UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

January 26, 2012

EA-12-001

Florida Power and Light Company
ATTN: Mr. Mano Nazar, Senior Vice President
Nuclear and Chief Nuclear Officer
P.O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000250/2011005 AND 05000251/20120005; PRELIMINARY GREATER THAN GREEN FINDINGS AND POTENTIAL ESCALATED ENFORCEMENT VIOLATION

Dear Mr. Nazar:

On December 31, 2011, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Units 3 and 4. The enclosed inspection report documents the inspection results, which were discussed on January 18, 2012, with Mr. Coffey and other members of your staff.

The inspection examined activities conducted under your license as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The enclosed inspection report discusses two Apparent Violations (AVs) associated with the Technical Support Center (TSC). The first AV has preliminarily been determined to be a White finding with low to moderate safety significance that may require additional NRC inspections. As described in the enclosed report, the TSC ventilation system was removed from service from October 10 to October 28, 2011 for planned maintenance. An equipment clearance order removed electrical power from TSC ventilation system dampers and removed the ability for the ventilation system to go into recirculation mode, rendering the TSC not functional. The finding did not present an immediate safety concern because no radiological emergencies occurred. Nonetheless, these two occurrences indicate a lack of adequate control over maintenance of equipment that would have significantly impacted Turkey Point's ability to respond to a radiological emergency had one occurred. Furthermore, the licensee emergency preparedness staff was unaware of either of these two occurrences and, and accordingly, no compensatory measure was put in place. This issue was assessed based on the best available information, using the applicable Significance Determination Process (SDP). The final resolution of this finding will be conveyed in separate correspondence.

The basis for the NRC's preliminary significance determination for this issue is that the removal of power from the recirculation dampers rendered the TSC not functional for two periods of time, one of which lasted approximately seven months. TSC activation procedures would not have identified and corrected the condition during an event. Had an actual radiological event occurred during either of these two periods, the licensee's ability to respond to the emergency would have been adversely affected. Turkey Point committed to the design criteria described in NUREG-0696 and NUREG-0737, which state that the control room and the TSC must be included among those areas where access is considered vital after an accident. The design criteria further state that TSC personnel shall be protected from radiological hazards, including direct radiation and airborne radioactivity from inplant sources under accident conditions, to the same degree as control room personnel. The design criteria also state that the TSC ventilation system shall function in a manner comparable to the control room ventilation system, and that a system that includes high-efficiency particulate air and charcoal filters is needed, as a minimum. The staff's assessment concluded that the TSC did not meet these design criteria while the recirculation function of the ventilation system was degraded.

Your staff provided a calculation to support your assessment that the TSC was still functional during the time periods in question. However, certain assumptions and the justification for those assumptions used in your calculation were not apparent to the NRC staff and an NRC calculation did not achieve similar results. As described in MC0609, Appendix B, significance determination of an EP item of non-compliance is not based on the conditions that existed during the period of non-compliance, but rather, the potential impact of the non-compliant program element on a licensee's capability to effectively implement the emergency plan should an accident occur. To develop a more complete understanding of the issue, the NRC is requesting FPL to provide any additional information which would assist the staff in rendering a final significance determination.

The AV associated with this finding is also being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy can be found on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. Additional details for this AV are provided in the enclosed inspection report.

In accordance with NRC Inspection Manual Chapter 0609, Significance Determination Process, we intend to complete our risk evaluations using the best available information and issue our final significance determination within 90 days of the date of this letter. The Significance Determination Process encourages an open dialogue between the NRC staff and the licensee; however, the dialogue should not impact the timeliness of the staff's final determination. Before the NRC makes its final decision on this matter, we are providing you an opportunity to either: (1) present to the NRC your perspectives on the facts and assumptions used by the NRC to arrive at these findings and their significance at a Regulatory Conference, or (2) submit your position on these findings to the NRC in writing. If you request a Regulatory Conference, it should be held within 30 days of the receipt of this letter and we encourage you to submit supporting documentation at least one week prior to the conference to make the conference more efficient and effective. If a Regulatory Conference is held, it will be open for public observation. The NRC will also issue a press release to announce the conference. If you decide to submit only a written response, such a submittal should be sent to the NRC within 30 days of the receipt of this letter. If you decline to either request a Regulatory Conference or to submit a written response, you relinquish your right to appeal the final significance

determination; in that, by not doing either you fail to meet the appeal requirements stated in the Prerequisites and Limitations sections of Attachment 2 of IMC 0609.

The second AV is related to the failure to report a major loss of emergency assessment, offsite response, and offsite communication capability to the NRC, when the TSC was not functional from December 4, 2010, to July 13, 2011. This AV is being evaluated using the NRC's traditional enforcement process because it impacted NRC's ability to perform its regulatory function and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. Additional detail for this AV is provided in the enclosed inspection report.

Before the NRC makes its enforcement decision for this AV, we are providing you an opportunity to either: (1) respond to the apparent violation within 30 days of the date of this letter, or (2) request a Predecisional Enforcement Conference (PEC). If a PEC is held, it will be open to public observation and the NRC will issue a press release to announce the time and date of the conference.

If you choose to provide a written response, it should be clearly marked as "Response to Apparent Violation, in Inspection Report Nos. 05000250/2011005 and 05000251/20110005; EA-12-001," and should include: (1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate response is not received within the time specified or an extension of time has not been granted, NRC will proceed with its enforcement decision.

If you choose to request a PEC, the conference will afford you the opportunity to provide your perspective on the apparent violation and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the conference may include the following: information to determine whether a violation occurred; information to determine the significance of a violation; information related to the identification of a violation; and information related to any corrective actions taken or planned to be taken. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violation.

In recognition of the relationship of these two AVs, the commonality of any likely corrective actions to preclude recurrence, and to minimize administrative and resource burden, we encourage you to consider requesting a joint Regulatory Conference/PEC to discuss the above matters. Or as an alternative, you may include your response to these issues and corrective actions in a single written response.

Please contact Daniel Rich at (404) 997-4721 within 10 days of the date of this letter to notify the NRC of your intended response. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision. The final resolution of this matter will be conveyed in separate correspondence.

