

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

REGION III

Reports No. 50-329/81-16; 50-330/81-16

Docket Nos. 50-329; 50-330

Licenses No. CPPR-81; CPPR-82

Licensee: Consumers Power Company  
1945 W. Parnell Road  
Jackson, MI 49201

Facility Name: Midland Plant, Units 1 and 2

Inspection At: Midland Site, Midland, MI

Inspection Conducted: August 12-14, 1981

Inspectors: *(C.M. Erb)*  
C. M. Erb

9/1/81

*K.D. Ward*  
K. D. Ward

9/1/81

Approved By: *D.H. Danielson*  
D. H. Danielson, Chief  
Materials & Process Section

9/1/81

Inspection Summary

Inspection on August 12-14, 1981 (Reports No. 50-329/81-16; 50-330/81-16)  
Areas Inspected: Review of preservice inspection (PSI) work activities, nondestructive examination (NDE) personnel certifications, and data; containment (Structural Steel Welding) observation of work activities, review of quality records; reactor coolant loop piping - visual examination (VT) of welds and special welding applications; other safety-related piping - welding material control and welder qualifications; review of flued head type penetrations; status of internals work in reactor pressure vessel, status of one 50.55(e) item. The inspection involved a total of 37 inspector-hours onsite by two NRC inspectors.  
Results: No items of noncompliance or deviations were identified.

## DETAILS

### Persons Contacted

#### Consumers Power Company (CPCo)

\*T. Cooke, Project Superintendent  
\*D. Turnbull, Q.A. Superintendent  
\*L. Howell, Mechanical Supervisor  
\*M. Scheffer, Section Head  
\*J. Decker, NDE/Welding Supervisor  
\*J. Walton, Senior Engineer  
H. Allen, Q.A. Engineer

#### Bechtel Power Corporation (Bechtel)

\*E. Smith, Project Field Q.C. Engineer  
\*M. Dietrich, Project Q.A. Engineer  
\*W. Creel, Lead Q.C. Engineer  
\*R. Ash, Field Contracts Administrator  
R. Amos, Q.C. Engineer

#### Babcock and Wilcox Construction Company (B&W)

W. Lee, Manager  
W. Hall, NSS Systems Engineer

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

\*Denotes those attending the exit interview.

#### Licensee Action on Previous Inspection Findings

(Open) Deviation (329/80-01-02; 330/80-01-03): "No positive way of tracking design changes and assuring that completed work is modified in accordance with design changes and no procedure for handling design changes made after completion of work." CPCo is in the process of reviewing the criteria from Bechtel for making changes.

(Open) Unresolved Item (329/80-17-02; 330/80-19-02): "Radiographic linear indications of welds in two borated water storage tanks." A decision has been made by CPCo to have all questionable radiographic welds reradiographed.

(Open) 50.55(e): Snubber Bracket Bolts for Lateral Supports to Primary Coolant Pump, - Units 1 and 2, a total of 207 of 384 bolts of varying sizes were found by the licensee to be outside the specified hardness range. Aptech, a licensee consultant and B&W are making engineering studies on the

loads to these bolts under emergency conditions. The metallurgical quality of these bolts particularly in the above 2½" diameter sizes should be established before assigning emergency loads. NCR-M-01-9-0-081 is outstanding on this item.

Functional and Program Areas Inspected

The functional and program areas inspected are described in Sections I and II.

## Section I

Prepared by K. D. Ward

Reviewed by D. H. Danielson, Chief  
Materials and Process Section

### 1. General

CPCo received four allegations concerning B&S NDE work from an individual previously employed at the Midland Site (File 16.0, Serial 98FQA80, dated April 11, 1980). Three of the allegations were closed (Reference NRC Report No. 50-329/80-27; 50-330/80-28 and No. 50-329/81-06; 50-330/81-06). The fourth allegation has not been resolved to date. CPCo management in Jackson, Michigan is now reviewing the allegation.

