

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

Report No. 99900505/80-02

Program No. 51200

Company: EBASCO Services, Incorporated
Two World Trade Center
New York, New York 10048

Inspection at: New York, New York and Jericho, New York

Inspection conducted: July 21-25, 1980

Inspectors:

CJ Hale/for
J. R. Costello, Principal Inspector
Program Evaluation Section
Vendor Inspection Branch

8-15-80
Date

JR Agee
J. R. Agee, Contractor Inspector
Program Evaluation Section
Vendor Inspection Branch

8/15/80
Date

Approved by:

CJ Hale/for
C. J. Hale, Chief
Program Evaluation Section
Vendor Inspection Branch

8-15-80
Date

Summary

Inspection on July 21-25, 1980 (99900505/80-02)

Areas Inspected: Implementation of Topical Report No. ETR-1001 in the areas of IE Bulletin 79-14 and 79-02, Design Interfaces, and followup on inspector identified problems and unresolved items. The inspection involved sixty-two (62) inspector-hours on-site by two (2) USNRC inspectors.

Results: In the three (3) areas inspected, two (2) deviations were identified in one area. There were no unresolved items.

Deviations: IE Bulletin 79-14 (1) Procedures developed for St. Lucie Plant, Unit 1, IE Bulletin 79-14 were inadequate and were not approved until work was virtually completed. (2) Damping values used in seismic analysis for the as-built safety-related piping system for St. Lucie Plant, Unit 1 did not use the values provided in the SAR.

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DETAILS SECTION I

(Prepared by J. R. Costello)

A. Persons ContactedRegion II Employees

- ***R. M. Compton, Civil Engineer
- ***L. Modenos, Reactor Inspector

Florida Power & Light Company Employees

- **L. W. Bladow, Quality Assurance Engineer
- **S. P. Corona, Quality Assurance Engineer
- **S. T. Hale, Senior Mechanical Engineer
- **C. S. Kent, Project Manager, Engineering
- **J. Krumins, Engineering Site Representative

Virginia Electric & Power Company Employees

- *R. K. MacManus, Associate Engineer
- *R. H. Woodall, III, Engineer

Ebasco Services Inc. Employees

- J. Albanes, Supervising Engineer Stress Analysis
- *T. H. Blodgett, Assistant Project Manager
- *S. Chakraborti, Senior Engineer
- W. Chang, Principal Design Engineer
- W. Fan, Lead Stress Analyst
- *N. A. Koperberg, Project Engineer
- *S. W. Korde, Supervisor for Stress
- **G. N. Krauss, Civil Engineer, 79-14 Coordinator
- *M. Labib, Senior Engineer
- **R. C. Lehrer, Assistant Project Manager
- M. L. Mancini, Senior Supervising Engineer
- **S. Missailidis, Project Quality Assurance Engineer
- *H. W. Nelson, Project Manager
- **J. Ruimerman, Supervising Engineer, Supports/Restraints
- R. Russo, Lead Architectural & Structural Engineer
- **J. R. Santosuosso, Assistant Chief Engineer Mechanical & Nuclear
- *N. J. Shah, Lead Design Engineer for Stress
- **S. M. Stollman, Quality Assurance Engineer
- **F. Stomel, Senior Supervising Engineer, Stress Analysis

*Attended July 25, 1980, exit meeting at Jericho N.Y.

**Attended July 23, 1980 exit meeting at N.Y., N.Y.

***Attended July 23 & July 25 exit meetings.

B. Action on Previous Inspection Findings

1. (Open) Deviation (Report 80-01): Contrary to Ebasco Topical Report ETR-1001, suppliers have not been required in all cases to furnish a detailed fabrication sequence showing required tests and inspections. Scheduled completion of corrective and preventive action is not due until September 1980.
2. (Open) Deviation (Report 80-01): Contrary to Ebasco Topical Report ETR-1001 on the WNP 3/5 project, personnel other than the Project Quality Assurance Engineer are obtaining review and comments on procedures. Scheduled completion of corrective and preventive action is not due until September 1980.
3. (Open) Unresolved Item (Report 80-01): It is not clear whether the PSAR commitments to ANSI daughter standards and/or the Gray Book for two projects requires passing these commitments to vendors either by incorporation or reference in the purchase order, when applicable to the vendor scope of work. Ebasco has researched this problem and states that the pertinent requirements of the daughter standards were passed on. However, the inspector did not have time during this inspection to review the Ebasco documented evidence.

C. Followup on IE Bulletins 79-14 and 79-02

1. Objectives

This was a special inspection related to the followup of activities being conducted at the New York and Jericho offices of Ebasco Services, Inc., which have resulted from the issuance of IE Bulletin 79-14 (Seismic Analysis for As-Built Safety-Related Piping Systems) and IE Bulletin 79-02 (Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts). The inspection was a joint effort of the inspectors from Region II and Region IV. Matters pertaining to the programmatic aspects of Ebasco efforts are reported in this report (80-02) and the other aspects of this inspection will be reported in the Region II report 50-281/80-30.

