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

Report Nos.: 50-335/91-16 AND 50-389/91-16

Licensee: Florida Power & Light Co
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: July 16 - August 16, 1991

Inspectors: _____ 9/3/91
for S. A. Elrod, Senior Resident Inspector Date Signed

_____ 9/3/91
M. A. Scott, Resident Inspector Date Signed

Approved By: _____ 9/3/91
K. D. Landis, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspection was conducted onsite in the areas of plant operations review, maintenance observations, surveillance observations, safety system inspection, review of special reports, review of nonroutine events, and followup of previous inspection findings.

Results:

Both units operated normally for the hot summer month periods. Dissolved oxygen in the secondary condensate on Unit 2 was slightly above optimal but did not create real operational problems. New vibration monitoring probes used in the ASME Boiler and Pressure Vessel Code testing of plant safety-related pumps required additional licensee technical evaluation as old and new pump data baselines were correlated. The introduction of the new probes was a positive upgrade to their test program. Staff support of the baseline changeover was also positive.

Within the areas inspected, the following unresolved item was identified:

URI 335,389/91-16-01, Containment Integrity, paragraph 3.

Violations or Deviations were not identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

D. Sager, St. Lucie Site Vice President
* G. Boissy, Plant Manager
J. Barrow, Fire Prevention Coordinator
H. Buchanan, Health Physics Supervisor
* C. Burton, Operations Superintendent
* R. Church, Independent Safety Engineering Group Chairman
* R. Dawson, Maintenance Superintendent
R. Englmeier, Nuclear Assurance Manager
* R. Frechette, Chemistry Supervisor
* J. Holt, Plant Licensing Engineer
* C. Leppla, I&C Supervisor
* L. McLaughlin, Plant Licensing Superintendent
A. Menocal, Mechanical Maintenance Supervisor
* T. Roberts, Site Engineering Manager
* L. Rogers, Electrical Maintenance Supervisor
N. Roos, Services Manager
C. Scott, Outage Management Supervisor
* D. West, Technical Staff Supervisor
J. West, Operations Supervisor
W. White, Security Supervisor
* D. Wolf, Site Engineering Supervisor
G. Wood, Reliability and Support Supervisor
E. Wunderlich, Reactor Engineering Supervisor

Other licensee employees contacted included engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC Employees

* S. Elrod, Senior Resident Inspector
* M. Scott, Resident Inspector
J. Norris, Project Manager

* Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Review of Plant Operations (71707)

Unit 1 began and ended the inspection period at power - day 45.

Unit 2 began and ended the inspection period at power - day 249.

a. Plant Tours

The inspectors periodically conducted plant tours to verify that monitoring equipment was recording as required, equipment was properly tagged, operations personnel were aware of plant conditions, and plant housekeeping efforts were adequate. The inspectors also determined that appropriate radiation controls were properly established, critical clean areas were being controlled in accordance with procedures, excess equipment or material was stored properly, and combustible materials and debris were disposed of expeditiously. During tours, the inspectors looked for the existence of unusual fluid leaks, piping vibrations, pipe hanger and seismic restraint settings, various valve and breaker positions, equipment caution and danger tags, component positions, adequacy of fire fighting equipment, and instrument calibration dates. Some tours were conducted on backshifts. The frequency of plant tours and control room visits by site management was noted to be adequate.

The inspectors routinely conducted partial walkdowns of ESF, ECCS and support systems. Valve, breaker, and switch lineups and equipment conditions were randomly verified both locally and in the control room. The following accessible-area ESF system walkdowns were made to verify that system lineups were in accordance with licensee requirements for operability and equipment material conditions were satisfactory:

Units 1 and 2 EDGs

Unit 2 Fan room

Unit 2 HPSI

Unit 1 RAB Tunnel

During these walkdowns, the inspectors found that:

- Several electrical connection boxes in the Northwest corner of the Unit 2 CCW building were observed to be rusting. This condition was pointed out to the licensee.

- Cable tray 1838 in the Unit 1 RAB was found sagging somewhat. Licensee review showed that supports were located within the distances allowed by design, however the licensee is evaluating potential enhancements.

- The suction expansion joint for primary water pump 2B, previously replaced per NPWO 2911/62 in November, 1989, had the required two restraining rods across the joint, but insulating shoulder washers were not used to ensure electrical insulation across the expansion joint as did the other three expansion joints associated with the primary water pumps. This deficiency was identified to the licensee.

