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Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

April 2, 1998

L-98-096 10 CFR 50.4

U. S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, D.C. 20555

RE: St. Lucie Units 1 and 2 Docket Nos. 50-335 and 50-389 Management Review Meeting - March 1998

During a November 1995 meeting with the NRC, Florida Power and Light Company (FPL) reviewed the progress made in completing activities outlined in the St. Lucie Plan to Improve Operational Performance. FPL stated that meetings to review performance would be held monthly. In the November meeting, FPL committed to provide the monthly review materials to the NRC.

Enclosed is a copy of the indicators that were discussed at the March 27, 1998, FPL management review meeting at St. Lucie.

We look forward to NRC feedback. If you have any questions on this material, please contact us.

Very truly yours,

J. A. Stall Vice President St. Lucie Plant

JAS/spt

Enclosure

cc: Regional Administrator, USNRC, Region II Senior Resident Inspector, USNRC, St. Lucie Plant



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Business Plan



J. Scarola





St. Lucie Nuclear Plant OSHA Recordable Injuries











St. Lucie Nuclear Plant

Unit 2 Equivalent Availability

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Historical Data



Current Data





St. Lucie Nuclear Plant WANO Overall Performance









St. Lucie Nuclear Plant

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Operations

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H. Johnson



PSL Operations Corrective Measures for Recent Clearance Events

Human Performance Enhancements

- P&IDs are used by the Operators in the field when hanging and releasing clearances.
- The Operations Management Observation Program is being enhanced to include observation of all facets of the clearance process (ex: writing, review, execution).
- Clearance Center Layout is being changed to reduce traffic flow and lessen distractions.
- Outage manning of the Clearance Center will include an NPS. This will place the Clearance Center oversight in parity with the Control Room.



Procedural Enhancements

- Unisolable Systems-enhanced instruction for clearance requirements.
- Valves within clearance boundaries on all systems are verified in the correct position during a clearance release.



- Hot License Class 13A 7 RCO's License 6/98
- Instant SRO's 3 SRO's License 6/98
- Hot License Class 14 14 RCO's License 12/98
 2 SRO's License 12/98
 1 RCO 7/98 License 12/98

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5



- Hot License Class 14 Startup Certifications completed 3/98
- Hot License Class 13A Student removed due to failure 3/98
- Student removed from HLC 13A placed in mentor/self-study program to join HLC 14 7/98
- 1 Instant SRO moved to HLC 14 due to needing startup certification and generic fundamentals exam.





PSL Operations

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Operator Work Arounds

And And And And



Oldest - PM 96-02-300 - Unit 1 - CST Loop Seal Loss - Schedule Completion - 7/30/98







- Short Duration Refueling Outages, 1/Year
 - Avg. 70 days, 6.65 REM/Day on Unit 1
 - Avg. 64 days, 3.32 REM/Day on Unit 2
- Ultra-Fine CVCS Filtration
- More Emphasis on Cobalt Reduction
- Continue Hydrogen Peroxide Addition
- Ownership of Manager's Dose Budget Concept
- Aggressive Screening of Plant MOD's
- Benchmarking 'Best' Utilities
- Additional Resources in ALARA, Outage and Non-outage
- Increased Shielding in RCB
- Limit Power Entries







St. Lucie Nuclear Plant Radiation Exposure





St. Lucie Nuclear Plant Personnel Contaminations



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St. Lucie Nuclear Plant

Maintenance

J. Marchese



Background/History

- Seawater intrusion into 2B1 hotwell on 3/11/98. Identified by Chemistry.
- Operations stopped 2B1 C.W. pump & drained waterbox to facilitate inspection.
- Waterbox entry was made on 3/11/98 and helium tracer was used to determine leakage source per MMG-12.02.
- Discovered one damaged plug and one missing plug. Damaged plug tube and air ejector suction pipe flange were leaking plug replaced, tightened bolting and caulked air ejector suction pipe flange.





