



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

Report Nos.: 50-335/85-16 and 50-389/85-16

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

Docket Nos.: 50-335 and 50-389

License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2

Inspection Conducted: June 24-28, 1985

Inspector: M. F. Runyan  
M. F. Runyan

7/25/85  
Date Signed

Accompanying Personnel: R. M. Latta, Region II  
M. A. Scott, Region II

Approved by: C. M. Upright  
C. M. Upright, Section Chief  
Division of Reactor Safety

7/25/85  
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 108 inspector-hours on site in the areas of licensee action on previous enforcement matters, QA program review, audits, audit implementation, records, document control, QA/QC administration, surveillance testing and calibration, measuring and test equipment (M&TE), and licensee actions on previously identified inspection findings.

Results: One violation was identified - Failure to control environmental conditions for calibration of M&TE.

8508140051 850729  
PDR ADOCK 05000335  
G PDR

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

J. Adams, Lead Auditor  
\*A. Bailey, QA Operations Supervisor  
\*H. Buchanan, Health Physics  
\*D. Culpepper, Power Plant Engineering  
A. Dero, GEMS Planner  
T. Dillard, Maintenance  
\*R. Frechette, Chemistry  
M. Goodiel, Maintenance Supervisor  
K. Harris, Vice President  
D. Heycock, ISI Coordinator  
D. Howard, QC Inspector  
\*R. Justine, Procurement Agent  
G. Kozlowski, Vault Custodian  
\*M. Lamp, Construction Superintendent  
W. McGarie, Lead Auditor  
\*T. McKinnon, ISEG  
\*R. Marr, Systems Supervisor  
\*B. Parks, QA Supervisor  
L. Pearce, Operations  
\*L. Rich, NPS  
J. Riley, QC Engineer  
\*N. Roos, QC Supervisor  
D. Sagar, Plant Manager  
\*M. Smith, System Protection  
R. Spooner, QA Supervisor  
\*D. Stewart, Lead Performance and Test Engineer  
J. Vessely, Manager of QA  
J. Walls, I&C  
N. Weems, QA Superintendent  
\*R. Young, Mechanical Maintenance

Other licensee employees contacted included construction craftsmen, technicians, mechanics, and office personnel.

#### NRC Resident Inspectors

\*R. Crlenjak, Senior Resident Inspector  
H. Bibb, Resident Inspector

\*Attended exit interview

## 2. Exit Interview

The inspection scope and findings were summarized on June 28, 1985, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection. The inspector described the areas inspected and discussed in detail the inspection findings listed below.

Violation: Failure to Control Environmental Conditions for Calibration of M&TE, paragraph 11.a

Unresolved Item: Torque Wrench Acceptance Criteria, paragraph 11.b

## 3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Severity Level IV Violation (335/84-12-01, 389/84-14-01):  
Failure to Include Gages in Calibration Program

The licensee response dated July 2, 1984, was considered acceptable by Region II. The inspector reviewed Corrective Action Request (CAR) 6-6-84 including licensee documentation stating that Instrumentation and Control (I&C) has performed a 100% check of all safety-related instruments for inclusion in the calibration program. The inspector verified that the subject gages had been added to the calibration program by examining FPL I&C procedure 1-1400064, Revision 23, and procedure 2-1400064, Revision 4. As further verification, a sample of safety-related instruments in the calibration program were examined and discrepancies were not identified. The inspector concluded that the licensee had determined the full extent of the violation, taken action to correct conditions, and developed corrective actions needed to preclude recurrence of similar problems. Corrective actions stated in the licensee response have been implemented.

- b. (Closed) Severity Level V Violation (335/84-12-02, 389/84-14-02):  
Failure to Audit to Necessary Depth

The licensee response dated July 2, 1984, was considered acceptable by Region II. The inspector reviewed licensee documentation contained in CAR 6-9-84 and QA Audit No. QSL-OPS-84-329 dated October 26, 1984. Examination of this information indicated that the QA Department had placed an increased emphasis on the depth of audits to include all programmatic aspects. Additionally, the inspector reviewed a letter from Mr. N. T. Weems to plant QA personnel dated April 2, 1985, which provided specific guidance to QA auditors in the areas of administrative review and personal verification of completed work. The inspector concluded the licensee had determined the full extent of the violation, taken action to correct conditions, and developed corrective actions needed to preclude recurrence of similar problems. Corrective actions stated in the licensee response have been implemented.

#### 4. Unresolved Items

An Unresolved Item is a matter about which more information is required to determine whether it is acceptable or may involve a violation or deviation. A new unresolved item identified during this inspection is discussed in paragraph 11.b.

#### 5. QA Program Review (35701)

References: 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

The inspector reviewed the licensee QA program required by the above reference to verify that these activities were conducted in accordance with regulatory requirements. The following criteria were used during this review to assess overall acceptability of the established program:

- Personnel responsible for preparing implementing procedures understand the significance of changes to these procedures.
- Licensee procedures are in conformance with the QA program.