Since the NRC has not made a final determination as to the significance of these issues, no Notice of Violation is being issued at this time. Please be advised that the number and characterization of the apparent violations described in the enclosure may change as a result of further NRC review.

Additionally, a self-revealing finding of very low safety significance (Green) was identified during this inspection. This finding was determined to involve a violation of NRC requirements. The NRC is treating this violation as a non-cited violation consistent with Section 2.3.2 of the Enforcement Policy. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Turkey Point Nuclear Plant. If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at Turkey Point Nuclear Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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Sincerely,

/RA/

Richard P. Croteau, Director
Division of Reactor Projects

Docket Nos.: 50-250, 50-251
License Nos.: DPR-31, DPR-41

Enclosure: Inspection Report 05000250/2011005, 05000251/2011005
w/Attachment: Supplemental Information

cc w/encl: See next page

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X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER: ML120260599 X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

OFFICE	RII:DRp	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRS
SIGNATURE	GJW	MGD1	JSS1	MCB	By email	By email	By email
NAME	GWilson	MDonithan	JStewart	MBarillas	THoeg	ELea	GKuzo
DATE	01/25/2012	01/25/2012	01/20/2012	01/20/2012	01/25/2012	01/25/2012	01/25/2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

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Letter to Mano Nazar from Richard P. Croteau dated January 26, 2012

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000250/2011005 AND 05000251/20120005; PRELIMINARY GREATER THAN GREEN FINDINGS AND POTENTIAL ESCALATED ENFORCEMENT VIOLATION

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-250, 50-251
License Nos.:	DPR-31, DPR-41
Report No:	05000250/2011005, 05000251/2011005
Licensee:	Florida Power & Light Company (FPL)
Facility:	Turkey Point Nuclear Plant, Units 3 & 4
Location:	9760 S. W. 344th Street Homestead, FL 33035
Dates:	October 1 to December 31, 2011
Inspectors:	J. Stewart, Senior Resident Inspector M. Barillas, Resident Inspector G. Wilson, Senior Project Engineer T. Hoeg, Senior Resident Inspector St. Lucie E. Lea, Senior Operations Engineer (Section 1R11) G. Kuzo, Senior Health Physicist (Section 2RS4) D. Lanyi, Operations Engineer (Section 1R11) D. Bacon, Operations Engineer (Section 1R11) R. Hamilton, Senior Health Physicist (Section 4OA3)
Approved by:	D. Rich, Branch, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2011-005, 05000251/2011-005; 10/1/2011 – 12/31/2011; Turkey Point Nuclear Power Plant, Units 3 and 4; Problem Identification and Resolution,

The report covered a three month period of inspection by resident inspectors and region based inspectors. One Green NCV and two Apparent Violations (AVs) were identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP); the cross-cutting aspect was determined using IMC 305, Operating Reactor Assessment Program; findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

A. NRC-Identified & Self-Revealing Findings

Cornerstone: Mitigating Systems

(Green) A self-revealing non-cited violation of 10 CFR 50 Criterion XVI was identified when the licensee failed to repair a degraded butterfly valve in the Unit 3 intake cooling water system. On August 11, 2011, failure of this valve led to a loss of intake cooling water (ICW) flow to the component cooling water heat exchangers. The licensee documented the failure in their corrective action program as AR 01680272 and initiated a cause investigation. An NRC special inspection of this occurrence was documented in NRC Inspection Report 05000250/2011013.

The licensee's failure to take prompt corrective actions for a degraded valve, though it had been identified in 2007 as vibrating excessively, was a performance deficiency. This performance deficiency was considered more than minor because it could be reasonably viewed as a precursor to a significant event, the loss of all intake cooling water. A Senior Reactor Analyst in a Phase 3 risk assessment, determined the increase in risk to either unit was of very low risk significance i.e., Green. Unit 3 risk was assessed because the event occurred on that unit; however Unit 4 risk was also assessed because the same vulnerability existed on the ICW valves on that unit (e.g., similar design, maintenance history, etc.). The main contributors to the low risk results were: 1) the recovery probability of the ICW system, given the extended time available to operators before a RCP seal LOCA could occur; and 2) the multiple redundant sources available to cool the core should the CCW system fail. The dominant core damage scenarios were valid demands for a reactor trip followed by the failure to recover ICW proceeding to a RCP seal LOCA and core damage. The inspectors determined that the cause of this finding was related to the Problem Identification and Resolution cross cutting area when the licensee failed to take appropriate corrective action to address safety issues (valve fluttering) in a timely manner, commensurate with the safety significance. [P.1(d)] (4OA2)

(TBD) The licensee identified an Apparent Violation (AV) of 10 CFR Part 50.54(q), for failure to follow and maintain in effect emergency plans which require that adequate emergency facilities and equipment to support the emergency response are provided and maintained. Specifically, during the periods from December 4, 2010 to July 13, 2011, and

from October 10 to October 28, 2011, the licensee failed to maintain a fully functional Technical Support Center when portions of its ventilation system were removed from service without compensatory measures. As a result, had the facility been required, personnel assigned to respond in the TSC would not have been protected from radiological hazards that would occur in some accidents. The licensee documented this issue in their corrective action program as AR 1701357.

The finding was more than minor because it affected the Emergency Preparedness Cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The Emergency Preparedness cornerstone was affected in that during the time the Technical Support Center was not functional, it did not meet 10 CFR 50.47(b)(8) Planning Standards program elements in that personnel assigned to the TSC during an emergency may not have been protected from radiological hazards. This finding was evaluated in accordance with Manual Chapter 0609, Appendix B, Emergency Preparedness Significance Determination Process, Section 4.8 and Emergency Preparedness Significance Determination Process, Sheet 1, Failure to Comply, and determined to be a finding of low to moderate safety significance (White) because there was a loss of the planning standard. The two events, December 2010 to July 2011, and October 2011, were assessed as a single finding with a common performance deficiency.