- Oil was observed collecting on the 1A HPSI pump motor foundation under the coupling end bearing housing. When informed, the licensee investigated promptly and found that the amount of oil was not enough to indicate a bearing lubrication problem. The licensee inspected the motor internals during the semi-annual PM on August 5, and found no internal leakage. Consequently, the HPSI pump motor scheduled for swap-out and refurbishment during the upcoming refueling outage has been changed from 1B to 1A.

b. Plant Operations Review

The inspectors periodically reviewed shift logs, operations records, (including data sheets), instrument traces, and records of equipment malfunctions. This review included control room logs, auxiliary logs, operating orders, standing orders, jumper logs, and equipment tagout records. The inspectors routinely observed operator alertness and demeanor during plant tours. They observed and evaluated control room staffing, control room access, and operator performance during routine operations. The inspectors conducted random off-hours inspections to assure that operations and security performance remained at acceptable levels. Shift turnovers were observed to verify that they were conducted in accordance with approved licensee procedures. Control room annunciator status was verified. Except as noted below, no deficiencies were observed.

During this inspection period, the inspectors reviewed the following tagouts (clearances):

Unit 2	2-8-1	TCB 2 - Preventive Maintenance,
Unit 2	2-8-2	2A CCW Pump - Change Lubricating Oil and Inspect the Coupling,
Unit 2	2-8-15	TCB 3 - Preventive Maintenance, and
Unit 2	2-8-13	"B" Train ICW Pump Bearing Lubrication Water.

These clearances were properly executed.

During this inspection period the meteorological tower was taken out of service to replace the tower and its associated instruments per PCM 109-987 and work control document NPWO 3264. The work was well coordinated between Construction Services and Operations. In accordance with the applicable TS 3.3.3.4 - if out more than seven days submit a special report within the next 10 days - the licensing/technical staff was preparing such a letter report.

The inspector observed Unit 1 being returned to full power on July 19 following the cleaning of two condenser water boxes. The plant was held at approximately 96 percent power to perform a primary system manual calorimetric calculation per OP 1-3200020, Rev 18, and to

perform a nuclear and delta-T power calibration per OP 1-1200051, Rev 13. These procedures were performed smoothly and professionally.

As Unit 1 condenser back pressure increased to 4.0 inches of mercury, Unit 1 was down powered to clean two additional condenser water boxes the week of July 22. Returning from the cleaning on July 26, dissolved oxygen increased to 14 parts per million but returned to nominal levels prior to further licensee action being required.

On July 30, operators observed a decreasing trend in the 1B1 RCP lower oil reservoir level indication. Oil loss from this reservoir could potentially affect continued RCP, therefore plant, operation and could be a fire hazard. The licensee promptly investigated and determined that the oil level was satisfactory and there was not a leak. The remote level sensing lines were flushed from outside the biological shield wall, returning level indication to normal.

c. Technical Specification Compliance

Licensee compliance with selected TS LCOs was verified. This included the review of selected surveillance test results. These verifications were accomplished by direct observation of monitoring instrumentation, valve positions, and switch positions, and by review of completed logs and records. Instrumentation and recorder traces were observed for abnormalities. The licensee's compliance with LCO action statements was reviewed on selected occurrences as they happened. The inspectors verified that related plant procedures in use were adequate, complete, and included the most recent revisions.

During this reporting period, several components were subject to TS LCO action statement requirements due to corrective maintenance, planned PMs, and conservative control over safety-related pumps that were having new ASME Code Section XI performance base lines established.

The inspectors concluded that the licensee carefully complied with TS action statement requirements.

d. Physical Protection

The inspectors verified by observation during routine activities that security program plans were being implemented as evidenced by: proper display of picture badges; searching of packages and personnel at the plant entrance; and vital area portals being locked and alarmed.

Overall operational control and action during this period were good.

3. Surveillance Observations (61726)

Various plant operations were verified to comply with selected TS requirements. Typical of these were confirmation of TS compliance for

reactor coolant chemistry, RWT conditions, containment pressure, control room ventilation and AC and DC electrical sources. The inspectors verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, LCOs were met, removal and restoration of the affected components were accomplished properly, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel. The following surveillance tests were observed:

- OP 2-0110050, Rev 10, Control Element Assembly Periodic Exercise,
- OP 1-2200050, Rev 56, Emergency Diesel Generator Periodic Test and General Operating Instructions,
- AP 2-0010125A, Rev 23, Surveillance Data Sheets, Data Sheet 17, Quarterly Pump Code Run - 2C ICW,
- OP 2-0420050, Rev 25, Containment Spray and Iodine Removal System - Periodic Test, and
- OP 1-1300054, Rev 15, Reactor Auxiliary Building Fluid Systems Periodic Leak Test [CS train A].

