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

Report Nos. 50-335/82-19 and 50-389/82-25

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33101

Facility Name: St. Lucie

Docket Nos. 50-335 and 50-389

License Nos. DPR-67 and CPPR-144

Inspection at St. Lucie site near Ft. Pierce, Florida

Inspectors: C M Upright for — 7/13/82
A. G. Debbage — Date Signed

C M Upright for — 7/13/82
R. W. Wright — Date Signed

Approved by: C M Upright — 7/13/82
C. M. Upright, Section Chief — Date Signed
Engineering Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on June 14-18, 1982

Areas Inspected

This routine, unannounced inspection involved 64 inspector-hours on site in the areas of backfit program (unit 1); site organization (unit 2); and onsite design activities (unit 2).

Results

Of the 3 areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   *B. J. Escue, Site Manager, Plant St. Lucie Unit 2 (PSL 2)
   *J. E. Vessely, Director of Nuclear Affairs, General Office
   *C. M. Wethy, Plant Manager, Plant St. Lucie Unit 1 (PSL 1)
   *W. B. Derrickson, Project General Manager, PSL 2
   *R. D. Parks, Site Manager, PSL 1, Backfit
   *N. T. Weems, Superintendent of St. Lucie Projects - QA
   *N. G. Roos, QC Supervisor, PSL 1
   *R. A. Symes, Supervising Engineer - QA, PSL 1&2
   *C. T. Hamilton, Backfit Const. QC Supervisor, PSL 1
   *T. D. Geissinger, Area QC Supervisor, PSL 2
   *P. Carier, Licensing Engineer, Power Plant Engineering (EPP), PSL 2
   *T. P. McKinon, QA Engineer, PSL 1
   *J. Y. Krumins, EPP Site Engineering Representative, PSL 1
   *J. T. Behres, Document Control Supervisor, PSL 2
   *P. Bacca, Backfit Document Control Specialist, PSL 1

   Other Organizations

   *G. H. Krauss, Ebasco Site Project Engineer, PSL 2
   *J. C. Orlowski, Licensing, Combustion Engineering - EPP, PSL 2
   T. A. Tarte, Ebasco Backfit Project Engineer, PSL 1
   J. Marchese, Bechtel Field Engineer, Backfit, PSL 1

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on June 18, 1982, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

   Not inspected.

4. Unresolved Items

   Unresolved items were not identified during this inspection.

5. Backfit Program (PSL 1) (35060)

a. Organization and Responsibilities

The organization which had been formed to undertake PSL 1 backfit program is directed by a site manager. Reporting to the manager are Florida Power and Light (FPL) supervisors of quality control, procurement, and stores, Ebasco site engineer for engineering services, Bechtel construction engineer, and Bechtel construction superintendent. Personnel from the site QA organization are assigned to conduct audits of the backfit program. The backfit organization appears to be independent of PSL 2 construction organization and the contract support by the Ebasco and Bechtel teams assigned to backfit activities appear to be independent of other work performed by Ebasco and Bechtel personnel engaged in PSL 2 construction work. The inspector was informed that PSL 1 operations organization was staffed by FPL personnel only, and since the audits are performed by their own QA organization this, too, is independent of the backfit organization.

The major task ahead for the backfit organization is the planning for the 1983 outage. Problems had arisen during the 1981 outage because of insufficient planning lead time and with an unexpected increase in the number of craft required. The normal level of craft is about 100 which was anticipated to increase to 400 for the 1981 outage whereas actually 700 were required for this activity.

b. Plant Changes/Modifications

Proposed plant changes/modifications (PC/M) are initiated by the preparation of a PC/M package. This package contains a drawing list of the components and systems affected, a system safety analysis of the proposed modification, and the environmental/radiation controls needed during the modification.

Ebasco, Bechtel, and FPL QC perform a constructibility review of the work package and produce a construction process sheet for the specific PC/M. The process sheet is reviewed by FPL QC for the insertion of inspection hold points. The PC/M is then reviewed by the facility review group (FRG). After approval and with FPL construction authorization, the entire PC/M package is placed on controlled distribution to Bechtel.