The procedures discussed throughout this report were reviewed to verify conformance with the QA program.

The inspector reviewed the Commitment to Excellence Program (CEP) dated June 5, 1985, which is a spin-off of the Performance Enhancement Program begun at Turkey Point Nuclear Plant in 1984. Additionally, inter-office correspondence of April 15, 1985 (QAC-PSL-85-075) which contained a schedule of CEP tasks for completion by QA and QC was reviewed. Reportedly, the effective aspects of the Turkey Point program have been incorporated into CEP. The inspector interviewed QA and QC personnel as to the progress of these program commitments. The inspector was informed of the following:

Increased QA staff size (four additional positions to be filled)

Increased QA personnel training

Increased QA technical expertise (one recently hired QA personnel was a licensed operator)

Improved communication between QA and site personnel

Trend analysis and reporting

Performance monitoring to address plant systems/hardware and real-time operating activities

Expanded QA and QC surveillance programs

QA audits to assure that CEP commitments are being met

Since the previous inspection of this area, a number of QA implementing procedures have been revised. The revisions of procedures (QI QAD) generated at the corporate offices were reviewed for conformance to QA program description, Topical Report, and applicable codes, standards, and regulatory guides. Additionally, a sample of procedure revisions issued at the site received the above review and licensee personnel were questioned as to the cause for the change, the significance of the change, and whether the change upgraded the QA program. The following site procedures were discussed and reviewed:

QI 1-PR/PSL-7	Quality Control Organization, Revision 5
QI 2-PR/PSL-1	Quality Assurance Program, Revision 5
QI 2-PR/PSL-2	Indoctrination and Training of St. Lucie Personnel, Revision 12
QI 6-PR/PSL-1	Document Control, Revision 9
QI 16-PR/PSL-1	Corrective Action, Revision 16
QI 17-PR/PSL-1	Quality Assurance Records, Revision 7

As a result of the Quality Improvement Program which preceded CEP, two of these procedures were changed. One of the instructions was changed as a result of a QA audit. In all cases, the procedures were upgraded and the reason for the revision was understood by site personnel.

The inspector discussed QA program implementation and other topics with QA personnel. The inspector reviewed general onsite QA program implementation as a part of the inspection. Each specific area is detailed in other paragraphs of this report. Problem areas, if identified, are detailed in the specific area inspected.

Within this area, no violations or deviations were identified.

#### 6. Audits (40702 and 40704)

References:

- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants, and Fuel Reprocessing Plants
- (b) Regulatory Guide 1.144, Auditing of Quality Assurance Program for Nuclear Power Plants
- (c) ANSI N45.2.12-1977, Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
- (d) Regulatory Guide 1.146, Qualification of Quality Assurance Programs for Nuclear Power Plants

- (e) ANSI N45.2.23-1978, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants
- (f) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation)
- (g) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
- (h) Technical Specifications, Section 6

The inspector reviewed the licensee audit program required by references (a) through (h) to verify that the program had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program:

- The audit program scope was defined consistent with Technical Specifications and QA program requirements.
- Responsibilities were assigned in writing for overall management of the audit program.
- Methods were defined for taking corrective action on deficiencies identified during audits.
- The audited organization was required to respond in writing to audit findings.
- Distribution requirements were defined for audit reports and corrective action response.
- Checklists were required to be used in performing audits.
- Measures were established to assure that QA audit personnel met minimum education, experience, and qualification requirements for the audited activity.

The documents listed below were reviewed to verify that these criteria had been incorporated into the auditing program:

FPL-NQA-100A	Topical Quality Assurance Report, Revision 7
QP 2.2	Revision of the Topical Quality Assurance Report, Revision 4
QP 2.3	Quality Assurance Program Review, Revision 8
QP 2.4	Preparation and Revision of Quality Instructions, Revision 6

QP 2.5	Quality Assurance Indoctrination and Training, Revision 6
QP 2.7	Identification of Safety-Related and Nuclear Nonsafety-Related QA Required Structures, Systems, Components and Services, Revision 1
QP 2.9	Qualification of QA Audit, QC Inspection and Construction Test Personnel, Revision 5
QP 16.1	Corrective Action, Revision 8
QP 18.1	Conduct of Quality Assurance Department Quality Audits, Revision 11
QI2 QAD 4	Preparation and Revision of QAD QIs, Revision 6
QI2 QAD 6	Control of the QA and QI Manual, Revision 2
QI9 QAD 1	Personnel Qualification and Certification in Nondestructive Testing in Accordance with SNT-TC-1A, Revision 3
QI16 QAD 3	Controlling Contractor/Supplier Audit Open Items, Revision 4
QI16 QAD 4	Corrective Action Follow-up for Quality Assurance Audits, Revision 7
QI16 QAD 5	St. Lucie Projects Quality Assurance Surveillances, Revision 1
QI18 QAD 2	Auditing of the Quality Assurance Committee, Company Nuclear Review Board, and the Quality Assurance Department, Revision 0
QI18 QAD 3	Scheduling of Quality Assurance Department Audit Activities, Revision 4
QI16-PR/PSL-1	Corrective Action, Revision 16