The above surveillances were well controlled and the results were satisfactory, except as noted below.

Paragraph 4.b below discusses problems occurring during the 2A AFW pump surveillance performance.

The 2C ICW pump quarterly surveillance run, using new magnetically-mounted vibration probes, placed the pump in the ASME Code Section XI alert range for pump vibration levels. The vibration magnitude would require specific licensee action - in this case doubled surveillance frequency.

Appropriate licensee investigative and code-required actions were taken. The 2C ICW pump surveillance was run at least three times investigating the nature of the vibration and the impact of using new vibration measuring equipment. During the transition to the new measuring equipment, the licensee has been attempting to understand the differences between the equipment outputs to facilitate correlation to actual pump performance. Discrete measurement of the vibration spectrum was made by the reliability group simultaneous to taking vibration levels with operations department's old hand-held equipment and the replacement magnetically-mounted equipment. The old and new instrument readings were slightly different, but both placed the pump in the alert range. The licensee upgrading to the new more accurate equipment was commendable.

On July 30, The licensee initiated the Reactor Auxiliary Building Fluid Systems Periodic Leak Test on Containment Spray (CS) train A in accordance with OP 1-1300054, Rev 15. This procedure essentially isolated the CS

system at the containment penetration; operated the CS pump via recirculation to the Refueling Water Tank to pressurize the system, which would then be inspected for leaks; then restored the system to the normal configuration. The procedure referenced TS 6.8.4.a, Primary Coolant Sources Outside Containment, as the basic requirement being met by the test. TS LCOs that would be entered were not referenced.

The inspector identified several minor procedure weaknesses and brought them to the attention of the SRO. These included: lack of a confirmation signature space for the Related System Status section; and, lack of confirmation of two valve positions prior to starting the CS pump (pump suction valve open and discharge valve bypass shut). Other CS system test procedures, maintained by the operators vice the technical staff, and performed quarterly, had these precautionary confirmations. The SRO ensured that these items were confirmed and annotated the procedure to capture them for a future revision. Pre-test preparation by the operators was thorough, including review of the plant out of service log for interfering conditions and the conduct of a meeting in the control room to ensure all participants clearly understood the test. The 1A CS system was placed out of service and TS 72-hour action statement 3.6.2.1.b was entered prior to the test. The plant operators who repositioned valves were observed to follow proper procedures to ensure that the correct valves were repositioned. The plant operators also found the discharge valve bypass discussed above not tightly shut, and shut it.

The procedure required drain valve I-V07163, located downstream on the containment side of test boundary valve I-MV-07-3A, to be opened and all water drained from the spray header prior to starting the CS pump. This was to ensure that boundary valve leakage was detected promptly to preclude spraying the containment. This valve was partially opened and had drained water for about three hours when the inspector questioned the compliance with TS 3.6.1.1, Containment Vessel Integrity, which required that containment vessel integrity be restored within one hour or the unit be in Hot Standby within the next six hours. When notified of the concern, the licensee promptly shut the valve then restored the CS system to the normal configuration while reconsidering the test. The action statement for TS 3.6.1.1 was not exceeded.

Subsequent inspector review found that this system had a Class E penetration as described in the UFSAR Section 6.2.4.2, Containment Isolation System Design. Class E was established for lines designed to be open following a LOCA to mitigate the effects of the accident. They were to have either:

- a check valve in series with a remote manually actuated valve, or
- a remote manually actuated valve or check valve and a closed seismic Class I system outside containment.

The CS system was a closed Seismic Class I system outside containment with a check valve inside containment.

While reviewing this area, the inspector also observed that the licensee did not have listings or drawings clearly identifying all the valves and fittings involved in containment isolation. Many major valves were listed in TS Table 3.5.2, Containment Isolation Valves, and the Unit 2 UFSAR had sketches showing the local leak rate test alignments. The Unit 2 UFSAR sketches included in-line valves other than isolation valves with no differentiation between the two categories.