Unit 2 Condenser In Leakage

- Performed helium tracer test as PMT. Still showed leak indication.
- Trace was evaluated by system engineer and assessed to be a background change.
- Results were deemed acceptable (not leakage) based on small indication, waterbox closed up.
- Re-entry was later required and another tube was discovered to be leaking.
- PMT was performed and accepted by Chemistry.





PSL Maintenance Unit 2 Condenser In Leakage

Root Cause

- Insufficient Formalization of process.
 - Department accountability for acceptance of PMT results not properly defined.
 - No formal PMT process or criteria. (Based on experience tribal knowledge, criteria not in procedure)
 - Chemistry did not understand how change in test methods would change test results.
 - No acceptance signoff (accountability) prior to closing up waterbox.



Corrective Actions

- Chemistry wrote guidelines for PMT to be added to MMG 12.02.
- Chemistry will ensure adequately qualified personnel and supervisors are available each time work is performed.
- Maintenance require signed acceptance of test results prior to closing.







Performance Analysis

Critical Maintenance Management (CMM) for Mid-Cycle CCW Heat Exchanger

Tube Cleaning & ECT





Labor Analysis

NPS Labor Services

- # of People 20
- Actual Manhours 1034
- Actual Cost \$31,482

(Based on actual manhrs)

• Comments:

Actual job costs for performing work. Excludes \$4,650 badging costs because decision made to badge versus escort as these people are outage personnel and will be badged for the upcoming refueling outage SL2-11,i.e. badging (requal) for 20 outage workers complete.

<u>FPL Labor</u>

- # of People 22
- Scheduled Manhours 1496
- Estimated Cost \$37,796 (Based on schedule)

• Comments:

Cost is an estimate based on using 22 people on two(2) 35c shifts (10 workers & 1 foremen 11 total) for shift for five(5) days, 12 hours per shift. This the standard crew structure used by PSL mechanical maintenance to perform mid cycle CCW Heat Exchanger cleaning





Basis for Decision - Why?

Resource Limitations:

57 Total journeymen minus the following situations:

- 2 Full Time co/union business
- 2 Full time safety, also union VP
- 4 on vacation
- 2 in GML training
- 7 on medical restrictions (not able to work) at the time
- 3 required on E-drill
- 22 required to do CCW Heat Exchanger cleaning
- 42 Total committed Journeymen

The remaining journeymen would be required to maintain two operating units and equals to approximately 3 on days, 7 on peaks and 5 on mids assuming no one calls in sick. Realistic numbers could be on the order of 10 to 12 based on past absenteeism data. This decision was reached by the mechanical maintenance based on analysis of manpower and performance expectations.





PSL Maintenance Basis for Decision - Why?

• Workload Requirements:

- Maintenance work backlogs and scheduled mechanical maintenance work (work week 9B) could not be
- satisfactorily maintained with the people available to perform this work.

• <u>Cost</u>

Cost estimates/analysis for this revealed job cost were very competitive/close between the two organizations, "virtually even".







PSL Maintenance Bottom Line Results

• <u>SCHEDULE PERFORMANCE</u>

- Completed significantly ahead of Schedule
- Performed outage work scope in CCW during this CMM
- Completed additional CCW work due to schedule success
- Outage work also performed during this CCW work

• QUALITY

- No rework, no CR'S, no work issues
- Worker's identified several additional performance improvement opportunities that could lead to greater successes in the future
- Achieved better results due to bi-directional cleaning

• <u>SAFETY</u>

• No injuries





Keys to Success

<u>MULTI FUNCTIONAL WORKFORCE</u>

- Worker willingness to cross work jurisdictions (multi functional)
- Excellent in-field hand offs

FIELD SUPERVISION PRESENCE

• Strong in field supervision presence allowed for rapid reassignment of resources as needed to increase work efficiency

• WORK FLEXIBILITY

- Reassignment of labor during periods of slack times to other work
- Ability to destaff (lay off) at end of individual's work activity versus a scheduled shift change/roll back