The Quality Assurance Monthly Report for May 1985 and the Joint Utility Management Audit (JUMA) Report QAS-QAD-85-1 dated March 25-29, 1985, were reviewed by the inspector. In each document, one and four findings were indicated respectively. The monthly report item involved plant change/modification transmittal from corporate offices to both FPL sites had been open since September 4, 1984. Per the monthly report and Backfit Document Control personnel, this controlled transmittal issue would be closed on June 30, 1985. Of the four JUMA audit findings, two items were expeditiously closed and the two remaining items are realistically scheduled for completion. The JUMA open items (findings 6 and 13) dealt with auditor



(other than lead) and QC technician qualification requirements and adequacy of the audit program. The qualification finding was based on the ANSI N45.2.23 requirement for the responsible organization to establish qualification for auditors and technical specialists and retain records of these qualifications. The adequacy finding was based on the Topical Report requirements to evaluate work areas, activities, processes, and items and implementation of operating and test procedures. The evaluation of implementation is addressed in the CEP program and responses to both JUMA audit findings were positive in nature.

To verify audit program implementation, the inspector reviewed the following audits:

QSL-OPS-84-324  
 QSL-OPS-84-331  
 QSL-OPS-84-332  
 QSL-OPS-84-336  
 QSL-OPS-84-339  
 QSL-OPS-84-344  
 QSL-OPS-85-348  
 QSL-OPS-85-356  
 QSL-OPS-85-358

The inspector verified that the sample of audits listed above were performed within scheduled limits, issued within the required time, and that the response to the findings met time requirements or had extensions granted. The inspector generally reviewed corrective actions for findings identified in these audits. TS audits are discussed in paragraph 10. The inspector reviewed the auditor's qualification packages and verified that the lead auditors met the minimum required standards.

Within this area, no violations or deviations were identified.

## 7. Records (39701)

- References:
- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
  - (b) Regulatory Guide 1.88, Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records
  - (c) ANSI N45.2.9, Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants
  - (d) Regulatory Guide 1.33, Quality Assurance Program Requirements, (Operation)
  - (e) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants



## (f) Technical Specification, Section 6

The inspector reviewed the licensee records management program required by references (a) through (f) to verify that the program had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program:

- Requirements and provisions were established to maintain essential quality records.
- Responsibilities were assigned in writing for overall management of the records program.
- Records storage controls were established in accordance with FSAR commitments.
- Records storage facilities were described in writing.
- Provisions had been made to establish the retention periods for all types of records.
- Methods had been specified for the disposal of records no longer required.

The following documents were reviewed to verify that these criteria had been incorporated into the records program:

FPL-NQA-100A	Topical Quality Assurance Report, Revision 7
QP 3.4	Plant Changes and Modifications for Operating Plants, Revision 7
QP 3.6	Control of FPL Originated Design, Revision 3
QP 3.2	Backfit Procedures, Revision 0
QP 17.1	The Collection and Storage of Quality Assurance Records for Nuclear Power Plants, Revision 12
QI 1-PR/PSL-7	Quality Control Organization, Revision 5
QI 1-PR/PSL-8	Administrative Organization, Revision 0
QI 2-PR/PSL-1	Quality Assurance Program, Revision 5
QI 17-PR/PSL-1	Quality Assurance Records, Revision 7

The following records were retrieved from the St. Lucie document control system:

Nuclear Control Center Operations Daily Log, May 17, 1985

Plant Work Order 2215, Interim Ultimate Heat Sinks, April 1, 1981

PCM 208-283 - Unit 2, Charging Pump "O" Ring Modification, November 8, 1983

LER 84-10, September 23, 1984

Operating Procedure 1800050, Monthly Fire Valves and Fire Pumps Surveillance, June 19, 1985

Administrative Procedure 1-0010125, Schedule of Periodic Tests, Checks, and Calibrations Data Sheet No. 8, Quarterly Valve Cycle Test, May 31, 1985

Purchase Order 18656 - 67089A, Crosley Valve Seal Part Number 3760087-2, May 7, 1985

Quality Control Report 3900-14361, Procedure Compliance OP 0010122 and 0010129, July 6, 1984

Personnel Health Physics Examination Record, June 22, 1984

I&C Procedure 1-1400064, Installed Plant Instrumentation Calibration, Appendix C, July 15, 1983

The above records were readily retrievable and the quality of the microfiche record was good. Several of the records were tracked by the inspector through their review cycle. Several of the records were being processed for filming (at an intermediate point) prior to becoming a QA record. The intermediate controls were adequate. QA audit reports, 10 CFR 21 reports, and QA personnel qualification packages are not maintained as QA records on site; these records as well as a number of other records such as control room logs are stored at other corporate sites. During performance of the audit procedures, QA audit reports and qualification packages were retrieved from off site within one day or less.