The technical specification requires that containment integrity be maintained in Modes 1, 2, 3,and 4. The associated action statement requires, "Without CONTAINMENT VESSEL INTEGRITY, restore CONTAINMENT VESSEL INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

CONTAINMENT VESSEL INTEGRITY is defined in TS definition 1.7 to exist when:

- All containment vessel penetrations required to be closed during accident conditions are either:

  1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

  2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed position except as provided in Table 3.6-2 of [Unit 1 Specification 3.6.3.1] [Unit 2 Specification 3.6.3].

- All containment vessel equipment hatches are closed and sealed,

- Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3,

- The containment leakage rates are within the limits of Specification 3.6.1.2, and

- The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

It is our understanding that the open drain valve, I-V07163, did not meet the "closed seismic Class I system" criteria for a Class E penetration as described in the UFSAR and the TS 1.7 definition of containment vessel integrity. Additionally, the failure to clearly identify valves and fittings involved in containment isolation is considered an area for improvement.

After some deliberation, the licensee, on August 12, stated that they had not actually been in TS LCO Action Statement 3.6.1.1, Containment Vessel Integrity. The reasoning was that the only valves involved in containment integrity were those listed in the TS or perhaps the UFSAR. It was believed that the NRC had previously considered the situation when the

facility license was issued and, by not specifically identifying vent and drain valves or other fittings in the TS, had determined them to be too small to be considered. Additionally, during the ILRT, the containment spray check valve and flow control valve have been tested as a pair using ILRT pressure. [These valves have not been separately tested. The drain valve in question was between them]

Following consultation with NRC management, the licensee has been requested to re-evaluate their position. This item is URI 335,389/91-16-01, Implementation of Containment Vessel Integrity, pending further licensee and NRC review.

Overall, the surveillance program continued to be a positive part of plant operations except in the case of the CS surveillance discussed above.

4. Maintenance Observation (62703)

Station maintenance activities involving selected safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with requirements. The following items were considered during this review: LCOs were met; activities were accomplished using approved procedures; functional tests and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; and radiological controls were implemented as required. Work requests were reviewed to determine the status of outstanding jobs and to assure that priority was assigned to safety-related equipment. Portions of the following maintenance activities were observed:

a. NPWO 4150/66 was the work control document for the troubleshooting of the B1 soakback or turbo charger lube oil pump for the 2B1 engine of the 2B EDG. During a pre-surveillance operational check of this DC motor driven pump, the pump would not operate. Operations and the electrical department determined several likely components that may have caused the problem and investigated those. They found a blown 30 ampere power fuse, FU 11N of drawing 2998-B-327, sheet 1134. One fuse clip had relaxed to the point that arcing had occurred between the fuse and the fuse clip, degrading the fuse. Following fuse clip repair, the soakback pump was satisfactorily operationally checked. Other similar fuse clips were inspected with no deficiencies found.

b. The 2A AFW pump had been meeting its surveillance requirements until a recent combined ASME Code Section XI and TS test run on July 16. Historical temperature data over the past four tests had shown no trendable indications of bearing degradation. The bearing temperatures for each previous test had met the three percent allowable variance between three consecutive readings per procedure OP 2-070050, Auxiliary Feedwater Periodic Test. During the July 16 test, the fixed outboard (thrust) bearing temperature never stabilized and the pump was shut down, thus aborting the test.

After aborting the test, the licensee considered the available information:

- A PM had been performed changing the bearing oil on the 2A pump just prior to the test per NPWO 0023/62 and that sample of the oil had shown no significant color change which would have been indicative of overheating. The oil filling procedure and fittings were reviewed.

- The 2C pump was manufactured by the same vendor as the other Unit 2 AFW pumps with the same bearing configuration, but twice the flow rating. The 2C pump is steam driven at 3600 rpm as opposed to the 2A and 2B pumps which are motor driven at 1800 rpm.

- During plant startup testing, the 2C pump experienced shortened bearing life due to thrust loading of the outboard bearings. PCM 053-284 installed a spring dampening kit on the 2C pump outboard bearings to reduce the impact of the loading, especially during initial energization of the pump. The PCM was recommended by the vendor as a maintenance item for the smaller capacity 2A and 2B motor driven pumps but was not implemented because they had not exhibited the shortened bearing life problem during startup testing.

The 2A pump was operated for approximately four hours while bearing temperatures were monitored. Bearing temperatures increased beyond previous high levels to 170 degrees F and the pump was shut down before further harm occurred.