The cause of the finding is related to the Problem Identification and Resolution cross-cutting area, in that the licensee did not thoroughly evaluate problems with the TSC ventilation system as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability, conditions adverse to quality. (P.1.c). (4OA3)

Cornerstone: Not applicable

(TBD): The inspectors identified an Apparent Violation of 10 CFR 50.72(b)(3)(xiii) when a major loss of emergency assessment capability was not reported to the NRC within 8 hours. The TSC ventilation system was identified as being in a degraded condition from December 4, 2010 until July 13, 2011, affecting the habitability of the TSC for emergency responders, and the occurrence was not reported. The issue was identified to the licensee by the inspectors after review of NRC Event Notification 47387. The finding was more than minor because it impacted the NRC's regulatory process, which relies on certain events being properly reported to the NRC. Because this finding impacted the regulatory process, it was evaluated using traditional enforcement and is being considered for escalated enforcement action in accordance with NRC's Enforcement Policy. No cross-cutting aspect associated with this issue was identified. (4OA3)

B. Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status:

Unit 3 started the period at full power but conducted a normal reactor shutdown and cooldown to Mode 5 on October 4, 2011, to replace the 3C reactor coolant pump seal. Following the work, the reactor was restarted on October 15 and during power escalation a ground developed on the 3A 4KV bus. On October 16, as the ground was being investigated, power was being reduced to less than 50 percent when the 3A main feedwater pump tripped causing a plant runback to less than 50 percent. The feedwater pump motor was replaced and the unit was restored to full power on October 25.

Unit 4 began the period at full power but the licensee elected to conduct a reactor shutdown on November 24 when reactor coolant leakage to the pressurizer relief tank increased, but remained within technical specification limits. A reactor coolant system cooldown and depressurization to Mode 5 was completed to replace a leaking pressurizer safety valve. The repair was completed and the reactor was restarted on December 2 and the plant returned to full power operation on December 3, 2011.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted three partial alignment verifications of the safety-related systems listed below. These inspections included reviews using operating procedures and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems. The inspectors routinely verified that alignment issues were documented in the corrective action program.

- Unit 4 auxiliary feedwater valve lineup checked using licensee procedure, 4-OSP-075.5, Auxiliary Feedwater System Flow Path Verification; and system drawing, 5614-M-3075, sheets 1 and 2, Auxiliary Feedwater System
- Unit 3 temporary instrument air valve lineup checked using licensee procedure TP-11-018, Temporary Instrument Air Operations During Phase 3-3; and drawing 5613-M-3013, Instrument Air System
- Unit 3 high head safety injection valve lineup checked using licensee procedure 3-NOP-062, Safety Injection Valve Lineup Outside Containment; and drawing 5613-M-3062, Safety Injection System

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

.1 Fire Area Walkdowns

The inspectors toured the following six plant areas to evaluate conditions related to control of transient combustibles and ignition sources and the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage and propagation. The inspectors reviewed these activities using provisions in the licensee's procedure 0-ADM-016, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists were routinely reviewed. In addition, the inspectors reviewed the condition report database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- 3A and 4A vital battery rooms
- Unit 4 B emergency diesel room
- Auxiliary feedwater pump area
- Auxiliary building breezeway
- Cable spreading room
- Main control room

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On October 25, 2011, the inspectors assessed licensed operator performance in the plant specific simulator. The simulated events were done using a training evaluation scenario which involved a simulated failure of the letdown pressure control valve, a loss of the 3A 4KV bus, a failure of the reactor to automatically shutdown (ATWS), and a steam line break inside containment. Operators responded to the events using alarm response procedure 3-ARP-097.CR.A (5/5), Chemical Volume Control System Letdown Line Hi Pressure; and plant emergency procedures 3-EOP-E-2, Faulted Steam Generator Isolation; 3-EOP-FR-S.1, Response to Nuclear Power Generation / ATWS; 3-

EOP-E-0 Attachment 3, Reactor Trip or Safety Injection, Prompt Action Verifications; and 3-EOP-E-1, Loss of Reactor Coolant or Secondary Coolant Response.

The event classification (Site Area Emergency) was checked for proper classification and simulated state notification in accordance with licensee procedures 0-EPIP-20101, Duties of the Emergency Coordinator and 0-EPIP-20134, Offsite Notifications and Protective Action Recommendations. The simulator board configurations were compared with actual plant control board configurations. The inspectors specifically evaluated the following attributes related to operating crew performance and the licensee evaluation:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of off-normal and emergency operating procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by shift supervision, including ability to identify and implement appropriate TS actions, emergency plan classification, and state notification
- Crew overall performance and interactions
- Evaluator's oversight, critique, and findings

b. Findings

No findings were identified.

.2 Licensed Operator Requalification Biennial Review

a. Inspection Scope

The inspectors reviewed the facility operating history and associated documents in preparation for this inspection. During the week of November 14, 2011, the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5**,** 1998 "American National Standard for Nuclear Power Plant Simulators for use in Operator Training and Examination." The inspectors observed one crew during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift

records, simulator modification request records, simulator performance test records, operator feedback records, licensed operator qualification records, remediation plans, watchstanding records, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed during the inspection are documented in the List of Documents Reviewed.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the Maintenance Rule a(3) periodic assessment and associated condition reports to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants). Implementation of licensee administrative procedure 0-ADM-728, Maintenance Rule Implementation, was also routinely monitored by observation of activities and discussion with licensee personnel. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of a(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some corrective maintenance activities. The inspectors verified that equipment problems were being identified and entered into the corrective action program. The inspectors used the licensee's maintenance rule data base, system health reports, and the corrective action program as sources of information on tracking and resolution of issues.

