

CATEGORY 1

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 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
 AUTH. NAME AUTHORITY AFFILIATION
 PLUNKETT, T.F. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC ltr re violations noted in insp repts
 50-250/97-10 & 50-251/97-10 on 970810 to 970920. Corrective
 actions: components were tagged & placed in RCA.

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Florida Power & Light Company, P.O. Box 14000, Juno Beach, FL 33408-0420

NOV 18 1997

L-97-283
10 CFR 2.201

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

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250/251
Reply to Notice of Violation
NRC Inspection Report 97-10

Florida Power & Light Company has reviewed the subject inspection report and, pursuant to 10 CFR 2.201, the required response is attached.

If there are any questions, please contact us.

Very truly yours,

T. F. Plunkett
President
Nuclear Division

CLM

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

9711240294 971118
PDR ADOCK 05000250
Q PDR

246075

an FPL Group company





REPLY TO NOTICE OF VIOLATION

RE: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
NRC Inspection Report 97-10

FINDING A

"During an NRC inspection conducted on August 10, to September 20, 1997, violations of NRC requirements were identified. In accordance with the General Statement of Policy and Procedures for NRC Enforcement Actions, NUREG-1600, the violations are listed below:

- A. Title 10 CFR Part 20.1501(a), requires, in part, that each licensee make or cause to be made, surveys that may be necessary for the licensee to comply with the regulations and are reasonable under the circumstances to evaluate the extent of concentrations or quantities of radioactive material; and the potential radiological hazards that could be present.

Title 10 CFR Part 20.1801 requires the licensee to secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas.

Title 10 CFR Part 20.1802 requires the licensee to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

Licensee Technical Specification 6.8.1 requires written procedures be established, implemented, and maintained covering procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, Sections 5.1 and 5.3 of ANSI N18.7-1972.

Licensee procedure 0-HPS-021.3, "Release of Material from the Radiation Controlled Area," Revision dated August 20, 1997, required in step 6.7, "Tools or equipment painted purple may NOT be released from the RCA until all the purple paint is removed, and the tools or equipment verified free of radioactive contamination."

Contrary to the above, these requirements were not met in that:

1. On August 11, 1997, the licensee failed to survey and control contaminated motor operated valve actuators released to an unrestricted area. The components had



fixed byproduct contamination up to approximately 130,000 dpm/100 cm².

2. On September 18, 1997, the licensee failed to follow procedures for the control of byproduct materials for a contaminated temperature gauge released from the licensee's Radiation Control Area and Protected Area, even though the purple paint had not been removed and it was not verified to be free of radioactive contamination. The temperature gauge had fixed byproduct contamination up to approximately 7,500 dpm/100 cm².

This is a repeat Severity Level IV violation (Supplement IV)."

RESPONSE TO FINDING A

First Example: Main Steam Bypass Valve Motor Actuators

1. Florida Power & Light Company (FPL) concurs with the finding. The following information is provided:
 - a) The two MOV actuators were removed from the Protected Area and taken to the Nuclear Training Center in April of 1997. These actuators originated from the turbine and were never in the Radiation Controlled Area (RCA).
 - b) The contamination on the MOV actuators was up to 13,000 disintegrations per minute (dpm) per probe area as measured with an HP-380B scintillation probe. The extent of contamination however was very localized and did not extend beyond one probe area (less than 100 square centimeters). The total activity therefore was approximately 13,000 dpm on one actuator and 5,000 dpm on the second actuator.

2. Reason for the violation:

The Main Steam Bypass Valve actuators from valves 3-1401 and 3-1402 were discovered on 8/11/97 by a Radiation Protection Technician (RPT) during a quarterly survey of the Nuclear Training Building. The actuators read 1000 and 2600 counts per minute above background respectively with an HP-380B scintillation probe which is approximately 5,000 and 13,000 dpm respectively, based on the 20% efficiency of the probes. The radiological risk to the public and the workers from this violation was very low because of the small amount of radioactive material involved, and because the fixed contamination is not expected to spread. No other contaminated secondary side components have been found outside the Protected Area during our ongoing site survey.



A condition report was initiated and an Event Response Team (ERT) led by the new Radiation Protection and Chemistry Supervisor was formed immediately after discovery of the contaminated actuators. The ERT was composed of cross discipline personnel from Radiation Protection, Operations, Maintenance, Engineering, Work Controls, and Training.

