UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

IE Investigation Report No. 50-335/80-15

Subject: Florida Power and Light Company
St. Lucie
Docket Number 50-335

Allegations relative to ASME Code requirements for safety injection valves and installation of containment penetrations.

Period of Investigation: April 10 - May 14, 1980

Investigators: R. J. Marsh — 6/18/80
R. J. Marsh, Investigator, Office of the Director — Date Signed

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I. INTRODUCTION

During a public meeting at Hutchinson Island, Florida in early November 1979, an individual made statements regarding inadequacy of NRC's inspection efforts. The investigators subsequently contacted the individual to determine the basis for his statements and determined that he felt the NRC response to allegations he made in 1975 regarding St. Lucie (Docket No. 50-335), Millstone (Docket No. 50-336) and Duane Arnold (Docket No. 50-331) was inadequate. The individual was contacted by letter and telephone in December 1979 and again in April 1980. On April 10, 1980, representatives of Region II met with the individual to discuss his concerns. After discussing his concerns, as expressed today, and reviewing NRC's response in 1975, it appeared that further investigation should be made into the allegations. As a result, an investigation was initiated into the following allegations relative to St. Lucie:

NOTE: Allegations relative to Duane Arnold and Millstone have been forwarded to the appropriate NRC regional offices.

A. Main Steam system and electrical penetrations were not installed into the primary containment in accordance with the applicable ASME code in that the ANI (Authorized Nuclear Inspector) inspections were not performed and therefore the required code data reports were not properly filled out or were not filled out at all.

B. Safety Injection system valves may not have met applicable code requirements in the area of code data reports and code stamping.

The investigation at the St. Lucie site commenced on April 29, 1980. During April 29 - May 2, 1980 and again May 13-14, 1980, the investigator visited the site and reviewed records and interviewed licensee and contractor personnel.

The onsite investigation was concluded on May 14, 1980 with a meeting of NRC and St. Lucie management. The preliminary results of the investigation were given to the licensee.

This investigation was conducted under the authority provided by Part 1.64, Title 10, Code of Federal Regulations and required a total of 30 man-hours of investigative effort.

II. SCOPE OF INVESTIGATION

The scope of the investigation included the following:

A. Interviews with various licensee and contractor personnel to establish the policy and interpretation applied during construction of the plant relative to the use of certain codes, code stamping requirements, etc.

B. Review of licensee requirements and commitments relative to codes, code stamping requirements, etc., for containment penetrations and safety injection valves.

C. Review of procurement and installation documentation for containment penetrations and procurement documentation for safety injection valves.

D. Visual inspection of as-installed safety injection valves.

III. CONCLUSIONS

Based on requirements of applicable codes as specified in the FSAR, the allegations could not be substantiated.

IV. DETAILS OF THE INVESTIGATION

A. Persons Contacted

In addition to the alleger the following individuals were contacted:

Florida Power and Light Company (FP&L)

C. M. Wethy, Plant Manager
G. M. Vaux, QC Supervisor
A. W. Bailey, QA Operations Supervisor
N. G. Roos, QC Engineer
J. H. Barrow, Operations Superintendnet
D. L. McAfee, Senior QA Engineer
W. M. Gaines, Power Plant Engineering (Unit 2)
J. R. Behres, Mechanical Area QC Supervisor (Unit 2)
J. P. Lewis, Vault Custodian

EBASCO Services, Inc. (EBASCO)

J. E. Howell, Mechanical Engineer
J. P. Morales, Assistant Project Engineer

B. Allegations, Discussions and Findings

1. Allegation

Main Steam system and electrical penetrations were not installed into the primary containment in accordance with the applicable ASME code in that the ANI (Authorized Nuclear Inspector) inspections were not performed and therefore required code data reports were not properly filled out or were not filled out at all.