2. Method of Accomplishment

The preceding objectives were accomplished by discussions with cognizant Ebasco personnel and by examination of pertinent documents. The documents reviewed by the Region IV inspector are listed below:

- a. Florida Power & Light Company
St. Lucie Plant Unit No. 1
Final Safety Analysis Report Vol. No. 2, Section 3.7.

- b. Florida Power & Light Company
St. Lucie Plant Unit No. 2
Final Safety Analysis Report Vol. No. 4 Section 3.7
- c. Stress Analysis Review Procedure For Compliance with NRC Bulletin
79-14 FP&L St. Lucie Plant Unit 1.
- d. Criteria and Procedures For the Evaluation Of Support/Restrains
To Satisfy NRC Bulletin IE 79-14 FP&L St. Lucie Plant Unit 1.
- e. NRC Bulletin IE 79-14, Restraint and Piping Inspection Final Review
Of Packages, FP&L St. Lucie Plant Unit 1.
- f. IE/Directive Compliance Support Program Plan and Procedures -
Surry Nuclear Generating Facility - Unit No. 2.
- g. Project Procedures Manual, Surry Unit No. 2.
- h. SI-N-3, Piping Isometric
- i. SI-199-17, Stress Isometric
- j. SI-N-7, Piping Isometric
- k. SI-199-19, Stress Isometric
- l. SI-676-320, Support
- m. SI-6K-3155, Support/Restraint
- n. NRC 79-14 Bulletin Restraint Verification Index - St. Lucie 1
- o. NRC 79-14 Stress Analysis Review List - St. Lucie 1
- p. NRC 79-14 Response from Support/Restraint (S/R) Group -
St. Lucie 1
- g. NRC 79-14 Response from Field - St. Lucie 1

3. Findings

a. Deviations

See enclosure Notice of Deviation, items A and B

b. Unresolved Items

None.

D. Exit Meetings

There were three (3) exit meetings. One covering the followup of IE Bulletins 79-14 and 79-02 for St. Lucie 1 was held in New York on July 23, 1980, one covering the followup of IE Bulletins 79-14 and 79-02 for Surry 2 was held in Jericho on July 25, 1980, and one covering the regular programmatic inspection was held in New York on July 25, 1980. The results of the July 23, 1980 exit meeting are reported below. The exit meeting at Jericho will be reported in Region II Report 50-218/80-30 and the exit meeting in New York on July 25, 1980, is reported in Section II of this report.

The exit meeting covering the followup of Bulletins 79-14 and 79-02 for St. Lucie 1 was conducted with management representatives at the conclusion of this area of the inspection on July 23, 1980. In addition to the individuals indicated in paragraph A. above, those in attendance were:

- J. F. Marek, Quality Assurance Auditor
- B. R. Mazo, Chief Quality Assurance Engineer
- R. F. Williams, Supervising Quality Assurance Engineer

The Region II and Region IV inspectors summarized the scope and findings of the inspection for those present at the meeting. Management representatives acknowledged the statements of the inspectors.

DETAILS SECTION II

(Prepared by J. R. Agee)

A. Persons Contacted

- *G. E. Attarian - Lead Electrical Engineer
- K. Chow - Supervisor, Mechanical-Nuclear
- T. A. Cotter - Principal Engineer, Quality Assurance
- P. Grossman - Project Licensing Engineer
- *R. J. Nespeco - Assistant Project Engineer
- *V. Oniunas - Lead Engineer, I&C Controls
- *M. Szrajer - Lead Engineer, I&C Instrumentation
- *J. M. Vargas - Lead Engineer, Mechanical-Nuclear

*attended the exit interview

Note: R. N. Marsh - Supervisor, Quality Assurance Engineering, Florida Power & Light was in attendance, as an observer, throughout the inspection, including the exit interview.

B. Design Interfaces1. Objectives

The objectives of this part of the inspection for both internal and external interfaces were to determine that procedures have been established and implemented that:

- a. Require that design organizations identify, in writing, their interfaces for managing the flow of design information.
- b. Define and document the responsibilities of each organizational unit for the preparation, review, approval, distribution, and revision of documents involving design interfaces.
- c. Establish methods for systematically communicating needed design information, including changes thereto, across design interfaces as work progresses.
- d. Require documentation of information transmitted between organizations which identified the status of the design information or documents and incomplete items which require further evaluation, review or approval.
- e. Require that design information transmitted orally or by other informal means is promptly documented, and the documentation confirmed and controlled.

