UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-250/89-20 and 50-251/89-20

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33102

Docket Nos.: 50-250 and 50-251 License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection Conducted: April 24-28, 1989

Inspectors: for F. Jape 5/24/89
C. Smith Date Signed

L.R. Moore for 5/24/89
M. Thomas Date Signed

Accompanying Personnel: F. Jape April 28, 1989

Approved by: Frank Jape 5/24/89
F. Jape, Chief Date Signed
Quality Performance Section
Operations Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was conducted in the areas of activities performed by the site design engineering staff and their interface with the plant systems engineers concerning the resolution of technical matters.

Results: The disposition of NCRs has improved with respect to timeliness of operability review performance however, documentation of root cause analysis and corrective actions requires improvement. (para.2a) The backlog of engineering assistance requests (REAs and PDRTs) is large but measures taken to reduce the backlog are adequate. (para.2b and 2c) In particular, due to prioritization, no currently open REAs present an operability concern for unit 4 startup. (para.2b) The commitments regarding red lining of priority drawings transmitted via FPL letter L-88-521 dated December 9, 1988, have been met as applicable to unit 4. (para.2b) No assessment of the performance Data trending program's effectiveness in addressing a previously identified weakness in plant systems reliability was possible. A longer implementation period is necessary to identify the effectiveness of this program. (para.2d)

In the areas inspected, violations or deviations were not identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Arias, Jr., Assistant to Plant Manager
*W. Bladow, Quality Assurance Superintendent
*S. Day, Jr., Compliance Engineer
*J. Donis, Operations Support Supervisor
*R. Earl, Quality Control Supervisor
J. Ferrare, Procurement Document Review Team Supervisor
*B. Ford, Compliance Engineer
*S. Franzone, Lead Engineer, Juno Plant Nuclear Site Engineering
*R. Gil, Civil Engineering Manager, Juno Plant Nuclear
*S. Hale, Engineering Project Manager, Juno Plant Nuclear Site Engineering
*P. Higgins, Project Engineer, Juno Plant Nuclear Site Engineering
*V. Kaminskas, Technical Department Supervisor
*J. Odom, Site Vice President
*L. Pearce, Operations Superintendent
W. Skelly, Nuclear Discipline Manager

Other licensee employees contacted during this inspection included craftsmen, technicians and administrative personnel.

NRC Resident Inspectors

R. Butcher, Senior Resident Inspector
*T. McElhinney, Resident Inspector
*G. Schnebli, Resident Inspector

*Attended exit interview

2. Design, Design Changes and Modifications (37700)

This inspection was conducted in the functional area of design-engineering. It involved a review and assessment of activities performed by the site engineering (JPNS) and the plant system engineers concerning the resolution of any matter of a technical nature involving PTN 3 and 4. The licensee's efforts to prioritize and reduce the number of items that require review and disposition by JPNS or the system engineers were also inspected. Additionally, the inspectors reviewed the licensee's program for trending performance data by the system engineers. Specific areas inspected and conclusions from the inspection are discussed in the following paragraphs.

a. NCRs and PCMs

(1) The NCR is the process used by the licensee to document nonconforming conditions such as failures, malfunctions, deficiencies, defects, etc. The requirements and responsibilities for documentation, control, evaluation, and disposition of nonconforming items or services are included in

licensee procedure QP 15.2, Control of Nonconforming Materials, Parts, Components and Services.

The inspectors reviewed selected NCRs which had been dispositioned by JPNS to determine if the dispositions were complete, accurate, and technically adequate. The following NCRs were reviewed:

NCR 88-0172, System Walkdown Discrepancies, Unit 3

NCR 88-0215, Unit 3 MSIV Stroke Times

NCR 89-0100, MOV-4-864A & B, RWST Isolation Valve to RHR & SI Pump, Unit 4

NCR 89-0138, SV-851A, B&C Solenoids, Unit 4

NCR 89-0197, Root Valve for PT-4-138, Unit 4

NCR 89-0111, Thermal Overload Elements

NCR 88-0235, Electrical Penetration Wiring - Control Rod Drives

NCR 88-0167, RHR Pump Motor Leads

NCR 88-0198, RHR Pump Motor

In addition to providing the corrective actions for the NCRs, JPNS also performed initial engineering assessments of operability and 10 CFR 50.59 screenings for each NCR. The inspectors noted that the licensee had begun performing the evaluations at the time the NCRs were written instead of waiting until the disposition was implemented. This change in performing the initial operability and 10 CFR 50.59 evaluations was in response to questions raised previously by the NRC concerning timeliness of 10 CFR 50.59 and operability evaluations for NCRS.