Space is at a premium in the small vault area which also serves as a primary work area. The vault houses two computer terminals, at least two microfiche tape machines and three or more employees. Control room logs are kept in cardboard boxes and manila envelopes which accumulate for one year prior to being shipped off site; this accumulation takes up considerable floor space in the vault. Plans were underway to store the logs in cardboard files at the time of the inspection. With the addition of a new simulator building in 1986, existing additional vault space should become available as the training group moves to their new location.

Within this area, no violations or deviations were identified.

8. Document Control (39702)

- References:
- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants, and Fuel Reprocessing Plants
  - (b) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation)
  - (c) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
  - (d) Technical Specifications, Section 6

The inspector reviewed the licensee document control program required by references (a) through (d) to verify that the program had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program:

- Administrative controls had been established for issuance, updating, and recall of outdated drawings.
- Master indices were maintained for drawings, manuals, and procedures.
- Administrative controls had been established for distributing, updating and recall of outdated documents.
- Administrative controls had been established for distribution of as-built drawings and P&IDs in a timely manner.
- Administrative controls had been established to control discrepancies between as-found conditions and as-built drawings.

The documents listed below were reviewed to verify that these criteria had been incorporated into the document control program:

FPL-NQA-100A	Topical Quality Assurance Report, Revision 7
QP 2.4	Preparation and Revision of Quality Instructions, Revision 6
QP 3.4	Plant Changes and Modifications for Operating Plants, Revision 7
QP 6.1	Control of Construction Project Contractor Drawings, Specifications, and Procedures, Revision 1

QP 6.2	Control of Documents Issued by Florida Power and Light Company, Revision 4
QP 6.6	Drawing Control for Operating Nuclear Power Plants, Revision 1
QI 3-PR/PSL-1	Design Control, Revision 13
QI 4-PR/PSL-1	Procurement Document Control, Revision 7
QI 5-PR/PSL-1	Preparation, Revision, Review/Approval of Procedures, Revision 26
QI 6-PR/PSL-1	Document Control, Revision 9

The inspector selected several controlled documents which were issued within the previous two months and verified that they were issued and received at various controlled document locations. The following documents were reviewed:

<u>Drawings</u>	<u>Procedures</u>	<u>Technical Manuals</u>
2998-G-078	I&C 1400055	8770-4139
2998-G-089	GM M-003	2998-12218
8770-G-081	QI 7-PR/PSL-1	2998-11976
	CO C-120	
	AO 0005746	
	AO 0005723	
	OP 0630022	
	OP 0910050	
	OP 0120026	
	HP 14F	

Copies of each document containing revisions consistent with the master index were found at each location checked. Each location checked maintained a master index of controlled documents.

Within this area, no violations or deviations were identified.

9. QA/QC Administration (35751)

- References:
- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Processing Plants.
  - (b) FSAR Section 3.2, Classification of Structures, Systems, and Components.
  - (c) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations), Revision 2.

(d) ANSI N18.7-1976, Administrative Controls and Quality Assurance for Operational Phase of Nuclear Power Plants.

(e) Technical Specifications, Section 6

The inspector reviewed the licensee QA/QC administrative program required by references (a) through (e) to verify that the program had been established in accordance with regulatory requirements and industry guides and standards. The following criteria were used during this review to determine the overall acceptability of the established program:

- The QA program documents clearly identified those structures, systems, components, documents, and activities to which the QA program applies.
- Procedures and responsibilities were established for making changes to QA program documents.
- Administrative controls for QA/QC procedures required review and approval prior to implementation, control of revisions, and control of distribution and recall.
- Responsibilities were established to assure overall evaluation of the effectiveness of the QA program.
- Methods existed to modify the QA program to provide increased emphasis on identified problem areas.

The documents listed below were reviewed to verify that the previously listed criteria were incorporated into the licensee's QA/QC administration program.