- f. Identify the external organizations, providing criteria, designs, specifications, and technical direction.
- g. Identify the positions and titles of key personnel in the communications channel and their responsibilities for decision making, problem resolution, providing and reviewing information.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the status of the St. Lucie Project No. 2 and the applicable Ebasco Quality Program, Quality Assurance Manual dated May 30, 1978.
- b. Examination of QA Manual Procedure QC-4, PSL-2, Design & Engineering, Revision 4, May 1978.
- c. Examination of QA Manual Procedure QC-2, Organization and Responsibilities, Revision 2, May 1978.
- d. Examination of the following procedures from the Engineering Manual:
 - (1) E-7, Processing Drawings for Review and Approval.
 - (2) E-8, Approval Signatures Required on Ebasco Drawings.
 - (3) E-9, Processing Conceptual Design Documents for Review and Approval.
 - (4) E-21, Processing Project Equipment Specifications for Review and Approval.
 - (5) E-30, Preparation of Calculations.
 - (6) E-52, Coordination of NSSS Interfaces.
 - (7) E-65, Control of Project Related Design Documents.
- e. Examination of project document EZZ-SL2-79-271, Tabulation of Specifications and Drawings Requiring Interdiscipline Review, Revision 11, August 15, 1979.
- f. Examination of the following Instrumentation and Controls Specifications:

- (1) No. Flo-2998.147B
Isolation Cabinets
Nuclear Safety Related - Class IE
Seismic Category 1
 - (2) No. Flo-2998.150
Hot Shutdown Control & Transfer Panels
Nuclear Safety Related - Class IE
Seismic Category 1
 - (a) Part One - Specific Requirements
 - (b) Part Two - General Requirements
 - (3) No. Flo-2998.145
Engineered Safeguards Logic Panels
Nuclear Safety Related
Seismic Category 1
- g. Examination of the following Electrical Specifications:
- (1) No. Flo-2998.284 (S&D)
4.16 KV Switchgear
Nuclear Safety Related - Class IE
 - (2) No. Flo-2998.292
Control Cable
Nuclear Safety Related - Class IE
 - (3) No. Flo-2998.307
Electrical Penetrations
Nuclear Safety Related - Class IE
- h. Examination of the Electrical Drawing (multiple copies) No. 2998-272, Main One-Line Wiring Diagram.
- i. Examination of I&C Drawings (multiple copies) No. 2998-327, Control Wiring Diagrams.
- j. Verified the specifications of items f. and g., above, were reviewed with comments by designated interface disciplines per requirements of design interface review Form 525 and item e above.
- k. Verified the drawings of items h. and i. above, were reviewed with comments by designated interface disciplines per requirements of design interface review Form 403 and item e. above.

- l. Examination of Auxiliary Feedwater System Calculation No. NSSS-014.
- m. Examination of the qualification and training records of the personnel performing the design functions examined during the inspection.
- n. Examination of the coordination of NSSS correspondence files by which interfacing designs, drawings, procedures, specifications and documents are exchanged for required actions.
- o. Examination of the Project Quality Assurance Files (PQAF) and the EMDRAC Manual which collectively contain the identity and/or contents of all of the technical documents concerning St. Lucie Unit 2.

3. Findings

a. General

- (1) The St. Lucie Unit 2 project is a "slide-along" project to St. Lucie Unit 1. Due to the duplication concept Unit 2 relied on studies and other conceptual documents from Unit 1, for its design base. When the FSAR for Unit 1 was approved for the operating license many of the Unit 1 documents were approved for the Unit 2 FSAR. Duplication of a Unit 1 specific design becomes a valid design for Unit 2 if specified by the Unit 2 Lead Discipline Engineer or Supervisor.

Item 2.e., above, identifies the minimum required inter-discipline reviews and design interfaces for a specification or drawing to be used on Unit 2.

b. Deviations and Unresolved Items

None were identified

c. Follow-up Items

None

C. Exit Interview

A meeting was conducted with management representatives at the conclusion of this inspection on July 25, 1980. In addition to the individuals indicated by an asterisk in paragraph A. above, those in attendance were:

J. D. Distel - Assistant Project Manager
F. F. Ford - Supervising Quality Assurance Engineer
J. F. Marek - Quality Assurance Auditor
R. N. Marsh - Florida Power & Light, Supervisor
Quality Assurance Engineering
B. R. Mazo - Chief Quality Assurance Engineer
S. Missailidis - Project Quality Assurance Engineer
S. M. Stollman - Quality Assurance Engineer
L. Tsakiris - Project Manager
R. F. Williams - Supervisor Quality Assurance Engineers.

The inspector summarized the scope and findings of the inspection for those present at the meeting. Management representatives acknowledged the statements of the inspector.