NPWO 0166/62 was generated to limitedly inspect the bearing housing and check certain clearances. The inspection revealed clearance setting bushing wear and duplex bearing wear. The bushing, located between the bearing pair inner race and a pump shaft shoulder, positioned the shaft in relation to the fixed bearing and thus positioned the pump internals. The bushing wear allowed pump internal clearances to change at the pump's thrust balance hub. The additional clearances, by not allowing the balance hub to establish an equalized, neutral, internal hydraulic loading in the pump, placed additional load on the fixed outboard pump bearing. During the inspection, the pump body was not disassembled but the bearing housing and pump to motor coupling were torn down. The duplex bearing pair was sectioned for inspection and showed some wear with varnish buildup, mainly race false brinelling, but no lack of lubrication or advanced heat-related degradation. The inspection did not reveal that the bearings had failed or would not have supported further pump operation.

The licensee restored the 2A AFW pump to working order and satisfactorily tested the pump prior to exceeding TS action statement time limitations. Pump internal clearances were re-established by

manufacturing and installing a new bushing properly locating the pump balance hub, and correcting the outboard bearing thrust loading. New bearings were installed. The above mentioned surveillance test was completed with excellent results. The post failure root cause analysis was professionally accomplished.

c. Unit 2A CCW pump PMs were performed per NPWOs 62/0209 and 62/0210 and procedure GMP 2-M-0018P, Rev 11, Mechanical Maintenance Safety-Related Preventive Maintenance Program (Pumps), Data Sheets 04801 (Pump Lubrication) and 04802 (Coupling Lubrication). Unit 1A CCW pump PMs were performed per NPWOs 61/0250 and 61/0251 and procedure GMP 1-M-0018P, Rev 9, Mechanical Maintenance Safety-Related Preventive Maintenance Program, Data Sheets PM 44 (CCW Pump Lubrication/ Inspection) and PM 45 (CCW Pump Coupling Lubrication). Work practices observed included coupling disassembly, cleaning, and inspection; bearing oil changeout; work area cleanliness; and procedure adherence. The procedures were generally well written and the mechanics knowledgeable. One procedural weakness was found by the inspector. The procedures required the two coupling halves and spoolpiece be match marked for reassembly but did not require the coupling halves and shaft to be match marked. Changing the relative position of the coupling halves and shafts could change the vibration characteristics. Subsequent to the inspection, the licensee submitted procedure change requests to include the match marking of the coupling halves and shafts.

1A CCW pump vibration apparently increased following the PM. Licensee investigation showed that the operations staff had changed vibration instruments and were using a higher resolution magnetically-mounted instrument vice the older hand-held instrument. Simultaneous data collection using both instruments showed that the vibration had not increased and also established a compatible new ASME Code Section XI performance baseline using the new instrument.

d. NPWO 6613/62 controlled repair of the Unit 2 ECCS effluent gas recorder, RR-26-70. This four-variable recording channel employed two separate strip chart drives. The original trouble reported was slipping chart paper on one of the chart drives. Technicians discovered that one of the pen drives on the other chart drive also was inoperative and expanded the NPWO scope to completely repair the instrument. Work operations were carefully performed.

e. NPWO 6060/63 was the work control document for repair of PI-09-9C, pressure indicator for the 1A feedwater header. The Sigma gage was removed from the RTGB 102 with the appropriate sensitive system paperwork, operational overview, and appropriate safety-related channels bypassed. The channels affected were "C" RPS low SG level and "C" AFAS, subchannels 1 and 2.

The PI-09-9C repair included replacing several Sigma board components in the shop. It was reinstalled and initially functioned. During a

calibration attempt per I&C procedure 1-1400065, tab 65, the indicator failed for no apparent reason. Based on cost effectiveness, the indicator was removed and replaced rather than being again repaired. All observed work and work control in the control room was satisfactory.

f. The NRC maintenance team inspection (MTI) of late 1989 (IR 335,389/89-24), addressed NPWO backlog control (IR page 28). The backlog level was rated as generally good, but the backlog program was stated to be unproceduralized. Overall plant condition was stated to be good with some deficiencies resulting from lack of attention to detail (IR paragraph 2).

Since the time of the MTI, the licensee had made obvious plant material improvement efforts as noted in the last SALP report (issued in December 1990). At the end of last SALP period, existing computer NPWO tracking schemes had improved with useable status reports but with no additional backlog proceduralization.