- SAQH-01607651 Maintenance Rule (a)(3) Periodic Assessment, dated August 14, 2011

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors verified the licensee's risk assessment of six emergent or planned maintenance activities. The verification was done using the licensee's risk assessment and risk management activities, evaluated using the requirements of 10 CFR 50.65(a)(4); and licensee Procedures 0-ADM-068, Work Week Management, O-ADM-225, On Line Risk Assessment and Management; and 3-ADM-051. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate

increased risk resulting from the degraded equipment and the licensee assessment of aggregate risk using FPL procedure OP-AA-104-1007, Online Aggregate Risk. The inspectors evaluated the following conditions, which included risk assessments and risk management activities:

- October 5: Unit 3 risk during reactor depressurization for emergent replacement of 3C reactor coolant pump seal, both trains protected, with planned switchyard work.
- October 17: Unit 3 risk following identification of grounds on the vital and non-vital DC busses.
- October 18: Unit 4 risk and risk management following failure of 4A emergency diesel generator to run during a planned surveillance test (AR 1697701)
- November 1: Unit 3 risk when replacing reactor protection system relay PRB-1 following failure (AR 1701712)
- November 17, Unit 4 Yellow risk (administrative) when 4A emergency diesel generator was out of service for planned governor maintenance
- December 14, Unit 4 risk and risk management during maintenance on the 4B intake cooling water basket strainer

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

For the seven operability evaluations described in the condition reports (CR) listed below, the inspectors evaluated the technical adequacy of licensee evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the final safety analysis report to verify that the system or component remained available to perform its intended function. In addition, when applicable, the inspectors reviewed compensatory measures implemented to verify that the plant design basis was being maintained. The inspectors also reviewed a sampling of condition reports to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

- AR 1693331, Operability of the Independent Spent Fuel Storage heavy haul path after FPL identified that steel support plates have shifted due to degradation of under-support and sandbags
- AR 1693728, Auxiliary feedwater operability when a plastic plug was installed in electrical output of auxiliary feed water Rosemount transmitter PIT-1429
- AR 1695224, Operability of 4B emergency diesel generator following high fuel suction strainer alarm during the monthly test
- AR 1696445, Operability of Unit 3 residual heat removal piping after voiding was identified during planned periodic ultrasonic testing (UT).

- AR 1701712, Operability of Unit 3 reactor protection system train B following failure of over power relay PRB-1. FPL drawing 5613-M-430-146, sheet 5B was used in the assessment.
- AR 1670250, Functionality of Unit 3 and Unit 4 flood protection with regard for flood design of proposed Units 6 and 7.
- AR 1717820, Operability of C auxiliary feedwater pump turbine with lubricating oil at 67 percent full

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed one temporary system modification listed below to ensure that safety system availability or reliability was not affected. The inspectors specifically checked the structural integrity and failure modes of installed components. Routinely, the inspectors conducted plant tours and discussed system status with engineering and operations personnel to check for the existence of modifications that had not been appropriately identified and evaluated.

- Work Request 34005985-03, Unit 3 and Unit 4 component cooling pump bearing covers

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the six post maintenance tests listed below, the inspectors reviewed the test procedures and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was operable. The inspectors used licensee procedure 0-ADM-737, Post Maintenance Testing, in their assessments.

- Unit 3: leak check, position indication verification, and in-service stroke test open for 3B emergency containment cooler outlet component cooling water valve, CV-3-2906, following actuator replacement per work order 40072385-01
- Unit 3: Work Order 40034170-01, Main Feedwater System performance Test, and 3-PMI-074.01Main Feedwater Valve Control Loop Response Test following

replacement of the Unit 3 Main Feedwater Regulating valve hand auto station and controllers under work order 40034170-01,-02

- Unit 4: 4-OSP-023.2, Diesel generator 24 Hour Full Load Test (Rapid Start and 110 percent loading), then 4-OSP-023.1, 4A Emergency Diesel Generator Surveillance Test following exciter diode replacement per Work Order 40116340-02, Test of voltage Regulator, 4A Emergency Diesel Generator Trip During Surveillance (AR 1697701)
- Unit 4: Satisfactory stroke of CV-4-2904 using 4-OSP-055.1, emergency Containment Cooler Operability Test, and air leak check following pilot valve replacement in accordance with work order 40039318-01
- Unit 3: Inservice testing of 3B component cooling water pump using licensee procedure 3-OSP-030.1, component cooling Water Pump Inservice Test; following pump shaft and seal replacement under work order 34022269-01
- Unit 4: Post modification testing of instrument air compressors 4CM and 4CD following instrument air upgrade under Engineering Change 246991. Testing included load and unload pressure tests; 24 hour run of each engine; cold and auto start testing; leak checks; and an under voltage start test of 4CD, testing was per work orders 40006291-41 and 40006291-59.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 3 Forced Outage 3C Reactor Coolant Pump Seal Replacement

a. Inspection Scope

The inspectors observed selected Unit 3 outage activities to determine whether shutdown safety functions were properly maintained as required by technical specifications and plant procedures. The inspectors evaluated specific performance attributes including operator performance, communications, and risk management. The inspectors reviewed procedures and observed selected activities associated with the outage and conducted walkdowns of systems credited to maintain safety margins and defense in depth. The inspectors verified that activities were performed in accordance with the outage plan, plant procedures, and as appropriate, verified that acceptance criteria were met. Conditions adverse to quality were verified as documented by the licensee in the corrective action program. Also, management activities were monitored to assure adherence to the outage plan and safe resolution of issues. The inspectors specifically evaluated the following activities:

- Review of the outage plan
- Implementation of the shutdown safety plan using licensee procedure 0-ADM-051, Outage Risk Assessment and Control, Enclosures 1 and 2.
- Ability of the licensee to close containment if needed within specified times when the reactor coolant system was partially drained
- Verification that outage issues were documented in the corrective actions program
- Monitoring of decay heat removal system performance, lineups, and cooldown rate. The inspectors verified that the plant cooldown was conducted in accordance with licensee procedure 4-OSP-041.7, Reactor Coolant System Heatup and Cooldown Temperature Verification
- Reactor coolant system drain to below the vessel flange and operations with a short time to boil including verification of alternate electrical supplies, switchyard restrictions, and both trains protected
- Final containment inspection with a check of sump system operational lineup
- Reactor plant heatup and startup, power ascension, including observations of licensee procedure 4-GOP-503, Cold Shutdown to Hot Standby

b. Findings

No findings were identified.