FPL-NQA-100	Topical Quality Assurance Report, Revision 7
QP 2.2	Revision of the Topical Quality Assurance Report, Revision 4
QP 2.3	Preparation and Revision of Quality Procedures, Revision 8
QP 2.4	Preparation and Revision of Quality Instructions, Revision 6
QP 2.7	Identification of Safety Related Structures, Systems, and Components, Revision 1
QP 2.12	FPL QA Program Applicability for Fire Protection Systems, Revision 2
QP 5.1	Operating Plant Procedures, Revision 3
QP 10.3	Inspection and Surveillance, Revision 6

- QP 16.1            Corrective Action, Revision 8
- QP 18.1            Conduct of Quality Assurance Department Quality Audits, Revision 11
- QI 2-PR/PSL-1    Quality Assurance Program, Revision 10
- QI 5-PR/PSL-1    Preparation, Revision, Review/Approval of Procedures, Revision 26
- QI 16PR/PSL-1    Corrective Action, Revision 16
- QI 18-PR/PSL-2    Quality Control Surveillances, Revision 11
- QI 18-PR/PSL-3    Quality Control Monitoring, Revision 4

Site QA audits were reviewed to determine the effectiveness of the QA Administrative Program and these are indicated in paragraph 6.

The inspector reviewed procedure QP 2.12 and determined that the requirements of Regulatory Guide 1.120, Revision 1, concerning specific criteria for fire protection which must be included in the licensee's QA program appear to be implemented by the subject Quality Assurance Manual Procedure.

The licensee is a member of JUMA; consequently, QA program effectiveness was reviewed during this annual audit. Findings identified during this audit are corrected by the established corrective action control system. The inspector reviewed the latest licensee JUMA Report, QAS-QAD-85-1, dated March 29, 1985, and determined that the Quality Assurance Department was meeting its commitments and providing effective programmatic control.

Within this area, no violations or deviations were identified.

#### 10. Surveillance Testing and Calibration Control (61725)

- References:
- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
  - (b) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations), Revision 2
  - (c) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
  - (d) Technical Specifications, Section 4

The inspector reviewed the licensee surveillance testing and calibration control program required by references (a) through (d) to verify that the program had been established in accordance with regulatory requirements,

industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program:

- A master schedule for surveillance testing and calibration delineated test frequency, current status, and responsibilities for performance.
- The master schedule reflected the latest revisions of the Technical Specifications and operating license.
- Responsibilities were assigned to maintain the master schedule up-to-date and to ensure that required tests are performed.
- Detailed procedures with appropriate acceptance criteria were approved for all surveillance testing requirements.
- The program defined responsibilities for the evaluation of surveillance test data as well as the method of reporting deficiencies and malfunctions.

The inspector also verified that similar controls were established for calibration of instruments used to verify safety functions but not specifically identified in the Technical Specifications. The documents listed below were reviewed to verify that these criteria had been incorporated into the surveillance testing and calibration control program:

Administrative Operating Procedure 1,2-0010125, Schedule of Periodic Tests, Checks, and Calibrations, Revision 62

Plant Operating Procedure 0010437, Schedule of Mechanical Maintenance Surveillance Requirements, Revision 15

Plant Operating Procedure 0010132, ASME Code Testing of Pumps and Valves, Revision 5

QP 12.2, Calibration Control of Installed Plant Instrumentation and Control Equipment, Revision 1

QI 5-PR/PSL-1, Preparation, Review, and Approval of Procedures, Revision 26

QI 10-PR/PSL-4, Plant Inservice Inspection, Revision 4

QI 10-PR/PSL-4, TS Surveillance Inspection of Reactor Building, Revision 4

QI 11-PR/PSL-1, Test Control, Revision 6



QI 12-PR/PSL-1, Calibration of Installed Plant Instrumentation and Control Equipment, Revision 3

QI 15-PR/PSL-1, Nonconforming Materials, Parts, and Components, Revision 6

QI 16-PR/PSL-2, Corrective Action, Revision 16

I&C Department Procedure 1,2-1400064, Installed Plant Instrumentation Calibration, Revision 23,4

The following corporate audits were reviewed to gain a perspective of the programs current status:

QSL-OPS-84-313, QA Department Audit of PSL Units 1 and 2 TS Appendix A, Sections 3/4.5, Emergency Core Cooling Systems and 3/4.9, Refueling Operations, June 5, 1984

QSL-OPS-84-318, QA Department Audit of PSL Units 1 and 2 TS, Appendix A, Section 3/4.7, Plant Systems, July 25, 1984

QSL-OPS-84-323, QA Department Audit of PSL Units 1 and 2 TS, Appendix A, Section 3/4.4, Reactor Coolant System, August 29, 1984

QSL-OPS-84-331, QA Department Audit of PSL Units 1 and 2 TS, Appendix A, Section 3/4.11, Radioactive Effluents and 3/4.12, Radiological Environmental Monitoring, October 31, 1984

QSL-OPS-85-350, QA Department Audit of PNE Compliance to PSL Units 1 and 2 TS, Appendix A, Section 3/4.1, Reactivity Control, 3/4.2, Power Distribution Limits, 3/4.10, Special Test Exceptions, 2.0, Safety Limits and Limiting Safety System Settings, February 1, 1985

QSL-OPS-85-354, QA Department Audit of PSL Units 1 and 2 TS, Appendix A, Section 3/4.3, Instrumentation, March 21, 1985

QSL-OPS-85-356, Quality Assurance Department Audit of PSL Units 1 and 2 TS, Appendix A, Section 3/4.6, Containment Systems, May 20, 1985

Many of the findings involved procedures which did not fully implement the Technical Specifications (TS). As an example, a chemistry procedure lacked a time limit on the analysis as required by the TS. The procedural response time of a containment pressure instrument was not consistent with the TS. These errors were promptly corrected. Many other findings of lesser significance were identified and expediently corrected.

