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10 CFR 2.390

Ms. Carolyn Evans, Enforcement Officer  
Enforcement and Investigations Coord. Staff  
U.S. Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, S.W., Suite 23T85  
Atlanta, Georgia 30303

*Handcarried to  
S Nunn 7/13/05  
CMS*

Re: St. Lucie Units 1 and 2  
Docket Nos. 50-335, 50-389  
Allegation No. RII-2005-A-0056

By letter dated June 2, 2005 (J. T. Munday to J. A. Stall), the NRC requested Florida Power and Light Company (FPL) to review the concerns listed in Allegation No. RII-2005-A-0056.

Our Nuclear Safety SPEAKOUT program staff has completed the investigation of this allegation.

As indicated in your letter, the enclosure is exempt from disclosure pursuant to 10 CFR 2.390 (a) (6) and (7).

Very truly yours,

*RJ Acosta*

R. J. Acosta  
Director  
Nuclear Assurance

RJA/rgl  
Enclosure: As

*Kenneth Bower*  
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**ENCLOSURE**

**ALLEGATION:**

Florida Power and Light Co. (FPL) received the following allegation from NRC Region II:

**SPENT FUEL POOL ISSUES**

The NRC received information regarding the Spent Fuel Pool (SFP) at the St. Lucie Nuclear Plant (PSL). The following information was provided:

*From the information received, the NRC believes these concerns are applicable to Unit 2, and the most recent refueling outage. However, this information may be referring to either the Unit 1 or Unit 2 Spent Fuel Pools. The following information was provided:*

- 1. The Spent Fuel Pool level appeared below that of the heat exchanger nozzle and there may be a Technical Specification violation.*
- 2. There is a lack of emergency egress out of the spent fuel pool (SFP) building during fuel movement given that the vital door is known to be frequently inoperable and required plant security assistance to unlock.*
- 3. There was an audible alarm going-off in spent fuel pool building (possibly due to low water level in the pool).*
- 4. There is a lack of emergency lighting in the Spent Fuel Pool Building.*

**NOTE:** SPEAKOUT received concerns of a very similar nature from a contract employee on April 21, 2005. The concerned individual's issues were attributed to the SL2-15 outage.

**REFERENCE:**

Allegation No. RII-2005-A-0056

**RESPONSE:**

The investigation conducted by Nuclear Safety SPEAKOUT consisted of interviews with cognizant personnel and review of pertinent documentation.

**Issue No. 1:**        **The Spent Fuel Pool level appeared below that of the heat exchanger nozzle and there may be a Technical Specification violation.**

The SFP level is maintained between plus or minus one-half inch from 60' level. There is no heat exchanger near the 60' level of the SFP. One of two Heat Exchangers located in the SFP is located near the 43' elevation, and another is located near the 19' 5" elevation, near the bottom of the SFP.

There is no "nozzle" on the SFP heat exchangers, however there is a discharge (pipe) line extending from the heat exchanger into the east wall of the SFP, well below the SFP water level. The discharge line has an "anti-siphon" hole from which water is always flowing (into the pool). Cognizant personnel stated that they believe this is the "nozzle" the concerned individual may be referring to. Each stated that a low water level alarm is set to activate well above the "anti-siphon" hole.

Technical Specification (T. S.) 3/4 9.11 - SPENT FUEL STORAGE, states in part:

LIMITING CONDITION FOR OPERATION

2.9.11 The Spent Fuel Pool shall be maintained with:

- a. *The fuel storage pool water level greater than or equal to 23 ft. over the top of the irradiated fuel assemblies seated in the storage racks . . .*"

SURVEILLANCE REQUIREMENTS

4.9.10 *The water level in the spent fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days when irradiated fuel assemblies are in the fuel storage pool. . .*"

SPEAKOUT reviewed OPS procedure OP-1-0010125, Paragraph 13. Surveillances are performed daily on the midnight shift. The following is stated in part:

*"Perform a walkdown of the fuel pool operating deck (62' elevation) and ensure Spent Fuel Pool water level is within operating limits . . ."*

A computer print out of the daily surveillance results of the Unit 2 SFP water level, from 01/06/05 to 02/15/05 (SL2-15 outage), conducted by the shift Senior Nuclear Plant Operator (SNPO) was reviewed by SPEAKOUT. The water level for each day was measured (at appr. 2000 hrs) and documented to be between 59' 5" and 60' 5" (the level needed to meet or exceed the T.S. minimum noted above).

According to cognizant OPS personnel, should the level of the SFP not remain within the set high/low range at any time, a high or low level alarm will sound in the Control Room and an investigation would ensue. If an alarm were to sound indicating that the water level had risen above or dropped below the set alarm point, this fact would be documented in the Operations Department Chronological Log book. A review of the log book by SPEAKOUT revealed no low or high water level notations during the SL2-15 outage.

According to cognizant interviewees core off - loading occurred during SL2-15, between 0100 hours on 01/16/05 and 0500 hours on 01/18/05. Core re - loading occurred between 0900 hours on 01/24/05 and 0900 hours on 01/26/05.

SPEAKOUT reviewed Refueling Sequencing Guidelines, 2-GOP-365, Paragraph 4.6 PREREQUISITES, states:

*Prior to initial fuel movement, for a core off load, the fuel pool level shall be greater than 60' 0" and less than 60' 5". Once off load is commenced, fuel pool level shall be maintained within*

*normal operating band.*

SPEAKOUT reviewed surveillance reports required to be performed shiftly during Mode 6 (during refueling) in accordance with 2-GOP-365, noted above. These surveillance reports revealed that the SFP water level measurements did not drop below or exceed the required limits.