CPCo contracted Nondestructive Test Engineering (NDT-Eng.) a Division of Hartford Steam Boiler Inspection and Insurance to review approximately 64,000 radiographs of shop film on a sampling plan. The radiographs are of shop welds, castings, and other material radiographed off site. The review started July 1981, and may be completed the first part of 1982. To date, approximately 3,700 films have been reviewed and the following discrepancies were found.

- a. Missing procedures
- b. Missing shooting sketches
- c. Missing readers sheets
- d. Incomplete fusion
- e. Slag
- f. Linear indications
- g. Inclusions
- h. Gas pockets
- i. Film rejected for plus or minus allowable density ranges.

The inspector reviewed radiographs of the following shop welds that NDT-Eng. personnel had reviewed. The radiography was performed by ITT Grinnell Industrial Piping, Inc., in accordance with ASME, Section III, 1971 Edition, Summer 1973 Addenda.

<u>System</u>	<u>Weld No.</u>	<u>Date Rt'd</u>
1FCB-17-5603-6-3	"A"	1/4/77
1FCB-39-5603-6-1	"B"	3/22/77
1HCB-16-5603-6-2	"C"	2/24/77
1HCB-16-5603-6-2	"A"	2/24/77
1HCB-16-5603-6-2	"C"	2/24/77
1-CC6-2-5603-7-5	"B"	10/20/77
1-CCB-2-5603-7-5	"E"	10/20/77
1-CCB-2-5603-7-5	"M"	10/20/77

The inspector also reviewed the following NDT-Eng. personnel NDE certifications in accordance with SNT-TC-1A, 1975 Edition.

<u>Name</u>	<u>RT</u>
S. Tucker	II
M. Flores	II
J. Polson	II
J. Moreno	II
B. Card	II

2. Preservice Inspection

References:

NRC Report No. 50-329/79-20; 50-330/79-21 (PSI)  
NRC Report No. 50-329/80-03; 50-330/80-03 (PSI)  
NRC Report No. 50-329/80-17; 50-330/80-18 (PSI)  
NRC Report No. 50-329/80-27; 50-330/80-28 (PSI)  
NRC Report No. 50-329/81-02; 50-330/81-02 (PSI)  
NRC Report No. 50-329/81-06; 50-330/81-06 (PSI)

a. NDE Personnel Certifications

The inspector reviewed the following B&W NDE personnel certifications in accordance with SNT-TC-1A, 1975 Edition:

<u>Name</u>	<u>PT</u>	<u>MT</u>	<u>UT</u>
B. Goranowski	II	II	
D. Ives			I

b. Observation of Work Activities, Review of Data Reports and Audits

The inspector observed the work and had discussions with personnel during a liquid penetrant examination on welds 2-CCA-9, 2-CCA-10, and 2-CCA-10A.

The inspector reviewed data reports and determined that they demonstrated that the QA/QC requirements were met.

The inspector also review CPCo audit No. M-01-21-1 of GEO Construction Testing (formerly Peabody Testing) on NDE activities dated May 13-18, 1981, and an audit in which CPCo contracted Southwest Research Institute to audit B&W during their eddy current examination dated June 29, 1981.

No items of noncompliance or deviations were identified.

3. Containment (Structural Steel Welding) Observation of Work Activities and Review of Quality Records

The inspector observed several RPV upper lateral supports where joint preparation and alignment were complete and welding had not started, also where welding was in progress.

The following procedures were reviewed:

Bechtel, QC and Documentation Procedure of Welding and Nondestructive Examination, WD-1, Revision 4, March 1976.

Bechtel, Welding Standard Welding Fabrication and Quality Control Documentation Requirements, WD-2, Revision 6, April 13, 1976.

Bechtel, Welding Standard, Performance Specification WQ-NF-1, Revision 0, September 26, 1973.

The inspector reviewed the following welder certifications.