The ERT met numerous times over a period of three weeks to evaluate the causes of this event and related events. The ERT determined that in the late 1970's, contaminated steam from packing leaks impinged on turbine components leaving residual low level contamination. Cesium-137, with a half life of 30 years, was the only radionuclide detected on the actuators. The team determined that Unit 4 (and to a lesser extent Unit 3) operated with primary to secondary steam generator leakage combined with some fuel defects in the late seventies and early eighties which provided sufficient low level contamination to be detectable today. Records show that certain turbine areas (which are outside the RCA) were posted and controlled, but were incorrectly deposted sometime in the 1980's with this residual external contamination on some installed components. The actuators in question were removed during the March 1997 Unit 3 refueling outage, and taken to the Training Department in April without Radiation Protection surveys.

The causes of this event are not similar to any recent events in that these components were never released from the RCA. In each of the previous cases, the causes and corrective actions focused appropriately on the controls and processes for release of material from the RCA. A review of these previous events did not disclose any information that would have led FPL to assess the possibility of external contamination of secondary plant components. The Main Steam Bypass Valve actuators were contaminated over ten years ago.

The actions identified by the ERT which led to the event were: 1) the decision to operate the units in the late seventies and early eighties with primary to secondary leakage combined with fuel defects, 2) the inadequate surveys by HP in the early eighties deposing the turbine areas, and 3) removal of the two contaminated actuators from the Protected Area.

During the root cause analysis, the team identified 25 additional contaminated components still installed on Unit 4 secondary systems, and 7 contaminated components still installed on Unit 3. Surveys of the Training Building and other storage areas revealed no additional contaminated components removed from secondary systems.

The root causes identified by the ERT for the inappropriate actions associated with MOV actuators are:



- a) Radiation Protection staff believed that the activity in the secondary systems was confined to the inside of the piping, and did not question contamination of external components.
 - b) In the early eighties, the Radiation Protection program at Turkey Point focused more on the worker occupational health issues than on the control of very low levels of contamination.
 - c) The plant staff did not understand the mechanism of steam contamination of external surfaces of components in the secondary system. Specifically, leaks such as packing glands deposited long lived Cs-137 on components on the exterior of the system when operating with primary to secondary steam generator leakage. This phenomenon manifested itself in the late seventies and early eighties when the plant was experiencing both primary to secondary steam generator leakage and fuel defects.
3. Corrective steps which have been taken and the results achieved:
- a) HP immediately controlled the contaminated components. The components were tagged and placed in the RCA.
 - b) The turbine areas where the components had been taken from were immediately posted as Radioactive Material Areas.
 - c) A thorough survey of the training building shop and storage areas was performed. No additional radioactive material was found.
 - d) An Event Response Team (ERT) was formed as directed by plant management. The ERT performed Event and Causal Factor Charting and a Barrier Analysis.
 - e) Regarding the decision to operate in the late seventies with the fuel leaks and the primary to secondary leakage: The current culture and procedures at Turkey Point would not permit such a decision today. Procedures 3-ONOP-067, Radioactive Effluent Release, and 3-ONOP-071.1, Secondary Chemistry Deviation from Limits, were reviewed and found to be more conservative than Turkey Point's Technical Specifications. In addition, a rate of change criteria is built into the procedures to limit allowable steam generator leakage. No further corrective action was needed.
 - f) Procedure 0-HPS-21.3, Release of Material from the Radiation Controlled Area, was revised to clarify and strengthen material release surveys and documentation.



- g) Information Bulletin 97-37, Control of Licensed Material, was distributed to all departments on August 21, 1997.
 - h) Training Brief #692 entitled "Control of Licensed Material" was issued to Radiation Protection, Operations, and contract HPs on August 22, 1997. Training Brief #692 communicated the importance of attention to detail during surveys of clean areas, which may have material that has come from secondary systems.
 - i) A program was developed and implemented to control radioactive material on the secondary side of the plant. This program is designed to identify and control radioactive material during the U-4 outage and during maintenance activities. Success with this program was achieved when other installed radioactive components were identified. As a result, the turbine building has been posted for radioactive materials.
 - j) An additional Radiation Protection contract technician crew was brought in for the outage to augment the controls for work on the secondary systems to assure components would be surveyed, and properly identified and controlled if contaminated. As a result no additional instances of improperly released contaminated material occurred, although several contaminated components were found installed, as described above.
 - k) A program was developed to evaluate/survey all outgoing material and equipment from the plant Protected Area and to survey selected incoming material and equipment during the U-4 outage. This program was designed to identify and control radioactive material. As a result, numerous contaminated items were prevented from leaving the RCA, and contamination was discovered on several incoming items. Three of these discoveries resulted in notifications in accordance with 10CFR50.72.
 - l) An evaluation was performed on personnel exit controls. These controls have been strengthened by requiring personnel to momentarily pause on the foot detector grating (using foot print outlines) improving monitor sensitivity. A memo from the Operations Manager was distributed to all plant personnel regarding changes in plant Protected Area requirements. During the Unit 4 refueling outage, a security officer was stationed at the Nuclear Entrance Building exit and ensured that the personnel training was effective.
4. Corrective actions which will be taken to prevent further violations:

The deficiencies discussed in the inspection report and corrective actions described herein



have been covered in HP department meetings, and will be communicated to all incoming contract HP technicians. The following is a list of corrective actions that will be taken to prevent further violations:

- a) Training Brief #692 described above will be added to initial and continuing training for all Radiation Protection personnel.
- b) Health Physics will provide a list of components externally contaminated to the Work Controls department in order to establish a computerized mechanism to alert the staff of the need for controls for future work.
- c) The program for controlling radioactive material/components on secondary systems (outage and non-outage) will be incorporated into procedures.
- d) A thorough one-time surveillance of areas inside and outside of the Protected Area (laydown areas, storage areas, buildings, and other areas) is being performed to identify contaminated material which may have come from secondary systems or contaminated material released from the RCA. The surveillance was started in August 1997. Because of the size of the site (approximately 3300 acres), 1) areas most likely to contain improperly released contaminated material are being surveyed first, and 2) the surveys of the low probability areas will be completed by March 1, 1998.
- e) Health Physics will evaluate the quarterly clean area surveys for potential improvements in the instrumentation and procedure. This will include evaluating the use of the Micro-R meter or other suitable instruments for detecting low level sources at a distance.
- f) The effectiveness of these actions will be monitored during the upcoming year to verify that radioactive material controls on secondary systems are appropriate and secondary controls are followed by all plant personnel.

5. The date when full compliance was or will be achieved:

Although no contaminated items are presently known to be outside the Turkey Point Protected Area, FPL will not consider Turkey Point to be in full compliance until the completion of the one-time site surveillance described in 4d above, by March 1, 1998.



Second Example: Temperature Gauge

1. Response to violation:

FPL concurs with the finding. The following additional information is provided:

- a) Our records indicate that the temperature gauge was last issued in 1994 with a 6 month calibration. The gauge was contaminated only with Cobalt 60. The absence of Cobalt 58 indicates that the gauge was not contaminated recently. The gauge could have been released from the RCA several years ago although we could not determine the actual date of release. A survey of the temperature gauge using hand held friskers indicated 100 to 250 cpm above background, which is equivalent to approximately 1000 to 2500 dpm.
- b) Due to the small amount of purple coloring, and the presence of other colors of paint (yellow and white) on the temperature gauge's magnets, it is not believed that the temperature gauge was ever part of the purple tool program at Turkey Point. The purple coloring may have adhered to the magnets incidental to the gauge's use in the plant.
- c) The temperature gauge found on September 18, 1997 was brought back into the RCA and checked for contamination because the Radiation Protection Technician had recently received training on FPL Information Bulletin 97-37 (August 21, 1997) and Training Brief #692 (August 22, 1997). This training had been done by FPL to heighten awareness of all site personnel concerning the events surrounding the Steam Bypass Valve actuators found in the Training Building on August 11, 1997. A condition report was immediately initiated and the event was thoroughly investigated.

2. Reason for violation:

Items in Turkey Point's "purple tool" program are normally spray painted. Measuring and test equipment is normally not included, particularly when the paint could interfere with the proper function of the equipment as would be the case with the bi-metal coil on the back of a contact temperature gauge. The Radiation Protection technician who picked up the gauge in the parking lot near the Training Building inspected it closely and noticed the small amount of purple coloring on the magnets. The "purple paint" found on the magnets of the temperature gauge was not obvious unless closely examined and no evidence of overspray existed. It is not clear that the purple substance on the gauge magnets was paint; it is similar in color to dye penetrant used for non-destructive testing (liquid penetrant testing).



The temperature gauge was placed in the Small Articles Monitor (SAM-9) and contamination was detected. With a standard HP-210 pancake GM probe the temperature gauge contamination measured approximately 1000 to 2500 dpm, and consisted of fixed activity much smaller than the probe area (two half-inch diameter magnets). Isotopic analysis identified only Co-60 (with no Co-58) which was not indicative of the isotopic mixture present during outages. The isotopic activity measurement was 2900 dpm which is in good agreement with the pancake GM measurement. Lack of detection of Co-58 is indicative of contamination that is approximately two years old or more.

