



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

Report No.: 50-389/78-11

Docket No.: 50-389

License No.: CPPR-144

Category: A2

Licensee: Florida Power & Light Company  
P. O. Box 013100  
Miami, Florida 33101

Facility Name: St. Lucie, Unit 2.

Inspection at: Hutchinson Island, Florida

Inspection conducted: November 6-9, 1978

Inspectors: B. R. Crowley

Reviewed by:

T. E. Conlon  
T. E. Conlon, Chief  
Engineering Support Section No. 2  
Reactor Construction and Engineering  
Support Branch

11/29/78  
Date

Inspection Summary

Inspection on November 6-9, 1978 (Report No. 50-389/78-11)

Areas Inspected: Routine unannounced inspection of reactor coolant pressure boundary pipe welding procedures, safety related pipe welding, containment welding. The inspection involved 25 inspector-hours on site by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

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## DETAILS I

Prepared by: J E Conlon for 11/29/78  
B. R. Crowley, Metallurgical Engineer  
Engineering Support Section No. 2  
Reactor Construction and  
Engineering Support Branch  
Date

Reviewed by: J E Conlon 11/29/78  
T. E. Conlon, Chief  
Engineering Support Section No. 2  
Reactor Construction and  
Engineering Support Branch  
Date

1. Persons Contacteda. Florida Power and Light Company (FP&L)

N. T. Weems, Assistant QA Manager  
\*W. M. Hayward, QA Engineer  
\*E. W. Sherman, QA Engineer  
J. W. Adams, QA Engineer  
R. A. Symes, QA Engineer  
B. M. Parks, QA Engineer  
\*D. R. Stone, Construction QC Superintendent  
J. L. Parker, Project QC Superintendent  
W. F. Jackson, Welding Superintendent  
W. N. Johnson, Site Piping Superintendent  
D. G. Eldridge, Piping Superintendent  
M. Taras, Materials Engineer

b. Contactor OrganizationsChicago Bridge and Iron Company (CB&I)

C. L. Fields, Project Welding and QA Superintendent  
D. M. Swann, QA Engineer

\*Denotes those present at the exit interview..

2. Licensee Action on Previous Inspection Findings

Actions on previous findings were not examined during this inspection.

### 3. 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. An unresolved item identified during this inspection is discussed in paragraph 5.

### 4. Independent Inspection Effort

The following areas of interest were examined by the inspector:

#### a. Containment Welding

The containment is being welded in accordance with the ASME Boiler and Pressure Vessel Code, Section III, Subsection NE, 1971 Edition with addenda through the Winter of 1972 as implemented by Ebasco Project Specification No. FLO-2998-757, "Ebasco Specification Steel Containment Vessel". The following records and in-process welding were examined by the inspector:

- (1) For the vessel shell and bottom head, post weld heat treatment (PWHT) records consisting of "Post Weld Heat Treatment Time Temperature Tabulations" and Strip Chart Recordings (#1 for thermocouples A1 - A24 and #2 for thermocouples B1 - B18) were reviewed and compared with the requirements of CB&I procedure HTP-(73-7302)-11B.
- (2) The inspector observed in-process welding of attachments 39-1 and 40-1 to Assy. A, Ring E and 78A-A, 64 C/L, and 64 D/L Assy. L, Ring E. Weld appearance, evidence of QC acceptance of fitup, welder qualification, and use of the correct welding procedure were examined.

#### b. Safety Related Pipe Welding

Safety related piping is being welded in accordance with the ASME Boiler and Pressure Vessel Code, Section III, Subsections NC and ND, 1977 Edition with addenda through the summer of 1977. The inspector observed the following Safety Injection in-process welds:

Weld 1	-	Line 362
Weld 10	-	Line 111

In-process weld records, weld appearance and welder qualification were examined.

- c. The inspector discussed with the licensee the plans for preservice inspection (PSI) of major equipment. Plans are to use shop post hydro inspection data to the extent allowed by the applicable Section XI ASME Code. The data will be presented to NRC for review at a future date after the data has been analyzed to insure that licensee commitments have been met.

In the areas inspected, no items of noncompliance or deviations were identified.