.2 Unit 4 Forced Outage Repair of 4A Safety Valve

a. Inspection Scope

The inspectors observed selected Unit 4 outage activities to determine whether shutdown safety functions were properly maintained as required by technical specifications and plant procedures. The inspectors evaluated specific performance attributes including operator performance, communications, and risk management. The inspectors reviewed procedures and observed selected activities associated with the outage and conducted walk downs of systems credited to maintain safety margins and defense in depth. The inspectors verified development and adherence to an outage risk management plan. Conditions adverse to quality were verified documented by the licensee in the corrective action program. Also, management activities were monitored to assure adherence to the outage plan and safe resolution of issues. The inspectors specifically evaluated the following activities:

- Review of the outage plan
- Implementation of the shutdown safety plan using licensee procedure 0-ADM-051, Outage Risk Assessment and Control, Enclosures 1 and 2.
- Verification that outage issues were documented in the corrective actions program
- Monitoring of decay heat removal system performance, lineups, and cooldown rate. The inspectors verified that the plant cooldown was conducted in accordance with licensee procedure 4-OSP-041.7, Reactor Coolant System Heatup and Cooldown Temperature Verification
- Final containment inspection with a check of sump system operational lineup

- Reactor plant heatup and startup, power ascension, including observations of licensee procedure 4-GOP-503, Cold Shutdown to Hot Standby

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following five surveillance tests to verify that the tests met the technical specification requirements, the Updated Final Safety Analysis Report (UFSAR), and the licensee's procedural requirements and demonstrated that the systems were operationally ready to perform their intended safety functions. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the position/status required for the system to perform its safety function. The inservice testing (IST) was validated using the licensee's Inservice Testing Program Fourth Ten Year Interval, dated March 11, 2004. The inspectors verified that surveillance issues were documented in the corrective action program.

- 4-OSP-023.1, 4B Emergency Diesel Generator Monthly Surveillance Test
- 4-OSP-041.1, Unit 4 Reactor Coolant System Leak Rate Calculation
- 3-OSP-075.9, Auxiliary Feedwater Overspeed Test (B auxiliary feedwater pump turbine)
- 3-OSP-041.1, Unit 3 Reactor Coolant System Leak Rate Calculation
- 3-OSP-068.2, 3B Containment Spray System In-service Test (IST)

b. Findings

No findings were identified.

1EP6 Drill Evaluation

Simulator Based Training Evolution

a. Inspection Scope

On November 8, 2011, the inspectors observed an operating crew in the plant simulator. The simulation included a plant runback followed by a manual reactor trip and a steam generator tube rupture. The tube rupture caused a safety injection actuation that required the declaration of an Alert (FA1). During the drill, the inspectors assessed operator actions to verify that emergency classification and simulated notification of local officials were made in accordance to 10 CFR 50.72 requirements, including timeliness. The inspectors reviewed the event classifications and notifications to ensure these were

made in accordance with licensee procedure, 0-EPIP-20101, Duties of the Emergency Coordinator, and Attachment 1, Turkey Point Emergency Action Level Classification Tables. Drill critique items were discussed with the licensee and reviewed to verify that drill issues were identified and captured in the licensee's corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS04 Occupational Dose Assessment

a. Inspection Scope

The inspector evaluated current Radiation Protection (RP) program guidance and its implementation for monitoring and assessing occupational workers' internal and external radiation exposure. The review included recent changes to program guidance and equipment, as applicable; quality assurance activities, results, and responses to identified issues; and individual dose results for selected occupational workers.

External Dosimetry. The inspector reviewed and discussed RP program guidance for monitoring external and internal radiation exposures of occupational workers. The inspector verified National Voluntary Laboratory Accreditation Program (NVLAP) certification data and discussed program guidance for storage, processing and results for dosimeters currently in use. Licensee evaluations of biases identified between electronic dosimeter (ED) and thermoluminescent dosimeter (TLD) data were reviewed and discussed in detail.

Internal Dosimetry. Program guidance, instrument detection capabilities, and select results for assessing internally deposited radionuclides were reviewed in detail. The inspector evaluated licensee follow-up *in vivo* monitoring results and dose assignment for selected workers involved in contamination events having the potential for internal deposition of radioactive material. In addition, the current licensee and contract vendor laboratory analysis capabilities for the collection and analysis of *in vitro* samples were reviewed and discussed in detail.

Special Dosimetric Situations. The inspector reviewed monitoring conducted and results for declared pregnant workers for calendar year 2010 and year-to-date for CY 2011. The methodology and results of monitoring occupational workers within non-uniform external dose fields and assignment of effective dose equivalent results for recent spent fuel cask preparation were discussed in detail. In addition, the adequacy of dosimetry program guidance and its implementation for shallow dose assessments and supporting calculations for personnel involved in selected contamination events were evaluated. Neutron monitoring guidance and implementation for 'at power' containment entries, and for loading and preparing casks placed onto the Independent Spent fuel Storage Installation (ISFSI) pad were reviewed and discussed. RP staff proficiency involved in conducting skin dose assessments, neutron monitoring, and Whole Body Counting equipment operations were evaluated through direct interviews, onsite observations, and review and discussions of completed records and supporting data.

Corrective Action Program (CAP) Review. The inspector reviewed and discussed selected Corrective Action Program (CAP) documents associated with occupational dose assessment. The reviewed items included CAP Action Request (AR), self-assessments, and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with Performance Improvement Procedure (PI-AA)-204, Condition Identification and Screening Process, Revision (Rev.) 14, and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 14.

RP program occupational dose assessment guidance and activities were evaluated against the requirements of the UFSAR Section 11; Technical Specification (TS) Sections 6.8.1, Procedures and Programs, and 6.12, High Radiation Area; 10 Code of Federal Regulations (CFR) Parts 19 and 20; and approved licensee procedures. Records reviewed are listed in Section 2RS4 of the report Attachment.

The inspectors completed all specified line-items detailed in Inspection Procedure (IP) 71124.04.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered

daily into the licensee's corrective action program. This review was accomplished by reviewing daily summaries of condition reports and by reviewing the licensee's electronic condition report database. Additionally, reactor coolant system unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

b. Findings

No findings were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected the following two issues for detailed review and discussion with the licensee. Action reports were reviewed to ensure that an appropriate evaluation was performed and appropriate corrective actions were specified and prioritized. Other attributes checked included disposition of operability and resolution of the problem including cause determination and corrective actions. The inspectors reviewed issues from an NRC special inspection documented in NRC Inspection Report 05000250/2011013. The inspectors evaluated the issues in accordance with the requirements of the licensee's corrective actions process as specified in licensee procedures PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action.