The inspectors observed one weakness while reviewing the NCRs. The weakness concerned the root cause and the corrective actions which were not clearly documented for some of the NCRs reviewed. The inspectors could not determine if adequate corrective actions had been taken based on their review of these NCRs. The inspectors discussed this item with appropriate JPNS and plant personnel and reviewed related documentation for the NCRs in question. These additional discussions and reviews by the inspectors led to the determination that the corrective actions taken appeared to be adequate to address the root causes of the problems. During further discussions with the licensee concerning this issue, the inspectors stated that the information contained on the NCRs should be adequate to described the nonconforming condition, the root cause, and the recommended corrective actions, without having to review additional documents or hold additional discussions with plant personnel to determine the root cause and corrective actions taken.

The licensee acknowledged this area of weakness and stated that the item would be reviewed to determine what, if any, actions will be necessary to resolve the concern.

(2) In conjunction with reviewing the NCRs, the inspectors also reviewed selected REAS and PCMs and DEEP which had been initiated to resolve some of the NCRs. The REAs reviewed are discussed in paragraph 2.b. The inspectors reviewed the PCMs/DEEP for completeness, accuracy, and technical adequacy. Attributes reviewed included 10 CFR 50.59 evaluations and applicable procurement documentation. The following PCMs were reviewed:

PCM 85-135, MSIV Air Operator Nitrogen Backup Supply

PCM 87-006, I&E Bulletin 85-03 MOV Switch Settings

PCM 88-453, Unit 3 Drawing Discrepancies

DEEP 88-432, Replacement of CRDM

Cables and Connectors

PCM 88-469, EQ DOC PAC Revisions

The inspectors conducted interviews with the responsible engineers concerning the scope of the Plant modifications.

Additionally, they reviewed the design output documents and verified that post-modification test requirements and test acceptance criteria were appropriately specified. No deficiencies were identified during these activities.

Within this area no violations or deviations were identified.

b. Request for Engineering Assistance (REA)

The REA program is the process used by licensee management to initiate, document, and control the resolution of any matter of a technical nature that involves the licensed units. Responsibilities assigned to the Technical Department Operations Support Supervisor and his staff concerning the disposition of REAs are specified in administrative procedure 0190.84, paragraph 8.2.3. The inspectors performed a review of selected REAs to determine the technical adequacy of the initial operability review, and to verify procedural compliance with the program documents. Additional reviews of the REAs were performed by the inspectors to assess the technical adequacy of the design-engineering activities performed by JPNS in response to the REAs.

The following REAs were reviewed by the inspectors.

REA No. TPN-88-678, Evaluation of Generic Letter 88-15

REA No. TPN-89-013, RCP Motor Field Power Feeder Cables

REA No. TPN-89-184, Reactor Trip Breaker Secondary Control Bracket

Real Time REA No. 89-116, Evaluation of IN 88-75, Disabling of D/G Output Circuit Bkrs by Anti-pump circuitry.

Based on review of the above REAs the inspectors determined that two REAs required engineering evaluations (Job Category 6); one required a component/material substitution (Job Category 1); and the last required corrective action specified as other (Job Category 8.). Detail reviews and evaluations of the design-engineering activities performed by JPN in response to the REAs did not identify any technical inadequacies. The inspectors determined that initial review for operability concern was performed for REA 89-182 only.

The inspectors conducted interviews with licensee's management to determine the status of the REA backlog and corrective actions being taken to reduce it. The inspectors determined that licensee management had previously identified deficiencies in the implementation of the REA program in that real time support REAs were being dispositioned to JPNS without prioritization or advanced planning. Additionally, the REAs were not being controlled from initial opening to final closure.

The total number of REAs open as of April 25, 1989 was 475. An REA Backlog Reduction Program has been developed and implemented to correct the above deficiencies. Elements of the program include:

- Prioritization by the system engineers, maintenance department, operation department, etc., of REAs by high, medium and low categories.

- Establishment of firm schedules for completion of REAs with high priority item by JPN.

- Establishment of a dedicated engineering team for completion of high priority items.