Surveillance tests required by the TS and inservice inspection (ISI) of pumps and valves required by ASME Code Section XI and TS Section 4 were scheduled together in a manual master schedule. This schedule is maintained in the control room and is checked daily by a member of the Quality Control

staff, which is responsible for TS surveillance compliance. This system is well monitored and assigns enough overlapping responsibilities to greatly reduce the probability of a missed surveillance. Grace periods are reserved solely for instances where surveillance tests cannot be performed on time.

To assess program implementation, the following surveillance test work packages were reviewed:

OP-1-0700050, Auxiliary Feedwater Periodic Test, 1A AFW Pump, June 13, 1985.

OP-1-3200058, Surveillance Requirements for Total Radial Peaking Factor, June 14, 1985.

OP-1-0010125, Schedule of Periodic Tests, Checks, and Calibrations, 1C Charging Pump, June 18, 1985.

OP-1-0410050, HPSI, LPSI Periodic Test, June 18, 1985

OP-1-0420050, Containment Spray - Periodic Test, Pump, and Valve Operability, 1A Containment Pump, June 20, 1985.

Several questions concerning these data packages were discussed with the licensee:

- a. Some of the pump test procedures required that the pump be run until three consecutive temperatures readings at 10 minute intervals do not vary by more than three percent. The individual performing the test apparently makes this determination in the field but does not record the results. This could result in mathematical mistakes or in shortcutting of the procedure. However, the licensee felt assured that this was not occurring.
- b. When installed process instruments are used to verify TS surveillance test compliance, the current calibration status of the installed instrument is not verified prior to the test. This is normally checked by a sticker on the gage or by checking documentation. The implied assumption is that the calibration program maintains all subject instruments calibrated on schedule. As such, the calibration program should be closely monitored to assure that the above assumption is valid.
- c. Monthly pump vibration data on the charging pumps, High Pressure Safety Injection (HPSI) pumps, and Low Pressure Safety Injection (LPSI) pumps was reviewed. Although all recorded readings were under the alert range as defined by ASME Code XI, Subsection IWP, the vibration levels for an individual pump often varied to a great extent month to month. For example, vibration level H1 on the 1A LPSI pump was recorded as 0.98 mils on May 7, 1985, and as a 0.11 mils on June 4, 1985. Though these levels are acceptable, if this data scatter remained if and when the pump began to fail, this fact may initially be

missed. The licensee stated that large fluctuations were inevitable in this range of small vibrations and that the fluctuations would dampen at high vibration levels. Nevertheless, readings a decade apart may not be fully explicable by this argument. The licensee uses handheld vibration meters which are highly dependent on individual nuances. Repeatability of results could best be achieved by having the same person perform vibration tests on specified pumps. In addition, the two types of handheld meters used, Mechanalysis Model 308 and IRD Model 306, are not entirely compatible. They have different frequency ranges, maximum sensitivities, and amplitude ranges. As a minimum, the type of instrument used on each pump should be consistent. The licensee also possesses the Bently Nevada Model TK-80 handheld vibration meter, which permits frequency analysis, but this instrument was not used for the vibration tests reviewed by the inspector. The licensee maintains a periodic training program on the use of vibration meters and it appears that increased emphasis on training may yield the most productive results. The licensee was receptive to these concerns and will consider them while upgrading the vibration monitoring program.

The licensee is required to establish a program for installed process instrumentation associated with safety-related systems or functions. These instruments are listed in I&C Department procedures 1-1400069 and 2-1400064 for instrumentation located in Units 1 and 2, respectively, and are scheduled for periodic calibration. The following plant instruments were chosen at random from several surveillance and ISI test procedures to verify their inclusion in the calibration program:

LT-07-2	Refueling Water Tank Level
PI-07-1A	Containment Spray Pump Discharge Pressure
PI-3318	HPSI 1B Discharge Pressure
PI-3317	HPSI 1C Discharge Pressure
PI-12-18A	AFW Pump 1A Suction Pressure
PI-09-7A	AFW Discharge Pressure

The above instruments were included in the program. Calibration frequencies appeared consistent with instrument type and good engineering practice.

Within this area, no violations or deviations were identified.