- AR 1701720, Foreign material found in 3B component cooling water pump impeller
- Operator Burdens and Workarounds (annual sample), considering all existing plant conditions and including the cumulative effects of other operator workarounds

b. Findings

Introduction: A Green self-revealing Non-cited violation of 10 CFR 50 Criterion XVI was identified for failure to take corrective actions for a degraded butterfly valve in the intake cooling water system. Specifically, degradation of this valve was identified in 2007, but was not repaired. Consequently, in August 2011, failure of this valve led to a loss of intake cooling water (ICW) flow to the component cooling water heat exchangers.

Description: On August 11, 2011, plant personnel noted a large leak from the Unit 3 3A component cooling water heat exchanger (CCW HX), accompanied by an increase in CCW head tank level and higher CCW outlet temperatures. Plant operators review of the indications concluded that manually operated butterfly valve 3-50-406 (CCW/ICW outlet CV-3-2202 Bypass Valve) had failed to the closed position. Failure of this valve isolated ICW discharge flow from the CCW HXs to the discharge canal. As a result, the licensee declared the ICW system inoperable and entered Technical Specification 3.0.3 for both intake cooling water headers not operable. The issue was corrected in about 20 minutes by opening valve 3-50-407 and returning the system to service. The licensee documented the failure in their corrective action program as AR 01680272 and initiated a

cause investigation. The NRC Region II Administrator dispatched a Special Inspection Team to the site to: (1) determine the facts surrounding the loss of the Turkey Point Unit 3 ICW system, (2) evaluate the licensee's response to this condition, and, (3) determine if all the requirements of the pertinent technical specifications and system design bases were met. Results of this special inspection were documented in NRC Inspection Report 05000250/2011013. Subsequently, the NRC has found that from 2007 until the failure in August 2011, the licensee failed to take corrective actions for an identified deficiency (valve fluttering) which was identified during preventive checks.

Analysis: The licensee's failure to take prompt corrective actions for a degraded valve was a performance deficiency. Specifically, the licensee did not repair ICW valve 3-50-406, though it had been identified in 2007 as vibrating excessively (fluttering). This performance deficiency was considered more than minor because it could be reasonably viewed as a precursor to a significant event, (e.g., the Unit 3 transient which occurred August 11, 2011). The inspectors assessed the finding using Inspection Manual Chapter (IMC) 0609, Significance Determination Process (SDP), Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding represented a loss of safety function for a system (i.e., the ICW system). As a result, the characterization worksheet for Mitigating Systems required a Phase 2 analysis to be performed. The inspectors performed a Phase 2 analysis with a potential greater-than-green result, thus requiring a detailed Phase 3 analysis be done.

A Senior Reactor Analyst determined the increase in risk to either unit was of very low risk significance i.e., Green. Unit 3 risk was assessed because the event occurred on that unit; however Unit 4 risk was also assessed because the same vulnerability existed on the ICW valves on that unit (e.g., similar design, maintenance history, etc.). The main contributors to the low risk results were: 1) the recovery probability of the ICW system given the extended time available to operators before a RCP seal LOCA could occur, and 2) the multiple redundant sources available to cool the core should the CCW system fail. The dominant core damage scenarios were valid demands for a reactor trip followed by the failure to recover ICW proceeding to a RCP seal LOCA and core damage. For the Unit 3 risk calculation the analyst performed an event assessment using the SPAR model in the ECA mode. The Initiating Event IE-LOICW, "Loss of Intake Cooling Water" was set = 1.5E-2. The basic event ICW-XHE-XL-ICWSYS, "Operator Fails to Recover from a Loss of Intake Cooling Water" was left at 1.0. The truncation value was set at 1E-11 and 4 threads were solved. The calculated CCDP was 6E-7 (Green) and this was assumed to be a delta-risk because the base case was several orders of magnitude less than the result. The inspectors determined that the cause of this finding was related to the cross-cutting area of Problem Identification and Resolution in that the licensee failed to take appropriate corrective action to address safety issues in a timely manner, commensurate with their safety significance. [P.1(d)]

Enforcement: 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," requires that measures shall be established to assure conditions adverse to quality, such as failures and malfunctions, are promptly identified and corrected. Contrary to the above, in December 2007, the licensee identified that valve 3-50-406 was degraded (was experiencing considerable fluttering) and that the actuator needed to be replaced.

However, two refueling outages had passed without promptly correcting the malfunction. As a result, on August 11, 2011, valve 3-50-406 failed closed causing a loss of ICW. The ICW system was restored in about twenty minutes by opening valve 3-50-407, and the issue was documented in the licensee's corrective action program as AR 01680272. The valve actuator was subsequently replaced and the valve returned to service. Because this violation was of very low safety significance and was entered in the licensee's corrective action program, this violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the NRC Enforcement Policy**.** (NCV 05000250/2011-005-01) Failure to Correct Valve Deficiency Results in Both Headers of Intake Cooling Water Inoperable.

.3 Semi-Annual Trend Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors reviewed the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector corrective actions item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, document reviews, and licensee trending efforts. Documents reviewed included Turkey Point Corrective Action Program Health Index, November 2011 and the Nuclear Safety Culture Turkey Point Site Dashboard, dated November 2011. The inspectors' review nominally considered the six month period of July through December 2011. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. The licensee continued to develop a Nuclear Safety Culture Dashboard to allow management oversight of indicators that could reflect the health of the workplace safety conscious work environment.

4OA3 Event Follow up

.1 (Closed) LER 05000250 and 251/2010-001-02, Spent Fuel Storage Design Feature Assumptions are Exceeded

On July 22, 2010, FPL was informed by a vendor that improvements in the methods used to evaluate the integrity of boraflex poison in the Units 3 and 4 spent fuel pools had resulted in some variance in the testing results, some conservative and other non-conservative. Additionally, FPL was now reporting that some flow induced damage to spent fuel storage cells had caused these cells to fall outside of technical specification required geometries. FPL further reported that there was no safety impact to either discovery because boraflex was no longer credited in maintaining the spent fuel pool subcritical, and the damaged cells had been excluded from use because they were

inaccessible. The inspectors reviewed the LER and determined that no new performance deficiencies had been identified. License amendments 234 and 229 had been implemented to assure the spent fuel pools remained subcritical for the Unit 3 and Unit 4 pools respectively. NRC Inspection Report 50-250/2010-009 detailed NRC review and previous enforcement actions in these matters. The LER supplement is closed.