The number of NPWOs between the MTI and present (June) compare as follows:

November 1989	June 1991
NPWOs total = 661	NPWOs total = 1113
NPWOs over 90 days old = 334	NPWOs over 90 days old = 380

While there is a greater number of NPWOs being written, those greater than 90 days have remained relatively constant.

During April 1991, a new computer system, Passport, was introduced for both material and work control. The system had been slated for introduction in February of this year, but debugging problems delayed that implementation date. Minor post-system-phase-in problems have persisted to this inspection period. The new system has not been as user friendly as the previous system and would not generate reports similar to the previous system reports.

The inspectors sampled existing NPWOs on both units for the period of January 1988 to February 1990 for proposes of understanding the backlog status. There were 198 NPWOs from that period listed in the computer system as not being closed out. 62 NPWOs of the 198 were safety-related. The backlog status for the 62 follows:

NPWO not completed due to:	MAINTENANCE DEPARTMENT		
	ELECTRICAL	I&C	MECHANICAL
awaiting outage period	1	4	4
awaiting parts	5	4	6

NPWO not completed due to:	MAINTENANCE DEPARTMENT ELECTRICAL	I&C	MECHANICAL
long term project	2	1	-
awaiting engineering action	-	7	10
completed but not coded out of computer	3	5	7
ready for work	1	-	2

All the safety-related NPWOs were accounted for in the computer system and the NPWOs did not cause inoperability of the associated safety-related system.

The above listed information was not readily available in the Passport system. The information had to be manually extracted from the system on a per-NPWO basis by referring to as many as four screens. The engineering action status was not clearly defined in the computer fields. The progress within the various engineering sections was maintained on a separate engineering computer which had no similar file/component description identifiers and did not interface with the Passport system.

The licensee routinely reviewed certain features of their NPWO backlog. As a NPWO was generated, it was assigned a work priority. This priority was reviewed on a daily basis for new and higher priority NPWOs listed on the licensee's manually-kept 2-to-7-day priority list. Once the item was older than seven days, unless it was critical path item (LCO, important to safety, or a risk to plant operation), some degree of specific detail was lost to plant management view under the Passport system. The older group of NPWOs (62) listed above were not generally reviewed by the plant personnel on a routine basis, which resulted in some loss in exact understanding of status. Once an NPWO existed longer than 7 days, the licensee could not easily prioritize and track the NPWOs by relative importance to safety. The significant safety-related NPWOs were manually tracked through completion. The NRC review did prompt positive licensee status changes and closeout actions.

The licensee is now focusing more attention on the functionality of the Passport system. The licensee's computer specialist staff at corporate have generated but not implemented approximately 24 new report or sorting fields. The inspector did review some of the preliminary new sorts and they did have positive management tool potential. The plant has been working with the specialist staff in refining system capabilities. It was generally thought that the system would be more compatible by the upcoming Unit 1 October outage.

5. Installation and Testing of Modifications (Unit 1)(37828)

Installation of a modified system was reviewed to verify that the changes were performed in accordance with technically adequate and approved procedures, that subsequent testing and test results met acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. This review included selected observations of the modifications and testing in progress.

During this inspection period, the maintenance department converted the 1A ICW pump to a self-lubricating model. The modification design, contained in PCM 281-189, had been successfully tried in the 2A ICW pump for several years and was now being applied to all ICW pumps. The modification involved pump removal and shipping to a vendor; quality verification of the vendor's shop work at the vendor's shop; return shipping and installation; and modification of bearing lubricating water lines still serving the 1B and 1C pumps. The pump shaft sections were also changed from a non-standard 3 15/16 inch diameter to a standard 4 inch diameter which is interchangeable with Unit 2 shaft sections. The completion on all three ICW pumps will eliminate the need for the existing troublesome safety-related lubricating water system. The existing aluminum bronze system, which used extremely expensive ASME Code stamped parts, has required constant maintenance. Eliminating the system with this modification will provide a long-term reliability benefit.

Field workmanship observed was per NPWO 61/0140 and included staging of pump housing and shaft components; rigging and assembly of shaft sections; torquing of shaft key bolts; and rigging housing sections.

One of the installation steps involved attaching an 8 ft. shaft section to the assembly below it, then removing the lifting eyebolt and installing a dunce cap to guide the outer housing, to be next lowered around the shaft. The past practice was to lean a ladder against the unsupported shaft to reach this work area. This applied a large lever arm force to the coupling. The licensee was requested to evaluate other, less stressful, ladder support techniques. For this occurrence, the ladder was supported part way up and exerted minimal load on the coupling.