**Issue No. 2: There is a lack of emergency egress out of the spent fuel pool (SFP) building during fuel movement given that the vital door is known to be frequently inoperable and required plant security assistance to unlock.**

Interviews with Operations and Security personnel revealed there are three doors that may be accessed via card reader into the Unit-2 SFP. Only two of these doors are normally utilized by plant personnel other than Security to ingress/egress the SFP.

A fourth door is utilized to move fuel in/out of the SFP.

In the event of an emergency, any of the four doors leading out of the SFP can be opened from the inside. Each door is equipped with either a handle/arm or an emergency door open switch that allows the door to open from the inside. Utilizing a card reader in such a situation is not required to push these doors open from the inside.

When fuel is being loaded or unloaded, three doors from which to exit the SFP are available if needed.

Interviews by SPEAKOUT of cognizant personnel indicated there were a number of occurrences during the SL2-15 outage where SFP doors, including the two normally used by personnel, had minor problems; and this would not be unusual, particularly during an outage.

Minor door problems, such as latch repair/replacement are not required to be worked with a Plant Work Order (PWO), because these repairs are considered minor maintenance.

SPEAKOUT reviewed the PWO database for work orders that were written to document repairs during the SL2-15 outage to the Unit 2 SFP doors normally used for personnel ingress/egress. Four such work orders were found for one door only, two relating to card reader problems, and one each for a faulty lock and latch mechanism. The documentation indicated the doors were successfully repaired.

SPEAKOUT reviewed the Security Shift Specialists (SSS) Daily Log Book, for entries from 01/06/05 to 02/15/05, to determine if either of the two doors normally used for personnel ingress/egress required compensatory measures (posting) by a security officer during the SL2-15 outage, or whether there were any door issues associated with these two doors documented in the Log.

The SPEAKOUT review revealed no Log entries were made that documented the posting of

either door during the SL2-15 outage.

A review of the Condition Report (CR) database revealed 28 CRs that documented Unit 2 related door problems during the SL2-15 outage. The majority of the CRs (25) were written to document that a vital door was left unsecured (open) by an employee opening, and not properly closing a door. Only one of these CRs involved an SFP door incident (unsecured). The other three CRs involved miscellaneous problems with doors other than SFP doors.

**Issue No. 3: There was an audible alarm going-off in the spent fuel pool building (possibly due to low water level in the pool).**

SPEAKOUT determined through interviews of cognizant personnel that there are three types of alarms that may be heard by personnel in the SFP building. One (of three) alarms that may be heard by personnel in the SFP are the radiation monitors which are also audible in the Control Room. When the radiation level in the SFP rises to the point to which the monitors are set, the alarm is sounded.

NOTE: High and low water level alarms (if activated) can only be heard in the Control Room.

SPEAKOUT reviewed the Unit 2 Operations Department Chronological Logs, maintained daily by the department, for the period 01/04/05 to 02/15/05. The review revealed that at 10:12 AM on 01/19/05, one of the SFP Radiation Monitors signaled an unexpected alarm. According to the Chronological log entry, HP investigated and "confirmed that no personnel were in the fuel pool area". The alarm continued and Health Physics (HP) personnel reported that there were no elevated dose rates in the SFP but that the monitor was registering 10x higher than the other radiation monitor. I&C personnel confirmed that the alarm was invalid and that the alarm had failed and repairs were made to the monitor. No other alarms associated with the SFP were documented in the Chronological Logs during the outage period.

A portable radiation monitor was also positioned at the bridge in the SFP area during SL2-15. (This is a common outage practice). The alarm on this portable monitor is also audible in the SFP (only) if activated.

Portable "friskers" are utilized in the SFP and these friskers also produce an audible sound when personnel contamination is detected, or when the battery is low.

**Issue No. 4: There is a lack of emergency lighting in the Spent Fuel Pool Building.**

SPEAKOUT discussed the emergency lighting issue with numerous cognizant personnel.

Each of these interviewees had occasion to enter the SFP, and or to supervise employees who worked in the SFP during the SL2-15 outage. None stated that they were personally aware of, or had any reports of a lack of adequate (normal or emergency) lighting in the SFP during SL2-15. Several interviewees noted that during Safeguards testing, the level of lighting in the SFP is low, but an individual can see well enough to enter and exit the SFP safely.

An interview with the Electrical Maintenance Department Supervisor revealed that during any outage, there are occasions when the normal SFP lighting is lost, due to temporary power interruptions, or when problems with electrical busses arise, etc. He stated that there is only a momentary lapse/pause while the emergency power lighting is activated. He noted that when regular electrical power is restored, the emergency lights go off. He added that during refueling operations and other work that is required in the SFP, additional lighting is lowered into the pool to enhance worker's ability to better see the task they are performing. He noted that when employees require additional or temporary lighting to assist their work, this is a relatively easy requirement to fill.

According to the Electrical Maintenance Department Supervisor, Safeguards testing in the SFP can result in the level of light being considerably lowered, but adequate to move about or to enter/exit the SFP. He did not recall any requests during SL2-15, relative to compensating for inadequate lighting, or any requests related to poor lighting issues in the SFP. He considers the normal and emergency lighting in the SFP to be adequate.

A review of the Condition Report database for the period 01/04/05 to 02/16/05 revealed no CRs were written to address poor lighting issues in the SFP.

#### **CORRECTIVE ACTION RECOMMENDATIONS:**

There are no corrective action recommendations made by SPEAKOUT as a result of this investigation:

The complete investigation report (NSS-PSL-05-015) is available for review by the NRC in the St. Lucie Plant Nuclear Safety SPEAKOUT office.