.2 (Closed) LER 05000251/2010-08-00 and LER 05000251/2010-08-01. Manual Reactor Trip Due to Condenser Tube Leak (and Supplement),

On December 9, 2010, Unit 4 reactor power was rapidly reduced and the reactor manually tripped in accordance with FPL procedures when a condenser tube failed causing a secondary system chemistry transient. There were no complications. The licensee kept the reactor shutdown for corrective activities including restoring all chemistry parameters to normal and plugging the failed tube. Four other tubes were also plugged as a preventive measure. The failed tube was later removed, evaluated, and it was determined to have failed due to high cycle fatigue. The licensee intended to replace the tube bundles in the condensers for both units during the 2012 outages. No performance deficiencies were identified in the inspector's review. Additional inspection of this issue was provided in NRC Inspection Report 50-251/2011-003, dated August 4, 2011. The LER and supplement are closed.

.3 (Closed) LER 05000250/2010-06-00. Manual Reactor Trip and Auxiliary Feedwater Actuation in Response to Loss of Circulating Water Pump

On November 15, 2010, Unit 3 was manually tripped from full power following a report from a field operator that the 3A2 circulating water pump bearing packing was burning and the pump needed to be immediately stopped. At the time, the 3A1 was tagged out of service and the manual trip was taken in anticipation of an automatic trip on low condenser vacuum which would occur if the 3A2 circulating water pump was stopped. Following the manual trip, the reactor was stabilized in Mode 3 and the burning was quickly extinguished with no impact on safety equipment. Although main feedwater remained available to feed the steam generators, auxiliary feedwater actuated as expected and responded without complications. One atmospheric steam dump opened as expected on the trip, but failed to close causing a small cooldown of the reactor until isolated by shutting of a local manual valve. The licensee entered the trip into the corrective action system and began an investigation. The 3A2 circulating water pump had been placed in service following packing work on November 14, 2010. During the root cause evaluation, the licensee found that there were inadequate administrative controls for pump packing consolidation for the non-safety pump and the risk associated with removal of the 3A1 circulating pump from service without adequate operating time on the 3A2 pump was not recognized. As corrective action, the licensee revised their procedures for packing adjustments and post-maintenance monitoring to assure adequate post-maintenance reliability of pumps following packing adjustments. The event was communicated to station personnel to assure that risk awareness would be improved for pump packing adjustments and similar maintenance. The atmospheric steam valve was repaired and returned to service following testing. Procedure changes were made to the preventive maintenance procedures for these valves to verify lock nut

tightness during periodic maintenance activities. No performance deficiencies were identified in the inspector's review. The LER is closed.

.4 Inspector's Review of Licensee Event Notification 47387, Technical Support Center Unavailable for Emergency Conditions, dated October 28, 2011

a. Inspection Scope

The inspectors reviewed the event notification made after the licensee discovery that the Technical Support Center (TSC) had been unavailable for emergency conditions during the period October 10 to October 28, 2011. The unavailability occurred when the ventilation system recirculation capability had been removed from service by Equipment Clearance Order (ECO) on the power supply to the ventilation dampers that reposition for emergencies. The licensee later retracted the report after performing a functionality assessment (ACR 1701357), TSC HVAC Performance Capability during Damper Misalignment; which was reviewed by the inspectors. The inspectors reviewed the licensee's cause determination for AR 1701357 and the TSC facility was walked down with licensee representatives. In their cause determination, the licensee documented that the same power supply had been removed from service under ECO from December 4, 2010 to July 13, 2011 for damper maintenance. The inlet damper to the TSC had been found to be inoperable in January 2010 and was eventually replaced in July 2011. The inspectors reviewed this occurrence as part of this inspection.

b. Findings

Introduction: An Apparent Violation (AV) of 10 CFR Part 50.54(q), and of the planning standards in 10 CFR 50.47(b)(8) was identified when the licensee failed to maintain an on-site TSC to provide the Control Room with in-depth diagnostic and engineering assistance in event of an emergency. The AV existed from December 4, 2010 to July 13, 2011, and from October 10 to October 28, 2011, when portions of the TSC ventilation system were removed from service without compensatory measures and without an evaluation that described how effectiveness of the emergency plan was not decreased. The inspectors determined that the licensee did not adequately maintain the TSC such that ERO members would not be protected from radiological hazards when performing emergency response plan functions in the absence of compensatory measures.

Description: On October 10, 2011, the TSC ventilation system was removed from service for planned maintenance. The equipment clearance order de-energized the TSC ventilation system dampers in the non-emergency position and disabled the recirculation function of the ventilation system. As part of the equipment clearance order, there was a special instruction to notify the Emergency Preparedness Coordinator that the TSC ventilation system was being removed from service. The Emergency Preparedness Coordinator was not informed of the outage of the TSC, and therefore no compensatory measures were in place.

On October 27, 2011, Operations department personnel found a TSC ventilation system operational test could not be performed and documented the issue in the corrective actions program. On October 28, during management review, a manager questioned if the Technical Support Center ventilation system was able to perform its design function. The Technical Support Center ventilation system was promptly restored to service and an investigation initiated. The licensee initially determined the damper positions were not in the required recirculation mode, and the Technical Support Center was not functional for 18 days. At this time, Event Report 47387 was made to the NRC. Subsequently, the licensee performed Functionality Assessment (ACR 1701357), TSC HVAC Performance Capability during Damper Misalignment, that documented that the TSC heating, ventilating and air conditioning (HVAC) remained functional and above full qualification, and Event Notification 47387 was retracted.