Further investigation revealed that temperature gauge # 92-033 has been identified as belonging to FPL's Nondestructive Examination Metallurgical Facility in Riviera Beach. Temperature gauge #92-033 was last calibrated on August 21, 1992, and calibrations of these temperature gauges are only good for 6 months. Instruments are not signed out of the lab at Riviera Beach which makes it impossible to find out to whom it was last checked out. Currently, these same type gauges are routinely used by the Turkey Point Inservice Inspection (ISI) Group, to document temperature conditions for piping and components to assure they are within the procedural requirements for their tests.

Due to the lack of significant rust and the functioning of the gauge, FPL concluded that the gauge had not been outside in the elements for long. Interviews with all personnel involved were unsuccessful in determining how or when the temperature gauge came to be in the parking lot.

No evidence could be found showing when or if this temperature gauge had been released from Turkey Point's RCA. To be conservative however, we are assuming that this temperature gauge was released from the RCA via one of three scenarios:

- a) The gauge was contaminated a number of years ago (most likely in the 1992/1993 timeframe, based on the Juno Beach records) and was taken out of the RCA at that time in a person's pocket via the PCM-1B and not detected.
- b) The gauge was contaminated a number of years ago (as above) and was taken out of the RCA at that time, either in a person's pocket or in a toolbox via hand frisking with a standard pancake GM probe. The gauge was not detected during a survey of the person or the tools due to the low level of the contamination (well below 5000 dpm) combined with the motion of the standard HP-210 probe. Studies have shown that items less than 5000 dpm may go undetected using the type of GM detector that FPL used prior to July 1997 (NRC Circular 81-07).
- c) The gauge was contaminated a number of years ago (as above) and was taken out of the RCA more recently in a person's pocket while exiting through a PCM-1B. The PCM-1B will not reliably detect activity well below 5000 dpm particularly if



the article is in someone's pocket, as the monitors use beta detectors. FPL believes that this is the least likely scenario due to the age of the expired calibration.

FPL does not believe that the causes of this event are similar to the previous events in that this component was not a purple painted tool and was most likely released from the RCA prior to the previous events. A review of these previous events did not disclose any information that would have enabled FPL to prevent this event. Corrective actions from the previous events and the Main Steam Bypass Valve actuators event were responsible for the heightened awareness of our Radiation Protection Technician who found and returned the gauge.

3. Corrective steps which have been taken and the results achieved:

- a) The contaminated gauge was immediately controlled by Radiation Protection.
- b) The parking lot and adjacent areas were searched and surveyed revealing no additional contaminated material.
- c) The ISI Group equipment storage area was surveyed with no additional contaminated material found.
- d) A thorough survey of the training building shop and storage areas was performed. No additional contaminated material was found. (This action had been initiated from the MOV actuator event.)
- e) Procedure 0-HPS-21.3, Release of Material from the Radiation Controlled Area, was revised to clarify and strengthen radioactive material release surveys and documentation. (This action had been initiated from the MOV actuator event.)
- f) Information Bulletin 97-37, Control of Licensed Material, was distributed to all departments on August 21, 1997. (This action had been initiated from the MOV actuator event.)
- g) Training Brief #692 entitled "Control of Licensed Material" was issued to Radiation Protection, Operations, and contract HPs on August 22, 1997. (This action had been initiated from the MOV actuator event.)
- h) State-of-the-art Small Articles Monitors and large area scintillation probes were put into use in May and June 1997, which improve our capability for detection of contaminated material over the traditional pancake GM detector friskers.

- i) In addition to the plant management investigations, a corporate security investigation was conducted involving the contaminated gauge. The corporate security investigation failed to develop any substantive evidence to indicate that anyone intentionally placed the contaminated gauge outside the Protected Area.

4. Corrective actions which will be taken to prevent further violations:

- a) A thorough one-time surveillance of areas inside and outside of the Protected Area is being done to identify contaminated material which may have come from secondary systems or contaminated material released from the RCA. The surveillance was started in August 1997. (This action was initiated from the MOV actuator event.)
- b) The main FPL control point area is being remodeled and staffed to increase Radiation Protection oversight of survey and release of personnel and material from the RCA. The plans include a central island for the Radiation Protection personnel to directly monitor personnel entering and leaving the RCA. A free release survey area is incorporated to provide an improved work area for surveys of material to be released.
- c) Control of material release will be strengthened at the Turbine Building RCA control point. This will be accomplished by additional training of the personnel authorized to use this control point, and installation of video and two-way communication capability with the Radiation Protection personnel at the main control point.
- d) An enclosed building is being procured, and will be constructed at the alternate material release area ("Gate 50") exiting the RCA to improve the quality of this work area for Radiation Protection release surveys of large equipment and components. The building will provide improved lighting, weather protection, and air conditioning in order to better support the free release survey function.