Discussion

The investigator reviewed licensee requirements, examined procurement and installation records for a selected sample of penetrations, and interviewed various licensee and contractor personnel relative to code stamping and code data reporting.

a. Requirements

(1) General

The ASME codes require certain fabrication and nondestructive (NDE) inspections by the manufacturer or fabricator of a component or system. In addition, for certain applications, ASME Section III requires an ANI to perform certain inspections and witness and approve N-stamping. The code N-stamp and various supporting code data reports provide evidence of required ANI inspections and code construction. A component or system could be designed and fabricated using all of the fabrication and NDE inspections required by the code without the code N-stamp. The requirements for stamping and code data reports have changed drastically over the years as new code cases and addenda have been issued. The winter of 1969 addenda and code cases issued in 1969 added many requirements for stamping and code data reports. These requirements although issued prior to installation of the containment penetrations did not apply based on the code addenda required by the FSAR as noted below. It should be noted that the Code of Federal Regulations, 10 CFR 50.55(a) states that the ASME N-stamp is not required for class 1 systems and components.

(2) Specific

The investigator reviewed the St. Lucie FSAR and the various codes committed to in the FSAR applicable to the containment vessel and its penetrations (mechanical and electrical) to determine the applicable code stamping and data report requirements. The following is a summary of these requirements:

FSAR - Paragraph 3.8.2.1.4 requires that the containment vessel be designed, fabricated and tested in accordance with the requirements the ASME Boiler and Pressure Vessel Code, Section III, Subsection B, including all addenda through the winter of 1968. The containment vessel is code stamped,

Paragraph 3.8.2.1.10.b requires that the primary penetration assemblies for electrical penetrations be designed, fabricated and tested in accordance with IEEE-317, April 1971.

Paragraph 3.8.2.1.10.c requires that all piping penetration nozzles meet the requirements for Class B vessels under ASME Section III. Piping for penetration assemblies is designed in accordance with ANSI B31.7, Class 2 except for the four safety injection penetrations which are Class 1. Multiple flued heads are designed in accordance with ASME Section III, Subsection B and Section VIII.

IEEE-317
April 1971

Paragraph 4-1 requires that mechanical design, fabrication, examination, and testing be in accordance with the requirements of the ASME Code, Section III, Subsection B.

ASME III
Winter
1968

Paragraph N-1500 requires stamping and reporting in accordance with Article 8.

Article 8 specifies a N-stamp and code data report N-1 for the vessel manufacturer and a N-PART stamp and partial data report N-2 for parts of a vessel requiring inspection which are furnished by other than the manufacturer responsible for the completed vessel.

Paragraph 151 states that the jurisdiction of this section of the code is terminated at the first circumferential joint exclusive of the weld where connections are provided for attaching piping to the vessel. This requirement is clarified in paragraph N-1112 of the Summer 69 addenda to clearly exclude the penetration and penetration to containment nozzle weld.

ANSI B31.7 1969	Paragraph 1-736.1 for Class 1 states that compliance with all requirements of this code shall be determined by an authorized Code Inspector when a code stamp is required. It is further stated that data report forms are included for use in developing the necessary inspection records. Paragraph 2-736.1, for Class 2, further states that inspection by an inspector is a requirement of this code where required by legal enforcement authorities. The code does not specify when a stamp is required.

b. Examination of Procurement and Installation Records

(1) Electrical Penetrations

The investigator reviewed the following procurement and installation documentation for electrical penetrations A8 and A9:

- Ebasco Purchase Order NY-422262
- Vendor material test reports and certification records
- Code data report forms N2
- Installation and Test records
- Construction Field Weld installation weld data reports
- Installation specification CP-13
- Procurement specification FL-8770-307

These records were not reviewed in detail but only to determine whether required records (fabrication, installation and NDE plus code stamping and data reporting information) were available. It appeared that the necessary fabrication, installation, and NDE records were available. For procurement, the code data was based on the order date. Therefore, the electrical penetrations were manufactured and stamped (N-PT) to class MC requirements of the 1971 Edition of ASME Section III. Code data report N-2 forms were available to show this information.