#### 11. Measuring and Test Equipment Program (61724)

- References:
- (a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
  - (b) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations), Revision 2

- (c) ANSI N18.7-1976, Administrative Controls and Quality Assurance of the Operational Phase of Nuclear Power Plants
- (d) Regulatory Guide 1.30, Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment, August 11, 1972
- (e) ANSI N45.2.4-1972, IEEE Standard, Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations

The inspector reviewed the licensee measuring and test equipment (M&TE) program required by references (a) through (e) to verify that the program had been established in accordance with regulatory requirements and industry guides and standards. The following criteria were used during this review to determine the overall acceptability of the established program:

- Responsibility was delegated and criteria established to assign and adjust calibration frequency for each type of M&TE.
- An equipment inventory list identified all M&TE used on safety-related components, the calibration frequency and standard, and the calibration procedure.
- Formal requirements existed for marking the latest calibration date on each piece of equipment.
- The program assured that each piece of equipment was calibrated on or before the date required or stored in a location separate from inservice M&TE.
- Written requirements prohibited the use of M&TE which was not calibrated within the prescribed frequency.
- When M&TE was found out of calibration, the program required documented evaluations to determine the cause of the out-of-calibration condition and the acceptability of items previously tested.
- The program assured that new M&TE was added to the inventory list and calibrated prior to use.

The documents listed below were reviewed to verify that these criteria had been incorporated into the M&TE program:

QAM, Section 12.1, Calibration and Control of Measuring and Test Equipment, Revision 4

QAM, Section 12.2, Calibration Control of Installed Plant Instrumentation and Control Equipment, Revision 1

QI 12-PR/PSL-1, Calibration of Measuring and Test Equipment, Revision 12

QI 12-PR/PSL-2, Calibration of I&C Department Measuring and Test Equipment, Revision 8

QI 12-PR/PSL-3, Electrical Measuring and Test Equipment, Revision 8

QI 12-PR/PSL-4, Instructions for Mechanical Measuring and Test Equipment, Revision 7

I&C Department Procedure 1400067, Calibration of I&C Department Measuring and Test Equipment, Revision 21

The inspector reviewed QSL-OPS-84-329, QA Audit of 10 CFR 50, Appendix B, Criterion XII, October 26, 1984. This audit identified five findings in the area of M&TE. One of the findings involved a discrepancy between the Topical Quality Assurance Report (TQR) and Quality Instruction QI 12-PR/PSL-1 in that the TQR required M&TE reference standards to have one-fourth the maximum error of field standards while the QI required that reference standards be at least as precise as the field standards. A TQR change request had been submitted to NRC for approval. Another finding of significance involved a discrepancy between Quality Procedure QP 12.1 and Quality Instruction QI 12-PR/PSL-1. The QP delineated environmental conditions which must be controlled for the calibration of M&TE while the QI did not address environmental considerations. The QI was changed to be consistent with the QP, but implementation of this policy remains inadequate and is addressed as a violation below.

Implementation of the measuring and test equipment program was assessed in the I&C calibration lab and the Mechanical shop. In the I&C lab, the following items of M&TE were selected from the master equipment index to evaluate equipment control and accountability:

PSL-011	Fluke Digital Multimeter 8600A
PSL-015	Fluke Digital Multimeter 8600A
PSL-039	General Radio Strobotac Model 1538A
PSL-111	Honeywell Visicorder Model 1858-079
PSL-137	Keithley Picoammeter Model 417
PSL-268	Ashcroft Test Gauge 0-3000 psig
PSL-39A	Heise Test Gauge 0-400 psig
PSL-444	Dwyer Incline Manometer 0-1" H2O

Initially, PSL-015 could not be found even though it was documented as being checked in. Later, it was determined that it was still checked out by the last individual listed and that the check-in had been documented by mistake. This appeared to be an isolated incident.

The following calibration procedures were reviewed:

I&C Procedure 1400067

Sheet #001C, Fluke 8600A, Revision 21  
 Sheet #013, Fluke 8012A, Revision 21  
 Sheet #037, General Radio Megohm Bridge Model 1644A, Revision 21  
 Sheet #062, Triplet 630 Multimeter, Revision 21

These procedures adequately described steps for performing the calibration or referred to a vendor manual for this information. Acceptance criteria was clearly stated. At least in the case of the Fluke 8600A procedure, manufacturer's calibration environmental test conditions were not included in the procedure. This issue is addressed as a violation below.

In the Mechanical shop, the following items of M&TE were chosen at random from the equipment list as a check of control and accountability.

M-12	Micrometer Set 24"-30"
M-30	Torque Wrench 200 ft-lb.
M-55-7	Dial Indicator
M-75	Vernier Caliper 24"
M-87	Torquometer 600 ft-lb.

The above M&TE was either properly stored in the shop or its location was adequately documented.