5. The date when full compliance was or will be achieved:

Although no contaminated items are presently known to be outside the Turkey Point Protected Area, FPL will not consider Turkey Point to be in full compliance until the completion of the one-time site surveillance described in 4a above, by March 1, 1998.



FINDING B

- B. "Turkey Point Facility Operating License Condition L, Amendment 193 (Unit 3) and Amendment 187 (Unit 4), dated February 11, 1997, state in part that the licensee shall fully implement and maintain in effect all provisions of the Commission-approved Physical Security Plan. The licensee's Physical Security Plan, Revision 10, dated May 19, 1997, states, 'Unescorted access to the Protected Area is granted to persons who have a work related need for entry.'

Contrary to the above, the licensee continued to grant unescorted access to a terminated employee from June 18, 1997, to August 5, 1997, who no longer had a work related need for entry. The individual was authorized access to the Protected Area only; however, no entries were made during the 47 days following termination.

This is a Severity Level IV violation (Supplement III)."

RESPONSE TO FINDING B

1. Florida Power & Light Company (FPL) concurs with the finding.
2. Reason for the violation:

The investigation revealed that the contractor employee had favorably resigned from his company on June 18, 1997. His last access to the site was on June 12, 1997. The Chemistry Supervisor signed off on his 31 Day Review for June, on June 17, 1997, prior to the individual's resignation. Therefore, the contractor employee was still employed when the Chemistry Supervisor signed off on the 31 Day Review. During the month of July, the 31 Day Review process and the Contractor Fitness for Duty Verification packages failed to identify the contractor employee's resignation. From the Contractor Fitness for Duty Verification package signed and dated July 30, 1997, it is evident that a contractor representative confirmed that the individual still required access.

The Chemistry Supervisor had signed off on the 31 Day Review for July, on July 31, 1997. At this point the Chemistry Supervisor did not recall seeing the contractor employee recently, and asked another Chemistry department individual to verify employment of the contractors. The individual from the Chemistry department that was asked to verify employment was informed that the contractor employee in question had resigned on June 18, 1997. The Chemistry department individual turned in the paperwork to terminate the access on August 5, 1997. At that time, the contractor employee's access was terminated.



In order to determine reportability, the individual's access was reviewed to see if he had gained entry into the plant following his resignation. A review of the security printout showed that he had not gained entry following his resignation. The contractor also followed up with a confirmation letter. Following the event, a Security Information Report was completed.

3. Corrective steps which have been taken and the results achieved:

- a) Immediately upon notification on August 5, 1997, the individual's access was terminated.
- b) FPL reviewed all employee access authorizations at the site; for individuals whose badges are not required and have not been used in the last 30 days, their access levels were suspended. Access is not restored until all requirements for access are satisfied and access is authorized by the supervisor.
- c) FPL has developed a Security Department Badge Usage surveillance on all badges. The surveillance reviews all badge usage to identify badges not used in the last 30 days.
- d) The 31 Day Review printout has been revised to display the individual's date of last use. This data aids supervisors in their determination of the need for continued access.
- e) The Chemistry Supervisor and the other Chemistry department individual were counseled on their duties and responsibilities with respect to access authorization.
- f) The contractor was contacted by FPL and has accepted responsibility for inappropriately including his terminated employee on the Contractor Fitness For Duty Verification package signed July 30, 1997. The contractor has provided written corrective actions to FPL, including a second review of their future verifications.

4. Corrective actions which will be taken to prevent further violations:

- a) An FPL policy has been developed to ensure all FPL personnel are aware of the badging requirements. Site personnel are being trained on the new Policy.



- b) The quarterly Contractor Fitness for Duty Verification Package has been revised to clarify badging requirements, and will be sent to the contractors during the next quarter.
- c) Standard Terms and Conditions for contracts have been revised to include more stringent requirements for contractors on badge deactivation, and will be sent to all contractors. These revisions include requirements to immediately notify Turkey Point Security if an employee is terminated, is arrested, or has not been under the observation of a supervisor for the last 30 days. The revisions also include monetary penalties for failure to comply with the requirements.

5. The date when full compliance was or will be achieved:

Full compliance was achieved on August 5, 1997, when the contractor employee's access was terminated.