The FRG reviews all PC/M's prior to release to the document control unit. The FRG is formed with responsible management members and a minimum of five members are required to form a quorum. The members are the Plant Manager, QC supervisor, operations superintendent, operations supervisor, maintenance superintendent, electrical supervisor, instrumentation and control supervisor, reactor engineering supervisor, chemistry supervisor, and representative(s) from the technical staff. Designees may be assigned instead of the member and a quorum can then be formed by a minimum of three members and two alternates.

c. FPL Task Team

FPL decided on January 14, 1982, that a task team would be formed to address the problems which arose during the Fall 1981 outage. By January 27, the task team had been established and on February 3, the priorities were established. The team's objective is that all proposed changes to the QA program and planning controls will be in effect by the fall of 1982. The backfit task team meetings have been held frequently, the most recent meetings being June 4 and June 11, with the next meeting scheduled for June 23. The commitment log produced by the task team records the identification of problems and action assignments to resolve those problems. A review of this log shows that approximately 40% of the problem areas have already been resolved.

d. Review of Backfit Procedures

Procedures which had been developed for the backfit program were reviewed. These included the following:

CPL: ASP-1, RO	Organization for Backfit Work
CPL: ASP-10, RO	Indoctrination and Training
CFP-A-1, RO	Organization for Backfit Work
CFP-A-10,RO	Training Procedure
BQA-1	Statement of Authority
BQA-2	Scope of Quality Assurance Program
CFP-A-2, R1	Preparation of Site Procedures/Process Sheets
CPL: ASP-2, RO	Preparation of Site Procedures/Process Sheets

Ebasco stated that their QA program was in the process of revision and supplied draft copies of backfit quality assurance procedures (BQAPs) that are currently in the review process, for the inspector's examination. The "Backfit Engineering QA Program Manual For FP&L Company, St. Lucie Unit No. 1" was also examined by the inspectors.

e. Ebasco Design Support

Currently 55 Ebasco personnel provide site support engineering services for PSL 1 backfit activity. Their onsite capability includes system safety analysis of backfit design changes and field change requests as they arise. They perform a constructability review of all work packages and compile construction process sheets.

f. QA Audits of Backfit Activities

Audits had been performed by FPL QA members and these were reviewed to verify the licensee's compliance with the accepted QA program. Audit QAO-PSL-80-07-198 on all applicable elements of the backfit program was conducted from April 13 to July 30, 1981. The audit verified the adequacy of the backfit program and concluded that the program had been

effectively implemented except for a few findings which were subsequently closed. One of these findings was that planning and scheduling inspection activities had not required the PC/M packages to be routed to QC for review and planning.

Audit SLP-QA-82-09 on organization and procedures was conducted February 23 - April 30, 1982. The scope of the audit was to verify implementation of the backfit procedures for procedure development and control and to examine the responsibilities of personnel involved in implementing the program. Three findings were identified and are being resolved.

Preparations had been made to review indoctrination and training activities but the scheduled audit has not commenced.

g. Backfit Activity Review

One of the safety related activities performed during the 1981 outage was the modification of the fuel transfer tube shielding in the reactor building annulus. This was identified as backfit item BFI 49-3 and assigned the PC/M numbers 61-81 and 95-81. Drawing numbers 8770-G-517 and BCS 95-81.300 showing the modification were examined. The process sheet for the modification was 95-81-097 and the approved PC/M package was assigned the work order CWO 3112. The inspection records for this activity were examined. Lead shot had been procured as part of the material required to perform the modification. This was inspected on delivery and reported on RIR 3112-1799; the material was identified for PSL 1 backfit and assigned a material release notice #3112-1087. The material was released for use by stores requisition #95-81. The final QC inspection was made to the revised drawing BCS-95-81.300, R1, and to the revised process sheet 95-81-097, R1.

The documents for modification were examined in the backfit document control unit (DCU). The revised drawings and revised process sheet were not in the DCU nor had they been issued through the DCU. Discussions with Bechtel field engineering indicated that control of revisions was one of the identified problem areas and that corrective action had commenced.

h. Summary

It appears that the licensee had an acceptable QA program in place prior to the major outage in 1981. However, implementation of the program was adversely impacted by insufficient lead time for planning which was further reduced by a premature shutdown of the plant, and the substantial increase in the anticipated work force. The licensee stated that the current task force activities with full implementation should minimize future program complications. The existing QA program with the task force revisions should provide an adequate program for backfit activities.

Within this area, no violations or deviations were identified.

6. Site Organization - PSL 2 (35060)

St. Lucie plant unit 2 construction is directed by a resident site manager. Reporting to him are the piping director and project superintendent for craft activities, the senior resident engineer, services superintendent, construction control superintendent, senior security supervisor, and the licensing item coordinator. The Ebasco site project engineer takes functional direction from the Ebasco home office and project direction from FPL-EPP. The project quality control supervisor reports functionally to the site manager and administratively to FPL headquarters superintendent of quality control. The quality assurance group is located at the site under a QA superintendent who reports administratively to the corporate Director of Nuclear Affairs and maintains communication with the site manager.

The St. Lucie project QA group is responsible for planning, developing, and verifying implementation of the onsite quality assurance program. The group monitors the construction activities of FPL construction, FPL construction quality control, and other site organizations on a continual basis. The group consists of a superintendent of QA for the project who currently shares time between the corporate QA office and the site, three supervisors, and several FPL and contractor QA engineers. The number of personnel appears to be adequate for the current work load.