Licensee management anticipates that all high priority items will be completed by June 30, 1989.

The inspectors requested information concerning the potential impact of the open REAs on Unit 4, which is scheduled for startup in early May. Licensee management provided the following information, which they confirmed to be in accordance with their commitment to the NRC transmitted in letter L-88-521, dated December 9, 1988. This commitment required DEEP, EP, or red-lining to be used to resolve identified discrepancies for Unit 4 priority drawings prior to the Unit entering Mode 2.

Status of Red Line DEEP for Unit 4 Mode 2 Commitment:
April 26, 1989

Activity Description	DEEP No.	
Minimum Quorum Review	88-528 89-585	
System Engineer/QC Review	88-069 88-521 89-139	89-095 89-100
Ready for PNSC Review	88-584 88-606 89-119	
Drawing Update (Drawing revised)	88-533 88-534 88-588	88-597 89-105
Transmittal to Control Room Site Document Control	0	
Startup System Acceptance Working Turnover Sheets (SATS)	88-527 88-529 88-530 88-586	89-029 89-042 89-091 89-127
Complete SATS	88-212 88-518 88-526 88-546	88-547 88-578 88-609 89-017

The inspectors were informed by the licensee that there are no open REAs that present an operability concern for Unit 4 at this time.

The inspectors conducted interviews with licensee management to determine the role and responsibilities of the system engineers. Responsibilities for performance data trending are discussed in paragraph 2.d. of this report. Additional responsibilities assigned to the system engineers are specified in administrative procedure 0190.84. The inspectors determined that the system engineers are presently performing initial reviews of REAs for operability concerns in support of the REA Backlog Reduction Program. Upon identification of an operability concern, JPN initiates corrective action within three days to address the concerns.

Based on review of objective evidence and discussions with licensee management, the inspectors concluded that the licensee had taken appropriate corrective action for previously identified deficiencies. Although initial review for operability concerns were not performed for three of the REAs reviewed, the inspectors did not identify any technical inadequacies in the design-engineering activities performed by JPN. Additionally, licensee activities required to satisfy NRC commitment for Unit 4 appears to be adequate.

Within this area no violations or deviations were identified.

c. Procurement Document Review Team (PDRT).

JPNS provides support to Nuclear Operations in the procurement area by:

(1) Performing engineering evaluations of procurement activities requested by the PDRT.

(2) Performing replacement EQ equipment evaluations.

(3) Preparing of commercial grade dedication package.

The PDRT has been assigned the responsibilities for determining the quality level of procurement activities by verifying all technical and reference information on procurement documents. This is accomplished by review of design related documents. If the PDRT member is unable to determine the quality requirements of an item, a copy of the requisition with supporting documentation is forwarded to JPNS for evaluation. The JPNS responsible engineer prepares a PDRT engineering evaluation and determines if the PDRT engineering evaluation will require an engineering package design equivalency engineering package, or drawing change request. The engineer identifies applicable codes and standards; reviews vendor qualification documents; specifies receipt inspection and testing requirements; and prepares a dedication package for basic components procured QL-2 or QL-3.

The inspectors performed a technical review of the following procurement activities to assess the adequacy of the engineering evaluations performed:

PDRT No. 86-08036, Engineering Evaluation Request

JPE EQ Form SPA-PTP34-ASCO-1P

JPE-EQ Form SPA-PTP-34-RAY1

PDR No. 89-00215, Wedge guide, wedge, seat ring, and stem for MOV-4-872

PDRT No. 89-00244 & 89-00248, Hose/Clamp for emergency diesel generator

PDRT No. 89-02602, Variable spring

PDRT No. 89-02858, Reducing bushing for solenoid SV-4-739

PDRT No. 88-05807, Various 3/4 inch T58 valves

PDRT No. 88-17951, Vent for bearing housing on SI pump

No deficiencies were identified during the above review.

The inspectors determined that licensee management has recently implemented trial use of a program intended for dedication of commercial grade components/replacement parts. Responsibility for preparing commercial grade dedication packages in accordance with the requirements of procedure JPN-PTP-89-701 has been assigned to JPNS.

An evaluation of licensee's commercial grade dedication activities were not performed, pending completion of the trial use program. Guidance for JPN personnel concerning the use and dedication of commercial grade items have been provided in Nuclear Engineering procedure, "Utilization/Dedication of Commercial Grade Items", dated March 13, 1989.