Review of the construction field weld installation data reports revealed that an ANI had witnessed certain hold points during installation of the penetrations. However, N-5 code data reports for the installation were not available. By the winter addenda to the 1968 Edition of Section III, the penetrations and their attachment to the containment were excluded from jurisdiction of the code and therefore, code stamping and code data reporting were not required (see requirements above). If the code cases of August 1969 and later editions to Section III had applied, then code stamping and code data reports would have been required. Discussion with the licensee revealed that some ANI hold points were assigned to a sample of electrical penetration installation welds as added quality assurance and not as a code requirement.

(2) Mechanical Penetrations

The inspector reviewed the following procurement and installation and documentation for mechanical penetrations P-38 and P-2. Penetration P-38 is a Type III, Class 1, Safety Injection penetration and P-2 is a Type I, Class 2 main steam penetration.

- EBASCO Purchase Order NY-422264
- Vendor material test reports and certification records
- Code data report NP-1 (P-38 only)
- Construction field weld installation data reports
- Procurement specification FLO-8770.124

The records were not reviewed in detail, but only to determine whether necessary records (fabrication, installation, and NDE test records as weld as code stamping and data reporting information) were available. It appeared that the necessary fabrication, installation, and NDE records were available. Discussion with the licensee and the licensee's contractor revealed a decision was made to code stamp all class 1 components where practical. This was not a requirement based on the required codes but based on the licensee's decision to take added assurance and a more conservative approach at the time code N-stamping requirements were being developed. Therefore, the P-38 class 1 penetration was code stamped NP-1 and the NP-1 form was available. The P-2 Class 2 penetration was not code stamped and a code data report was not available.

There was no evidence of code stamping or N-5 code data reporting for the field welds connecting the penetrations to the containment for either penetration. By the winter 1968 Edition of Section III, the installation welds do not require code stamping and code data reports. Again, if the code cases of August 1969 and later editions to Section III had applied, then code stamping and code data reports would have been required for the installation welds.

FINDINGS

The allegation was not substantiated. No items of noncompliance or deviation were identified.

2. Allegation

Safety Injection System valves may not have met applicable code requirements in the area of code data reports and code stamping.

Discussion

The inspector reviewed licensee requirements, examined procurement records, interviewed licensee and contractor personnel, and visually examined two system valves relative to code stamping and data reporting.

a. Requirement

The general statements, except as specific to penetrations, of paragraph IV.B.1.a.(1) above apply. The investigator reviewed the St. Lucie FSAR and the code committed to in the FSAR applicable to the safety injection valves to determine the applicable code stamping and data report requirements. The following is a summary of these requirments:

FSAR	- Tables 3.2.-1 and 6.3-2 require that safety injection valves meet the Draft ASME Code for Pumps and Valves, November 1968.
Draft ASME - Code for Pump & Valves Nov. 1968	Article 8 specifies marking requirements and code data reporting (form NPV-1) for class 1 valves. Article 28 specifies marking requirements for class 2 valves but does not cover data reporting. N-stamping is not covered in the code for either class.

b. Examination of Procurement Records

The investigator reviewed the following procurement documentation for valves V-3124 (Class 1 check valve) and HCV-3625 (Class II motor operated valve):

- Combustion Engineering Purchase Order 9002051 and 9003381
- Vendor material test reports and certification records
- Code data report form NPV-1 (for valve V-3124 only)
- Combustion Engineering Purchasing Specifications 19367-487-705, 19367-487-708, and 00000-PE-707

These records were not reviewed in detail but only to determine whether records were available to show compliance with applicable requirements. The code data report NPV-1 was received for the Class I valve but not the Class II valve. As noted in paragraph a. above, this meets the applicable code requirements.

c. Visual Examination of Installed Valves

The inspector visually inspected valves V-3124 and HCV-3625 for evidence of code stamping. Valve V-3124 is code stamped "N-PV" and valve HCV-3625 is not code stamped. As noted in paragraph a. above, the applicable code does not require code stamping of either valve. However, as noted in paragraph B.1.b.(2), a decision was made to code stamp all Class I components where practical based on licensee's decision to take added assurance and a more conservative approach at the time code N-stamping was being developed.

FINDINGS

The allegation was not substantiated. No items of noncompliance or deviations were identified.