375"	10/28/81
SX-42	FW-2696	14"	0.375"	08/03/81
SX-42	FW-2695	14"	0.375"	08/10/81
SX-42	FW-2694	14"	0.375"	08/05/81
SX-42-6	FW-2700	10"	0.365"	11/09/81
SI-37	FW-621	24"	0.688"	02/10/83
SI-37	FW-622	24"	0.688"	02/24/83
SI-37	FW-623	16"	0.500"	10/01/82
SI-37	FW-624	16"	0.525/0.500	12/09/82
WO-7	FW-647	10"	0.365"	08/25/81
WO-7	FW-648	10"	0.365"	09/11/81
WO-7	FW-649	10"	0.365"	10/12/81
RD-17E	FW-10	12"	0.406"	04/30/80
RD-16E	FW-9	12"	0.406"	04/21/80
RD-15E	FW-8	12"	0.500"	04/15/80
RD-13E	FW-7	12"	0.406"	03/25/80
RD-12E	FW-6	12"	0.406"	01/03/80
SI-24	FW-796	4"	0.531"	12/21/82
SI-24	FW-793	4"	0.531"	12/30/82
SI-24	FW-794	4"	0.531"	12/28/82
SI-24	FW-795	4"	0.531"	12/16/82
OG-60	FW-492	3"	0.216"	06/29/82
OG-60	FW-499	3"	0.216"	05/03/82
OG-60	FW-491	3"	0.216"	04/26/82
CV-28-3	FW-3692	3"	0.438"	04/15/83
CV-28-3	FW-3694A	3"	0.438"	04/29/83
CV-28-3	FW-3696	3"	0.438"	04/15/83
CV-28-3	FW-3695A	3"	0.438"	06/26/83
CV-28-3	FW-3697A	3"	0.438"	04/21/83
CV-28-3	FW-3699	3"	0.438"	04/20/83
CS-17	FW-196	14"	0.375/0.471"	04/20/82
CS-17	FW-197	14"	0.375"	05/05/82
CS-17	FW-198	16"	0.525/0.375"	02/03/82
CS-17	FW-199	16"	0.525/0.375"	01/28/82
CS-17	FW-200	16"	0.525/0.375"	03/19/82
CS-17	FW-201	16"	0.375"	01/13/82
CC-33-1	FW-894	3"	0.216"	08/10/81
HCC-33-1	FW-893	3"	0.216"	10/01/81
HCC-33-1	FW-895	3"	0.216"	09/29/81
HCC-33-1	FW-896	6"	0.280/0.417"	09/21/81