Additional administrative controls are presently being established to address activities performed in the procurement of equipment, material, and related spare parts for plant modifications. These controls specify requirements for component standardization; spare parts for engineering ordered components; bill of material; and disposition of dormant/obsolete material. A supplement to QI 3.1-4 is scheduled to be issued May 3, 1989, to implement the above requirements.

FP&L inter-office correspondence from S. T. Hale-PTN Engineering, to J. E. Cross - Plant Manager, Subject: Turkey Points 3 and 4, Spare Parts Procurement Backlog, dated February 15, 1989, identified a backlog of 523 PDRT requests for engineering evaluations. The inspectors conducted interviews with licensee management regarding the present status of the PDRT backlog and the efforts being made to reduce it. Corrective actions taken by the licensee to reduce the backlog included prioritization of items that were directly related to outage PCMs and PWOs, along with the establishment of a dedicated team (PDRT) for review and disposition of outstanding items. Licensee management estimated a completion date of June 30, 1989.

The inspectors determined, however, that the total number of PDRTs open as of March 25, 1989, to be 783. Licensee management attributes the increase in PDRTs and other JPNs/plant technical staff activities, e.g., REAs etc., to the present outage on Unit 3.

The inspectors determined, based on review of the selected sample of PDRTs, that the engineering evaluations performed by JPNS are technically adequate. The continued backlog of open PDRT requests for engineering evaluations is being addressed by prioritization of items and the use of a dedicated team for closure. It is unlikely, however, that the licensee's scheduled date for completion of these activities will be met. Additional corrective action in the form of administrative controls specified in a Supplement to QI 3.1-4 is intended to prevent this situation from recurring once the backlog is worked off. An evaluation of the effectiveness of these controls requires time for their implementation.

Within this area no violation or deviations were identified.

d. Performance Data Trending

Licensee management implemented a Performance Trending Program in March 1989. The program is intended to predict future performance of system components. Additionally, it will provide management with the information required to facilitate decision making concerning plant modifications that are required to achieve an equivalent or better than industry performance.

A Component Failure Analysis Report (CFAR) based on selected sorts of the NPRDS data base is prepared quarterly. This report identifies PTN components that have a failure rate greater than the industry average. JPN engineers are required to review the CFARs and coordinate problem diagnosis and resolution with the plant technical system engineers. The System Engineers will use this data as one input to assist them in the evaluation of system performance and implementation of corrective action.

The inspectors conducted interviews with licensee management concerning the development and implementation of the CFAR program. They determined that the methodology uses statistical tools, i.e. individual variable control charts, for early diagnosis and subsequent resolution of potential equipment problems. Administrative controls are presently being developed to incorporate the CFAR program into the activities of the system engineers.

The inspectors were further informed that efforts to address system reliability are presently being developed. These efforts include the performance of a qualitative and/or quantitative reliability and risk analysis of nuclear power plant design changes. The reliability and risk analysis may be accomplished via Failure Mode and Effects Analysis; Reliability Block Diagram; Fault Tree Analysis; or Probabilistic Risk Assessment. Guidance on performing the above activities is being developed for issuance as a Quality Instruction.

The inspectors determined that the licensee's activities described above address a weakness in the plant Technical Department Operations Support Staff previously identified by the NRC. An evaluation of these activities requires time for their full implementation.

Within this area no violations or deviations were identified.

3. Exit Interview

The inspection scope and results were summarized on April 28, 1989, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

4. Acronyms and Initialisms

CFAR	Component Failure Analysis Report
DEEP	Design Equivalent Engineering Package
EP	Engineering Package
JCO	Justification for Continued Operation
JPN	Power Plant Engineering Nuclear
JPNS	Power Plant Engineering Nuclear - Site
MOV	Motor Operated Valve
MSIV	Main Steam Isolation Valve
NCR	Nonconformance Reports
NPRDS	Nuclear Plant Reliability Data System

PCM	Plant Changes and Modifications
PDRT	Procurement Document Review Team
PTN	Plant Turkey Point Nuclear
PWO	Plant Work Order
QA	Quality Assurance
QC	Quality Control
REA	Request for Engineering Assistance
RHR	Residual Heat Removal System
RWST	Refueling Water Storage Tank
SI	Safety Injection
SV	Solenoid Valve