• INTEGRATED PRE-PLANNING

• Worker's took active role in upfront pre-planning with a "best ever done" approach to accomplishing work





PSL Maintenance

Keys to Success

• FURTHER IMPROVEMENT IDENTIFIED

- Pursue more than dual lance hydrolasing to reduce cleaning time and permit additional ECT time
- Plan to accomplish 100% ECT in one mid-cycle to allow heat exchanger work to be removed from refueling outages
- Plan for more CCW work in CMM that would reduce outage work





Minor Maintenance Initiatives

Background/History

- Benchmarked best performers
 - Established Minor Maintenance Programs
 - Allocate 20 25% Workforce (TDM Study)
 - Multi-discipline crews, with planner, HP & QC
 - Full time SRO assigned as lead





Minor Maintenance Initiatives

Corrective Actions (Immediate)

- 1. GML Training for Team Leader
- 2. Assign SRO full time
- 3. Establish Composite Crew (EM/MM/IC/UT)
- 4. Expand size and number of crews
- 5. Expand scope of Minor Maintenance
- 6. Designate permanent Planner/Tech
- 7. Continue to look outward in industry

- Complete
- Complete
- 4/15/98
- 4/15/98
- 7/15/98
- 6/1/98
- 9/15/98






PSL Maintenance

Minor Maintenance Initiatives

Future Direction (Long Term)

- Contract changes -- Peer inspections, HP, etc.
- Multi functional training (General skills)
- Hang own clearances

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PSL Maintenance Non-Outage Maintenance Backlog







27 316



St. Lucie Nuclear Plant

Work Control

C. Wood





PSL Work Control Work Identified

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PSL Work Control Unscheduled Work Backlog

















PSL Work Control

Work Plan Deviations





Scheduled Outage Work Orders

PSL Work Control Unit 2 Outage Hardspots

ItemManager1) Year 2000 ModificationBibleScope - Not fully knownSchedule - Will not meet MilestoneCost - Unknown

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2) Operations Schedule Performance Johnson 9/15/98
Culture - Not Schedule Conscious
Procedures - Need Streamlined
Resource Mgmt - Needs Improvement

Scheduled

Resolution

8/15/98

ItemManager3) Fire Protection Emergent ModificationsBibleScope - Not fully knownSchedule - Will not meet MilestoneCost - Not fully knownYes to the state

4) Outage Budget He
Several Required Items Unbudgeted
Several Emergent Items Unbudgeted
No Basis Document for Outage Cost

Scheduled <u>Resolution</u> 8/15/98

Heroux 4/30/98

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Scheduled

PSL Work Control

Unit 2 Outage Hardspots

<u>Item</u> 5) Outage Inprocessing Processing Not Quick Enough to Support Ramp Up Need Cost Reduction

<u>Manager</u>	Resolution				
Fadden	4/30/98				

St. Lucie Nuclear Plant

Engineering

C. Bible

First week of NRC FPFI was held from 3/9/98 to 3/13/98. NRC identified the following 16 issues being followed:

NRC Issue

Thermolag Wall Qualification

Thermolag walls qualified for less than 3 hours. Use of GL 86-10 and 50.59 process questioned. Defend Unit 2 as is. Review Unit 1 commitments and possibly add suppression to cable loft.

Resolution

PSL Engineering

Fire Protection Functional Inspection

NRC Issue

Safe Shutdown Analysis

Timeline analysis for manual actions not available.

HVAC Inconsistencies in SSA and for post-fire smoke removal.

Limited consideration of IN 92-18 (MOV hot shorts).

Resolution

Timelines being developed.

HVAC analyses part of SSA validation effort.

In 92-18 being considered in revised SSA. May result in MOV mods.

PSL Engineering

Fire Protection Functional Inspection

NRC Issue

Safe Shutdown Analysis

Detailed containment analysis not included in SSA.