Within this area, one violation and one unresolved item were identified and are discussed in the following paragraphs.

a. Failure to Control Environmental Conditions for Calibration of M&TE

10 CFR 50, Appendix B, Criterion II, requires that suitable environmental conditions be provided for activities affecting quality. Calibration of M&TE is sensitive to environmental conditions and the licensee's Quality Procedure QP 12.1 states:

M&TE shall be calibrated in environments which will not affect their accuracy. Factors which shall be considered include: temperature, humidity, vibration, radio frequency interference, electromagnetic interference, background radiation, dust, cleanliness, and fumes.

However, measures had not been established to control the above environmental conditions. In the I&C lab, a strip chart temperature and humidity recorder was operating but administrative limits defining acceptable conditions had not been established. As a result, the recorder is not actually monitored. Even though acceptable conditions are probably normally maintained, the program would not preclude calibration under abnormal, unacceptable conditions. In the Mechanical shop, environmental conditions are not monitored for the calibration of precision measuring equipment, which is sensitive to temperature, rate of change of temperature, and may require a period of temperature



stabilization prior to calibration. Acceptable environmental conditions should be based on vendor technical manuals and industry guides and can either be maintained continuously or else verified prior to each calibration known to be sensitive to a particular environmental condition. Failure to establish measures controlling environmental conditions for calibration of M&TE is identified as violation 335,389/85-16-01.

b. Torque Wrench Acceptance Criteria

Maintenance procedure M-0004, Torque Wrench Tester and Operation, and Quality Instruction QI 12-PR/PSL-4, Instructions for Mechanical Maintenance M&TE, establish the acceptance criteria for torque wrench calibrations as 10 percent. This tolerance is considerably higher than the intrinsic accuracy of torque wrenches, which is typically about four percent. The unresolved issue is whether ten percent accuracy is acceptable for all reactor plant applications. The licensee has agreed to respond to this issue by August 1, 1985, explaining the basis for the use of ten percent acceptance criteria. Pending this response and further inspection, this item is identified as unresolved item 335,389/85-16-02.

12. Licensee Actions on Previously Identified Inspection Findings (92701)

a. (Open) Inspector Followup Item 335/84-09-04, 389/84-12-04: Control of Shaft Keys

The inspector reviewed CAR 5-4-84 which contained letter, EPO-84-1062, addressing the control of shaft keys. Based on the recommendation of Power Plant Engineering, two types of material are currently stocked for use as spare/replacement shaft keys namely high strength steel, A-193 (4140) and stainless steel, ASTM 564 grade 630 (17-4 PH). The selection of these materials appears technically adequate; however, the licensee has failed to develop a documented program to control the implementation of shaft key usage. Based on conversations with licensee personnel the determination of the material to be used for spare/replacement shaft keys is delegated to the Mechanical Maintenance Group who, by verbal agreement, decide on shaft key material through reference to the component drawing bill of material. As previously stated in the referenced inspection report, until the licensee develops and implements a program (written procedures) to control the use of safety-related shaft keys throughout the plant (storeroom and maintenance), this Inspector Followup Item (335/84-09-04 and 389/84-12-04) will remain open.

b. (Open) Inspector Followup Item 335/84-09-05, 389/84-12-05: Program to Control the Use of Aerosols

As stated by the licensees onsite QC organization, the Program to control the use of aerosols is a generic problem which is being addressed at the corporate level. Because no objective evidence could



be presented to the inspector regarding the closeout of this item it will remain open until the licensee develops and implements a program to control the use of commercial grade aerosols.

- c. (Open) Inspector Followup Item 335/84-09-06, 389/84-12-06: Level A Storeroom

CAR 5-16-84 was provided to the inspector which documented the installation of a temperature and humidity recorder in the Level A Storeroom. The subject recorder was placed on the I&C list and is maintained in accordance with Procedure QI 13-SI, Revision 7. As stated by the licensee, the temperature and humidity recorder is positioned outside the stores supervisors office where storeroom personnel "keep an eye on it". When asked what the temperature and humidity tolerances were, the licensee stated that ANSI N45.2.2-1972 and Regulatory Guide 1.38, Revision 2 are not definitive in this area; however, they are nominally maintained at 70F and a relative humidity of 50 percent, which appear satisfactory. The licensee was unable to provide objective evidence that a documented program had been implemented to maintain the specified temperature and humidity and provide for storeroom operational personnel to be aware of these parameters. It is noted by the inspector that the requirements of ANSI N45.2.2-1972 state that items requiring Level A storage environmental controls such as temperature and humidity shall be controlled within specified limits. The specification of these environmental controls including the relative tolerances is the responsibility of the licensee. Until the licensee establishes written procedures for the control and monitoring of temperature and humidity in the Level A storeroom, this Inspector Followup Item will remain open.