<u>Name</u>	<u>No.</u>	<u>Name</u>	<u>No.</u>
G. Nelson	174	E. Scannell	162
G. Shaffer	061	J. Ricker	155

The inspector made a tour of the weld testing laboratory, reviewed material certifications and instructions for purchasing, receiving, storing, disbursing and handling of welding materials. Also reviewed CPGO Project Inspection Plan and Reports (surveillance) and Bechtel print drawing No. C-367(Q), Revision 1, RPV Upper Lateral Supports, Plan, Sections, and Details.

No items of noncompliance or deviations were identified.

4. Reactor Coolant Loop Piping - Visual and Special Welding Applications

The inspector visually examined the 28" RC pipe to steam generator and reactor welds No. WJ4-1, 4-2, 4-3, 4-4, 5-1, 5-2, 5-3, and 5-4, reviewed the following procedures, quality records and determined that applicable welding procedures and material were used and the appearance of the weld surface was acceptable.

Bechtel, General Welding Standards GWS-FM, Revision 4, July 16, 1976.

Bechtel, General Welding Standard, Thermocouple Attachment, GWS-TC, October 9, 1979.

Bechtel, Engineering Standard, Code Requirements for Postweld Heat Treatment of Field Welds, PHT-500, Revision 6, October 17, 1978.

Bechtel, Procedure Specification of Postweld Heat Treatment of Field Welds PHT-501, Revision 7, August 1, 1979.

Bechtel, Welding Procedure Specification P1-ALH, Revision 2, October 25, 1978.

Bechtel, Welding Standard Performance Specification WQ-1, Revision 12, July 1, 1980.

Bechtel, Welding Standard Performance Specification, WQ-2, April 14, 1980.

The inspector reviewed the following welder certification:

<u>Name</u>	<u>No.</u>	<u>Name</u>	<u>No.</u>
T. Biggs	064	V. Guoar	231

The inspector also review nonconformity report, dated December 6, 1978, weld control records, welding rod certs for E-80-15-C3, PT, MT, UT and RT NDE records, repair procedures for weld no. WJ44 and WJ5-2, and d

No items of noncompliance or deviations were identified.

5. Safety-Related Piping - Welding Material Control and Welder Qualification

The inspector toured the receiving, storing, and distribution of welding materials including, welding electrodes, filler metal, consumable inserts, fluxes and gases. The ovens were examined and the following procedures were reviewed:

Bechtel, Control and Documentation Procedure for Welding in ASME, Section III, Code Applications, Revision 0, May 1, 1978.

Bechtel, Welding Standard Procedure Specification, WFMC-1, Revision 6, February 24, 1978 (Receiving Inspection, Storage and Disbursement).

Bechtel, Welding Filler Material Procurement Requirements, WFMP-1, Revision 3, June 1, 1977.

The inspector reviewed the following welding certifications, including program for qualification of welders, a system for maintaining a continuous record of the qualification status of all welders, and toured the area of where the bend test is performed and the area of where the radiography may be performed for qualification of welders.

<u>Name</u>	<u>No.</u>	<u>Name</u>	<u>No.</u>
C. Hyatt	P-260	E. Hasse	P-91
P. Leddy	P-384	P. Farguaharson	P-385

The inspector reviewed radiographs and reports of the following field welds in accordance with ASME Section III, 1974 Edition, Summer 1976 Addenda. These welds were radiographed by Peabody Testing X-Ray Engineering Company.

<u>ISO No.</u>	<u>Weld</u>	<u>Date RT</u>
M634-7	FW49	12/3/80
M604-9	FW341C	12/1/80
M613-1	FW108R4	12/2/80
M617-5	FW249	12/3/80
M617-4	FW125	12/3/80
M634-5	FW114	12/3/80
M616-3	FW74	12/11/80
M613-2	FW71R3	12/4/80
M616-4	FW127R1	6/3/81
M612-1	FW92	12/8/80
M612-2	FW180	12/8/80
M617-4	FW128	12/8/80
M633-6	FW111	12/9/80
M633-6	FW112	12/9/80



## Section II

Prepared by C. M. Erb

Reviewed by D. H. Danielson, Chief  
Materials and Process Section

### 1. Review of Penetration in Units 1 and 2

- a. Almost all of the flued head type of penetrations were observed in both Units 1 and 2 to be installed. These penetrations were supplied by Tube Turns to the requirements of ASME Section III, 1974 Edition. Documentation for the following penetrations was examined and appeared to be acceptable to ASME requirements.