During the work performance observation, the mechanical department crew used two chemical compounds to clean the ICW pump shafts prior to their installation into the pump. The compounds were commercial lubricants/cutting fluids - specifically WD-40 and JB-80. The compounds were removed as cleaning progressed. A documented telephone conversation with the pump vendor indicated that the compounds should not harm the rubber pump shaft bearings.

During the performance of field work, the mechanics found discharge check valve V 21162 severely deteriorated at the flapper hinge pin bushing area. The check valve was replaced per NPWO 61/0300 with a Unit 2 valve having some material differences. PCM 238-191M reviewed the use of the Unit 2 valve, finding the internals compatible with installation and service

requirements, and approved the alternate design as equivalent. The replacement was satisfactorily retested per QI 11 PR/PSL-2, Rev 23, Appendix B, Test Sheet for Leakage and Full Stroke Operation.

Post installation testing, in addition to extensive vibration signature monitoring and upper bearing cooling/packing leakoff monitoring, included ASME Code Section XI baseline monitoring for vibration, motor currents, and discharge pressure at flow rates of both 10,000 gpm and 14,000 gpm. The pump operated as designed.

The licensee demonstrated high caliber control and workmanship during the ICW modification.

6. Fire Protection Review (64704)

During the course of their normal tours, the inspectors routinely examined facets of the Fire Protection Program. Where specific activity such as large scale test of fire protection systems, exercises, extensive repair or drills, the inspectors would participate. Normally the inspectors would review transient fire loads, flammable materials storage, housekeeping, control hazardous chemicals, ignition source/ fire risk reduction efforts, fire protection training, fire protection system surveillance program, fire barriers, fire brigade qualifications, and QA reviews of the program.

Annual fire hose hydrostatic test was observed to be well managed and competently performed by the site fire protection supervisor with the assistance of a state certified contractor.

7. Review of Periodic and Special Reports (90713)

a. The inspector reviewed special report serial L-91-203, dated July 26, 1991, per TS 4.8.1.1.3 and 6.9.2. This report addressed a June 26, 1991, failure of the 2B EDG. This event was previously discussed in IR 389/91-14, paragraph 2a. The special report was accurate and timely.

b. The inspector reviewed special report serial L-91-215, dated August 6, 1991, per TS 4.8.1.1.3 and 6.9.2. This report addressed a July 5, 1991, failure of the 1A EDG. This event was previously discussed in IR 389/91-14, paragraph 2a. The special report was accurate and timely. One of the corrective actions discussed involved modifying the other EDG's governor face plates during future maintenance that would require removal of the face plate. This was being tracked by NPWOs and by the technical staff engineer. The inspector had no further questions.

c. The inspector reviewed Unit 1 UFSAR amendment 10, dated July, 1991. The amendment corrected typographical errors, increased clarity of discussions in several areas, and added discussions of new areas including:

SG corrosion control using boric acid to reduce tube denting,

The diverse scram system and diverse turbine trip system,

Expanded reference in tables to RG 1.97 instruments.

A number of revised UFSAR diagrams were verified to reference the correct plant drawing revision. They referenced the latest plant drawing revision prior to January 1, 1991, the UFSAR cutoff date. Drawing revisions not referenced in the UFSAR were issued after January 1, 1991. Drawings reviewed included:

8770-G-078, Sheet 110, Rev 14, Flow Diagram, Reactor Coolant System;

8770-G-078, Sheet 111, Rev 5, Flow Diagram, Reactor Coolant Pump;

8770-G-078, Sheet 120, Rev 5, Flow Diagram, Chemical and Volume Control System, Sheet 1;

8770-G-078, Sheet 121, Rev 12, Flow Diagram, Chemical and Volume Control System, Sheet 2;

8770-G-078, Sheet 130, Rev 8, Flow Diagram, Safety Injection System, Sheet 1;

8770-G-078, Sheet 131, Rev 6, Flow Diagram, Safety Injection System, Sheet 2;

8770-G-082, Sheet 1, Rev 32, Flow Diagram, Circulating and Intake Water System;

8770-G-082, Sheet 2, Rev 6, Flow Diagram, Intake Cooling Water Lube Water System;

8770-G-083, Rev 25, Flow Diagram, Component Cooling System;

8770-G-085, Sheet 2, Rev 20, Flow Diagram, Instrument Air System;

8770-G-085, Sheet 3, Rev 9, Flow Diagram, Instrument Air System;

8770-G-085, Sheet 4, Rev 25, Flow Diagram, Instrument Air System;

8770-G-088, Rev 22, Flow Diagram, Containment Spray and Refueling Water Systems; and

8770-G-092, Rev 15, Flow Diagram, Miscellaneous Sampling Systems.