High impedance faults not analyzed and manual actions too general.

SSA does not include opposite train effects.

Resolution

Revised SSA does have detailed containment analysis.

Detailed HIF calcs performed w/limited impact.

Considered in revised SSA. Limited impact on results.

PSL Engineering Fire Protection Functional Inspection

NRC Issue

Fire Protection Program

No apparent program ownership.

OOS time for non-Tech Spec equipment not considered.

Limited consideration of SSA in program.

Compensatory actions for SSD equipment/features not in program.

Resolution

Management evaluating current organization.

Industry being queried and program changes being considered.

Program enhancements being considered.

Program enhancements being considered.

NRC Issue

Resolution

Fire Protection Program

PSL Threshold for FP operability and reportability determinations.

Position paper developed.

Miscellaneous

Hose station design not adequate.

Hose stations design reviewed and additional hose stations to be added.

Timeliness of 1995 QA audit.

Transient combustible noncompliance.

Bounding conditions in draft penetration seal test plan questioned. Potential for escalated enforcement.

CR generated.

Test plan in draft and additional details to be incorporated.

To date, NRC has issued 56 formal information requests.

Additional PSL action taken in the following areas while NRC is offsite.

- Emergency lights added to Unit 1. Unit 2 to follow.
- Unit 1 and 2 control room fire alarm enhanced.
- High impedance fault issue corrected on Unit 2.

PSL Engineering Year 2000

- Staffing:
 - Nuclear Division coordination team being developed
 - Request / Approval for 3 Specialized I&C / Software Engineers in progress
 - PSL Coordination team developed with sponsors from OPS, I&C Maint, Chem, HP, Simulator, Eng, Sys Eng, and others
- Meetings:
 - Weekly PSL coordination meetings
 - Monthly PSL/PTN coordination meetings
 - AD-Hoc Meetings for Security and Rad Monitors

PSL Engineering Year 2000

- Program:
 - Modeled after NUSMG / NEI NEI-97-07
 - Inventory / Assessment / Remediation / Testing
 - Admin Procedure being developed (PTN lead)
 - Corporate hand book developed
 - Draft Project Plan
- Inventory:
 - Unit 2 inventory complete, ready for verification
 - CEOG inventory complete, no additional systems
 - Preparing to start on Unit 1 inventory

PSL Engineering Year 2000

- Assessment / Remediation:
 - DDPS / SOER known to be non-compliant, assessment ongoing by EUI
 - DEH considered to be compliant, need to develop confirmatory test
 - LEFM / KAYE vendors working on compliant version, should be able to perform update non-outage
 - QSPDS / LPFW / ADS / Boronometer / CEAPDS / ACTM / Versatiles / - CEOG systems - may be affected per CEOG working on approach to remediate

PSL Engineering Year 2000

• Schedule:

- One outage in each unit prior to 2000
 - Unit 2 Fall 1998
 - Unit 1 Fall 1999
 - Breakout schedule in POD for known Unit 2 activities
 - Total schedule being developed
- Costs:
 - Being developed
- Industry:
 - Monitoring progress at other utilities

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PSL Engineering

Safety System Unavailability

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Safety System Unavailability Auxiliary Feedwater System (1-Year Running Average)

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PSL Engineering

Safety System Unavailability

PSL Engineering System Windows

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St. Lucie Nuclear Plant

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Services

D. Fadden

- Participation by Region II NRC
- Evaluation by NRC and FEMA
- TVA peer observer (EC Sequoyah)
- 44 objectives in this exercise
- All 44 objectives demonstrated
- 7 objectives "met with issues"
- 0 objectives "not met"

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Overall Positive Observations:

- All emergency classifications appropriate
- All notifications to State/Counties/NRC within required time limits
- Participants remained focused on the scenario throughout the exercise
- Participants generally effectively used EPIPS


Control Room/Simulator Negative Observations:

- Control of NLO's following General Emergency
- In depth review of scenario (rad data vs possible plant condition alterations)
- Technical Support Center Negative Observations:
- Lack of prompt initiation of equipment repairs
- Delay in making site evacuation alarm and announcement for approximately 20 minutes
- Timing of turnover between EC and RM



Operational Support Center Negative Observations:

- OSC not effectively utilized in mitigating plant equipment problems
- NLO's were not adequately controlled when dispatched from the Control Room

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Emergency Operations Facility/Emergency News Center Negative Observations:

- Lack of consistent prognosis disucussions in State/County briefings
- Dose Assessment Procedure improvements
- Consideration for Protective Action Recommendations possibly developing overnight













St. Lucie Nuclear Plant

Materials Management

L. Rogers

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PSL Material Management Vendor Agreements In Place

- Anchor Darling -- Safety related 2" and under globe and check valves
 - Inventory Cost Avoidance \$125k
- Velan, Inc. -- Non-safety related 2" and under globe and gate valves
 Inventory Cost Avoidance \$25k
- ABB CE -- Reactor head o-ring sets & U1 charging pump plungers and packing
 - Inventory Cost Avoidance \$46k
- Gamma Metrics -- All spare parts for U1 and U2 nuclear instrumentation systems.
 - Inventory Cost Avoidance \$110k





PSL Material Management Vendor Agreements In Place

- Tapprogge America -- All spare parts for U1 and U2 condenser tube cleaning systems
 - Inventory Cost Avoidance \$21k
- Graphic Controls -- All recorder paper utilized at St. Lucie
 - Inventory Cost Avoidance \$17k

Above agreements have next day shipment established.





- Motion Industries -- Bearings, v-belts, sheaves, etc.
- Atlantech Industries -- General flexitallic gaskets, bulk gaskets, i.e., sheetings, rolls. Replication of O.E.M. supplied gaskets by 12/98.
- Torres Electrical
- Consolidated Electrical -- Local suppliers for all non-safety related electrical items.
- Fhram, Inc. -- H.P. clothing, misc. H.P. supplies
- Nova, Inc. -- Safety related Fasteners.
- Bisco, Inc. -- Non-safety related piping, steel, fasteners, mill supplies.



98 YE Target \leq 30 (\$M)



Historical Data

Current Data



St. Lucie Nuclear Plant

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Business Systems

R. Heroux



PSL Business Systems Cents/KWh

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Licensing

E. Weinkam







PSL Licensing

- 1998 NRC Enforcement Status
 - 3 Violations Received
 - 4 Non-Cited Violations Received
 - 3 Apparent Violations pending Potential Escalated Enforcement
 - Refueling Water Tank Recalculation Actuation Setpoint Error (2 Apparent Violations)
 - Unauthorized Protected Area Access (1 Apparent Violation)
- National/Regional Enforcement Status 1998
 - 66 Violations Issued Nationally and 27 Violations Issued Regionally in January 1998
 - National Average is 0.6 Violations per Unit; in Region II the Average is 0.8 Violations per Unit









PSL Licensing

- Licensing Activities
 - Significant Licensing Issues
 - Unit 2 Spent Fuel Pool Boron Credit Increased Capacity
 - Thermo-Lag
 - Unit 1 Fuel Vendor Transition
- Resident Inspector Changes
 - Senior Resident Leaving; No Replacement Identified
 - Resident Inspector Leaving in July
 - Resident Inspector in Training Arrived the Week of 3/16/98

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St. Lucie Nuclear Plant

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Human Resources

L. Morgan



PSL Human Resources Total Grievances







PSL Human Resources Resolved Grievances







PSL Human Resources Staffing Counts

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Nuclear Assurance

ILA STAT

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W. Bladow







Audits in Progress

- In-service Inspection and Testing
- Corrective Action (additional initiative)
- Security
- Emergency Preparedness

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PSL Nuclear Assurance QA Findings Open as of 3/19/98





PSL Nuclear Assurance Overdue PMAIS on 3/18/98