<u>Ident.</u>	<u>Pipe Size</u>	<u>Outside Dia.</u>	<u>Material</u>	<u>Comments</u>
1Z-38	18"x.938"	34"x.750"	Carbon St.	Impacts req.
1Z-27	10"x1.125"	16"x1.500"	Dissimilar	309 elect.
1Z-35	2½"x.375"	16"x.656"	Dissimilar	309 elect.
1Z-65	1½"x sched 160	16"x.656"	Dissimilar	309 elect.
1Z-71	6"x.432"	12"x.375"	C.S. to Alloy	H.T.
1Z-78	10"x.365"	16"x.656"	Dissimilar	WPP3P1-AT- AgR7

The penetrations for Unit 2 appeared to have been ordered to the same specifications and bear the same identification except the 1 prefix is replaced by a 2. All the butt welds in piping were made using the open butt procedure. In some cases the tests made by the fabricator, Tube Turns, were witnessed by a Bechtel inspector. The weld procedures and NDT results on the installation welds at the site were examined and appeared to be acceptable to ASME Section III, Class 2 requirements.

- b. Penetration 1Z38 which is a flued head type was electronically tested by Tube Turns. However, the test report is signed by a Level 1 inspector. Other test reports were checked and had been signed by a Level 2 UT inspector. Pending resolution, this matter is considered to be an unresolved item. (330-81-16-01)

No items of noncompliance or deviation were identified.

2. Documentation for NSS Valves

The three pressurizer relief valves were supplied by Dresser Industries to ASME Section III, 1971 Edition, Summer 1972 Addenda. One of these valves is an electromatic type 2½"x4", while the other two valves are setpoint type.

The Spray Control valves were 2½" inlet supplied by Rockwell Manufacturing to the same code requirements as the relief valves. However, the inspector noted that a later change to the FSAR indicated the Spray Control valves were brought to the requirements of ASME Section III, 1977 Edition, Summer 1979 Addenda.

In a telecon on August 17, 1981, the licensee explained that the Spray Control valves had been reordered from Target Rock Company to the later ASME Code.

No items of noncompliance or deviations were identified.

3. Status of Internals Units 1 and 2

The reactor pressure vessel for Unit 1 had been completely cleaned and vacuumed. At the time of the inspection, layers of clean Visqueen were being placed in the vessel, making it ready to fit the core support structure.

In Unit 2, the core support structure is installed and work to secure the nozzle flange and tube flange for the CRDN's has been stopped until a corrective action has been performed with regard to clearance near the flexitallc gaskets. Installation of incore flux tubing is complete for Unit 2 and Unit 1. This tubing, ¾" and 1" in size is butt welded together, with a plug subsequently pulled past the weld to insure non-interference from drop through of the weld.

No items of noncompliance or deviations were identified.

4. Status of Modification to Reactor Pressure Vessel Supports - Unit 2

The licensee is preparing to detension the holddown studs in Unit 2. Machining of the flats on the outside vessel wall where the lateral supports will bear is proceeding with three areas complete. A second milling machine is being prepared for this machining operation. B&W who are performing the work qualified the machine and operators on dummy pieces of plate which appeared to mock-up the vessel curvature.

For the detensioning and retensioning of the hold down studs, UT equipment will be used to ascertain extension figures at various loads.

No items of noncompliance or deviations were identified.

### Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during this inspection are discussed under Paragraph 1.b, Section II.

### Exit Interview

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