The inspector found no FSAR update discrepancies and found that diagrams referenced the correct plant drawing.

8. Onsite Followup of Written Nonroutine Event Reports (Units 1 and 2) (92700)

(Closed) LER 335/91-05, Reactor Trip on Low Steam Generator Water Level.

This LER was reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. The LER was reviewed in accordance with the current NRC Enforcement Policy. This event was previously discussed in IR 335/91-14, paragraph 2.a. The LER properly addressed the event and several fundamental causes. This LER is closed.

9. Followup of Inspection Identified Items (Units 1 and 2) (92701)

The inspectors reviewed engineering efforts to improve the correction of drawings and the total equipment data base.

During April, 1991, the inspectors found unlabeled drain valves in the Unit 1 spent fuel building. The operations staff, unable to obtain permanent numbers for the valves at the time, started a temporary number system and applied appropriate tags to the valves. The inspectors determined that the reason permanent numbers could not be obtained was the engineering department failing to aggressively address discrepancies found on drawings and in the total equipment data base. While engineering had a viable computerized work tracking system, these items were often not entered into it, therefore were not being managed.

Recent review of this management area showed a complete turnaround. First, the numerous items missing from the work control program had been entered on April 29, and were now being managed. Second, a schedule for completion of these items had been determined and was being met. Third, review of three plant changes showed recent aggressive action in resolving these issues. These were: PCM 192-291m, dated July 10, 1991; PCM 189-291m, dated July 15, 1991; and PCM 195-191m, dated July 17, 1991.

The inspector found the upgrade program to be viable and improving.

10. Exit Interview (30703)

The inspection scope and findings were summarized on August 20, 1991, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. Proprietary material is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Status	Description and Reference
335,389/91-16-01	open	URI - Containment Integrity, paragraph 3.

11. Abbreviations, Acronyms, and Initialisms

AFAS	Auxiliary Feedwater Actuation System
AFW	Auxiliary Feedwater (system)
ASME Code	American Society of Mechanical Engineers Boiler and Pressure Vessel Code
ATTN	Attention
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CS	Containment Spray (system)
DPR	Demonstration Power Reactor (A type of operating license)
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESF	Engineered Safety Feature
FPL	The Florida Power & Light Company
FSAR	Final Safety Analysis Report
GMP	General Maintenance Procedure
gpm	Gallon(s) Per Minute (flow rate)
HPSI	High Pressure Safety Injection (system)
ICW	Intake Cooling Water
IFI	[NRC] Inspector Followup Item
ILRT	Integrated Leak Rate Test(ing)
IR	[NRC] Inspection Report
LCO	TS Limiting Condition for Operation
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
MTI	Maintenance Team Inspection
MV	Motorized Valve
NCV	NonCited Violation (of NRC requirements)
NPF	Nuclear Production Facility (a type of operating license)
NPWO	Nuclear Plant Work Order
NRC	Nuclear Regulatory Commission
NRR	NRC Office of Nuclear Reactor Regulation
OP	Operating Procedure
PCM	Plant Change/Modification
PCM	PerCent Milli (0.00001)
PI	Pressure Indicator
PM	Preventive Maintenance
PSL	Plant St. Lucie
QA	Quality Assurance
QI	Quality Instruction
RAB	Reactor Auxiliary Building
RCP	Reactor Coolant Pump
Rev	Revision
RG	[NRC] Regulatory Guide
rpm	Revolutions per Minute
RPS	Reactor Protection System
RTGB	Reactor Turbine Generator Board
RWT	Refueling Water Tank
SALP	Systematic Assessment of Licensee Performance

SG	Steam Generator
SRO	Senior Reactor [licensed] Operator
St.	Saint
TCB	Trip Circuit Breaker
TQR	Topical Quality Requirement
TS	Technical Specification(s)
UFSAR	Updated Final Safety Analysis Report
URI	[NRC] Unresolved Item
VIO	Violation (of NRC requirements)