5. Reactor Coolant Pressure Boundary Piping (Welding) - Review of Quality Assurance Implementing Procedures

The inspector reviewed the quality assurance implementing procedures listed below, relative to reactor coolant pressure boundary pipe welding, to determine whether adequate procedures are included or referenced in the QA manual. The applicable welding code is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NB, 1977 Edition with addenda through the summer of 1977.

These procedures were reviewed in the areas of; witness or inspection hold point welding procedures and welding personnel, qualification of NDE procedures and personnel, calibration and maintenance of welding and NDE equipment, control of contaminants in NDE equipment, control and documentation of the welding and inspection processes, heat treatment procedures, evaluation of weld quality by the proper NDE method, defect repair, and welding material control.

a. "ASME Quality Assurance Manual"

- AQR 7.1, Rev. 1, "Receiving Inspection"
- AQR 9.0, Rev. 2, "Control of Installation Process"
- AQR 9.1, Rev. 3, "Control of Welding During Construction"
- AQR 9.2, Rev. 1, "Storage and Distribution of Materials"
- AQR 10.0, Rev. 2, "Examination and Test Verification"
- AQR 10.1, Rev. 2, "QC Inspection"
- AQR 15.4, Rev. 1, "Weld Repair Reports"

b. Construction Site Procedures

- CSP 5, "Weld Material Control"
- CSP 6, "Welder and Welder Operator Qualification"
- CSP 10, "Weld Repair Procedure"
- CSP 32, "Field Welding Control"
- CSP 40, "Control of Calibrated Measuring and Testing Equipment"
- CSP 41, "Control of Heat Treatment"

## c. Quality Instructions

- QI 2.7, Rev. 4, "NDE Personnel Qualification and Certification"
- QI 7.1 "Instructions for Receiving Inspection of Seismic or Safety Related Material"
- QI 9.2, Rev. 3, "Inspection of Field Welding"
- QI 9.3, Rev. 1, "Radiographic Inspection"
- QI 9.4, Rev. 1, "Magnetic Particle Inspection"
- QI 9.5, Rev. 3, "Liquid Penetrant Inspection"
- QI 9.9, Rev. 0, "Ultrasonic Inspection"
- QI 12.1, Rev. 2, "Control & Calibration of Tools, Gauges and Test Devices"

## d. QA Manual

- QP 9.1 "Control of Special Processes for Construction"
- QP 10.2, "Inspection of Plant Construction"

## e. Administrative Site Procedures

- ASP 6, "Control of Special Processes"

During review of the above procedures the inspector identified two problems with the procedures to be used for the control of heat treatment.

- (1) The site has decided to use the 1977 edition of Section III of the ASME Code including addenda through the summer of 1977 for piping installation. However, the heat treatment procedure, CSP 41, requires the use of the "latest edition and addenda" of the code. Paragraph NCA 1140(e) of the 1977 edition of Section III of the code states that, "It is permitted to use specific provisions within an Edition or Addenda provided that all related requirements are met." Therefore, the use of the "latest edition and addenda" for heat treatment would require a review each time a new edition or addenda is issued to insure that all related requirements are being met. The licensee stated that the procedure has not yet been used and will be revised prior to use to specify a specific edition and addenda to the code.
- (2) The procedures for the control of heat treatment do not contain any requirements for the method of heating or the controls to be used where a preheat temperature other than ambient is to be used. The licensee stated that this was an oversight, but no pipe welds requiring preheat other than ambient have yet been welded. The licensee further stated that controls will be added to applicable procedures.

These two problems with procedures for the control of heat treatment will be considered unresolved and identified as item Number 389/78-11--01.

In the areas inspected, no items of noncompliance or deviations were identified.

6. Safety Related Piping (Welding) - Review of Quality Assurance Implementing Procedures

The procedural review and inspection results of paragraph 5 above also apply to safety related pipe welding in that safety related piping is being welded under the same control procedures as reactor coolant pressure boundary piping. The welding code referenced in paragraph 5 applies except that subsections NC and ND are applicable in lieu of subsection NB.

7. Exit Interview

The inspector met with licensee representatives denoted in paragraph 1 at the conclusion of the inspection and summarized the scope and findings of the inspection. The unresolved item of paragraph 5 was discussed and the licensee stated that procedures would be revised to resolve the problem. The inspection included observation and review of records for containment welding, observation and review of procedures for pipe welding, and discussion of PSI plans.