Within this area, no violations or deviations were identified.

7. On Site Design Activities - PSL 2 (37055)

a. Organization

Onsite design activities are performed by the Ebasco Site Support Engineering group (ESSE). The group is supervised by the site project engineer who reports to the PSL 2 project engineer in the Ebasco home (New York) office. ESSE has design engineers in the following disciplines: civil, electrical, instrumentation, and mechanical. These design engineers report to the site project engineer. The responsibilities of ESSE are to review and approve field change requests (FCRs) which result in only minor project design changes; disposition nonconformance reports (NCRs); prepare design change notices (DCNs), which are minor design changes; consult with the home office for approval of FCRs which result in major design changes; and coordinate design activities between the home office and onsite construction groups. Ebasco engineering procedures define a minor change as one which has little or no impact on a safety-related system; all other changes are considered major.

b. Review of Design Control Procedures

Program requirements and procedures governing onsite design activities were reviewed for completeness and effectiveness. Procedures prefixed by E are Ebasco site support engineering procedures, prefix CFP is used

by Bechtel, and the others are used by FP&L. The procedures reviewed included the following:

E-11, Nov. 20, 79	As-built Drawings
E-69, Nov. 20, 79	Design Change Notice Field Change Request
E-80, Nov. 20, 79	Piping Activities Control Procedure
E-82, Feb. 20, 80	Ebasco Site Support Engineering Group
CFP-A-2, R1	Preparation of Site Procedures/Process Sheets
CPL: ASP-2, R0	Preparation of Site Procedures/Process Sheets
QC-2, PSL-2, R2	Organization and Responsibilities
QC-3, PSL-2, R3	Personnel Indoctrination and Training Program in Quality Assurance
QC-4, PSL-2, R4	Design and Engineering
SQP-25, R2	Small Bore Piping Isometrics
SQP-17, R3	Design Control
FPL QI 10.1, R3	General Instructions for the Conduct of Inspections

c. Ebasco Design Activities

The Ebasco site support engineering (ESSE) group has a current manpower level of 126 and has a computer terminal in the office for direct communication with Ebasco headquarters. Design activities include piping isometrics for 2-inch pipe and under, including drains, vents and instrument connections; field run conduit, cable trays, tray filling, and cable routing; seismic supports for 2-inch pipe and under; and resolution of field problems such as field change requests and design change notices. ESSE representatives stated that the design of larger seismic supports was being performed by Bergen-Paterson. During May 1982, ESSE handled 629 FCRs, 63 DCNs and 156 NCRs.

Design drawings and supporting design criteria and calculations for part of the reactor coolant safety injection piping system were examined. The drawings were piping isometric RC-94, R2, and hangers/restraints RC-94-R1 through R8. The review included the drafting symbols used to identify welding fitting locations and pipe supports, the pipe stress calculations, the criteria for selection of restraints and hangers, and the code welding specified.

Several field change requests and drawing change notices were selected to verify that they had been identified with the related master drawings held in the document control unit. These included FCRs 2-7792E, 2-7915E, 2-7648E; DCNs 513.1910 and 513.1864.

The field change requests were also examined to determine the extent of changes requested and their correct disposition. FCR2-7915E dated 5/20/82 stated that a revision to an isometric drawing had added a valve to the blowdown system and that the design orientation of this valve interfered with the operation of two other valves. The FCR

requested valve installation to a field sketch and that the isometric drawing be revised to reflect the change. The FCR was evaluated to be a minor design change and the corrective action required ESSE to revise the drawing. The reviewer concurred with the disposition. This type of request was fairly typical of the FCRs reviewed.

d. Audits of Design Activity

ESSE is audited by the Ebasco home office QA Audit group and the FPL site QA organization and their most recent audit reports were reviewed.

FPL audit SLP-QA-81-02 was conducted August 17-20, 1981. The scope of the audit was to verify site implementation of the applicable E procedures for processing drawings, drawing approvals, calculations, design documents, design change notices, field change requests, and sketches. Four findings were identified involving failure to follow procedure requirements in specific instances.

Ebasco audit 1571-1578 was conducted September 21-25, 1981. This audit was to verify that the ESSE group at PSL 2 was conforming to the Ebasco engineering procedures. Six findings were identified, two of which were corrected during the audit.

Ebasco audit 1386 was conducted December 9-11, 1980, to verify conformance to the Ebasco procedures. Four findings were identified which were failure to follow procedure requirements in specific instances. These were subsequently closed in audit 1571-1578.

The inspector discussed the audit findings with the licensee's QA engineer who had responsibility for auditing the ESSE group. The FPL auditor believes his findings were of routine nature and of minor significance.

Within this area, no violations or deviations were identified.