<u>System</u>	<u>Weld No.</u>	<u>Diameter</u>	<u>Thickness</u>	<u>Date RT</u>
HCC-33-2A	FW-897	6"	0.419"/0.280"	08/20/81
CC-33-2A	FW-898	6"	0.280"	08/13/81
CS-18	FW-207	16"	0.375/0.525"	06/22/81
CS-18	FW-208	14"	0.375"	06/15/81
CS-18	FW-204	14"	0.375"	09/04/81
CS-18	FW-206	16"	0.375/0.525"	07/08/81
CS-18	FW-205	16"	0.375/0.525"	10/28/82
CS-18	FW-203	14"	0.375"	09/21/81
CS-18	FW-202	14"	0.375"	09/25/81
LVO3E	FW-12	12"	0.406"	12/13/79
LVO2E	FW-11	12"	0.406"	10/10/79
LVO1E	FW-9A	12"	0.406"	02/03/81
LVO1E	FW-9	12"	0.406"	11/30/79
RF-5C	FW-13	3"	0.216"	02/10/83
RF-5C-2	FW-16	3"	0.216"	02/09/83
RF-5A	FW-10	3"	0.216"	06/11/82
RF-5C-2	FW-17	3"	0.216"	02/09/83
H-FSK-318-12	FW-3401	3"	0.216"	09/15/82
H-FSK-318-11	FW-3400	3"	0.216"	09/09/82
H-FSK-318-5	FW-3395	3"	0.216"	04/12/83
H-FSK-318-5	FW-3396	3"	0.216"	09/10/82
H-FSK-318-6	FW-3397	3"	0.216"	09/13/82
H-FSK-318-6	FW-3398	3"	0.216"	09/24/82
H-FSK-318-6	FW-3399	3"	0.216"	09/13/82
H-FSK-318-4	FW-3391	3"	0.216"	09/02/82
H-FSK-318-5	FW-3392	3"	0.216"	09/10/82
H-FSK-318-5	FW-3393	3"	0.216"	03/17/83
H-FSK-318-5	FW-3394	3"	0.216"	09/10/82
S-CV-100-229	FW-3194	2"	0.344"	11/09/82
S-CV-100-229	FW-3194A	2"	0.344"	12/03/82
S-CV-100-229	FW-3334	2"	0.344"	12/08/82
S-CV-100-229	FW-3424	2"	0.344"	11/23/82
S-CV-100-218A	FW-3030	2"	0.344"	01/31/83
S-CV-100-218A	FW-3020	2"	0.344"	05/24/83
S-CV-100-218A	FW-3021	2"	0.344"	05/02/83
S-CV-100-218A	FW-3022	2"	0.344"	04/28/83
S-CV-100-218A	FW-3023	2"	0.344"	05/05/83
S-CV-100-218A	FW-3024	2"	0.344"	06/17/83
1C-19E	FW-3	12"	0.406"	01/03/80
RC-15-1	FW-431	3"	0.438"	06/08/83
RC-15-2	FW-433	3"	0.438"	10/13/81
RC-15-2	FW-432	3"	0.438"	10/13/81
RC-15-2	FW-435	3"	0.438"	10/13/81
RC-15-2	FW-434	3"	0.438"	07/03/83
RC-15	FW-429	3"	0.438"	07/08/83
RC-15	FW-427A	3"	0.645/0.438"	05/24/84
VP-01E	FW-5	12"	0.406"	01/07/79
VP-02E	FW-8	12"	0.406"	05/09/80
VP-03E	FW-6	12"	0.406"	10/02/79
VP-04E	FW-7	12"	0.406"	12/20/79

- b. The radiography for the following welds was performed by Peabody Testing on the following welds:

<u>System</u>	<u>Weld No.</u>	<u>Diameter</u>	<u>Thickness</u>	<u>Date RT</u>
CS-11	FW-29	6"	0.280"	07/19/77
CS-11	FW-30	6"	0.322"	07/14/77
CS-11	FW-31	6"	0.280"	07/12/77
CS-11	FW-32	6"	0.280"	07/11/77
CS-11	FW-33	6"	0.280"	06/30/77
CS-11	FW-34	6"	0.280"	07/13/77
CS-11	FW-35	6"	0.280"	07/19/77
CS-11	FW-36	6"	0.280"	07/18/77

- c. The NRC inspector also reviewed radiographs and reports of the following field pipe welds in accordance with ANSI B-31.1. These radiographs were performed by PTL.

<u>System</u>	<u>Weld No.</u>	<u>Diameter</u>	<u>Thickness</u>	<u>Date RT</u>
MS-35	FW-22	32"	1.344"	02/05/82
MS-35	FW-23	32"	1.344"	01/12/82
MS-35	FW-24	32"	1.344"	10/06/81
MS-35	FW-25	32"	1.344"	10/15/81
MS-35	FW-26	32"	1.344"	01/25/82
MS-35	FW-11	41"	1.688"	05/30/80
MS-35	FW-10	41"	1.672"	05/23/80
MS-35	FW-9	41"	1.688"	07/31/81

No violations or deviations were identified.

#### 6. Exit Interview

The inspector met with site representatives (denoted in Persons Contacted paragraph) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection noted in this report. The 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.