The licensee's functionality assessment noted that TSC requirements are defined by Section III.A.1.2 of NUREG-0737 and Section 8.2 of its Supplement 1, in conjunction with the General Design Criterion 19 for system functional reliability. The licensee stated that per NUREG-0696, the TSC habitability criteria include: TSC personnel shall be protected from radiological hazards; TSC HVAC shall function in a manner comparable to control room ventilation; continuous radiation monitoring shall be provided; sufficient potassium iodide shall be provided for personnel travel outside the TSC; and radiological protection equipment shall be provided for personnel travel outside the TSC. The licensee assessed the functionality of the TSC by estimating the dose to TSC responders during a potential emergency. The inspectors noted that one of the assumptions of the calculations utilized the favorable wind conditions which existed in October 2011, which in turn resulted in an allowable dose estimate. The inspectors disagreed with this assumption, asserting that TSC habitability and functionality cannot be dependent on favorable atmospheric conditions.

During the licensee's review of the event, they identified that a similar event had occurred in 2010 where the ventilation system was found degraded in January, then removed from service on December 4, 2010 through July 13, 2011, when the TSC ventilation damper power supply was tagged out on ECO. The degraded condition was an inlet damper identified by engineering as failed in the closed position. During this period, the Technical Support Center was not declared non-functional, no technical operability evaluation was completed, and no compensatory measures were put in place. No report was made to the NRC regarding this period when the TSC ventilation system was not in its normal alignment and not capable of realignment to the recirculation mode, based on an engineering judgment that the inlet damper was failed in the closed position and only filtered air would be in the TSC during emergency operations. The actual position of the inlet damper was unknown, in that the maintenance department documented the damper position as open, and system testing did not confirm the damper was shut. No evaluation was required by the licensee except a reportability review which concluded the occurrence was not reportable.

Analysis: The inspectors concluded that the failure to implement compensatory measures when the Technical Support Center ventilation system was removed from service on two occasions was a performance deficiency. The performance deficiency

was more than minor because it affected the Emergency Preparedness Cornerstone objective of ensuring the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The Emergency Preparedness cornerstone was affected in that during the time the Technical Support Center was not functional, it did not meet the 10 CFR 50.47(b)(8) planning standard function to ensure adequate facilities are maintained to support emergency response as protection of TSC personnel from radiological hazards could not be assured. The inspectors determined that the Technical Support Center was not functional for a period of longer than 7 days from the time of discovery of the ventilation system outage, to the extent that any key ERO member would not be protected from radiological hazards when completing assigned emergency response plan functions and in the absence of compensatory measures. This condition occurred twice; December 2010 to July 2011 and again in October 10 to 28, 2011. The two events were assessed as a single finding with a common performance deficiency. This finding was evaluated in accordance with Manual Chapter 0609, Appendix B, Emergency Preparedness Significance Determination Process, Section 4.8 and constituted a loss of planning standard function. Using the "Failure to Comply" flowchart, the functional failure resulted in a preliminary White finding.

The cause of the finding is related to the Problem Identification and Resolution cross-cutting area in that the licensee did not thoroughly evaluate problems with the TSC ventilation system as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability, conditions adverse to quality. (P.1.c).

Enforcement: 10 CFR Part 50.54(q), requires, in part, that a licensee shall follow and maintain in effect emergency plans which meet the standards in 10 CFR 50.47(b). 10 CFR 50.47(b)(8), requires that adequate emergency facilities and equipment to support the emergency response are provided and maintained. The Turkey Point Radiological Emergency Plan, Revision 53, section 2.4.3, Technical Support Center, requires the licensee is to maintain an on-site Technical Support Center to provide the Control Room with in-depth diagnostic and engineering assistance without adding congestion to the Control Room. Contrary to the above, from December 4, 2010 to July 13, 2011, and from October 10 to October 28, 2011, the licensee failed to maintain in effect a provision of its emergency plan in that adequate emergency facilities and equipment to support emergency response were not provided and maintained when portions of the Technical Support Center ventilation system were removed from service for maintenance without compensatory measures. Pending final significance determination, this finding is identified as AV 05000250 and 251/2011005-02 Failure to maintain TSC habitability.

.2 Introduction: The inspectors identified an AV of 10 CFR 50.72(b)(3)(xiii) for failure to report to the NRC within eight hours of occurrence an event that resulted in a loss of emergency assessment capability, which was identified on December 4, 2010 when TSC damper MOV-6414B was determined to be failed and the common power supply to all of the TSC dampers was removed from service by ECO. The ECO remained in place until July 13, 2011 when the damper was replaced.

Description: On October 28, 2011, the licensee identified that the TSC ventilation system damper motors had been removed from service by a clearance order de-energizing their common power supply. The ECO which had been in place for 18 days prevented dampers in the TSC ventilation system from repositioning to support post-accident response and was identified when planned testing of the TSC ventilation could not be completed. On October 28, 2011, the licensee reported this degradation of the TSC ventilation system to the NRC, and noted that the incident had occurred without compensatory measures and without an evaluation. The report was made in accordance with the requirements of 10 CFR 50.72(b)(3)(xiii). At that time, the licensee initiated an investigation into the cause.

During the cause investigation, the licensee found that from December 4, 2010 until July 13, 2011, the TSC ventilation damper common power supply was de-energized by a clearance order. The ECO was initiated to support an earlier evaluation made by engineering personnel that the TSC ventilation inlet damper MOV-6414B had degraded and needed to be replaced. An engineer noted the damper as failed closed, while maintenance workers later identified the damper as seized open. When the TSC was removed from service, no compensatory measures were taken nor was a functional evaluation performed regarding the ability of the TSC to support emergency assessment, onsite communication, or offsite communication capability should an event occur. The TSC houses an emergency communication network that includes commercial telephone lines and the emergency notification dedicated phone to the NRC Operations Center, along with other emergency equipment. The TSC is used by engineering, radiation protection, chemistry, operations, and other personnel assigned assessment or communication duties during licensee response to a significant event. 10 CFR 50.72(b)(3)(xiii) states that the licensee shall report to the NRC within 8 hours of occurrence any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability. The licensee implements this requirement with their procedure 0-ADM-115, which states that if the TSC is not available, an evaluation for reportability should be completed. No report was made to the NRC regarding loss of emergency assessment or communication capability during this December 2010 to July 2011 period when the TSC ventilation system could not provide protection to TSC personnel from radiological hazards while responding to an event.

Analysis: The failure to make a required report to the NRC in December 2010 in accordance with 10 CFR 50.72(b)(3)(xiii), when the licensee identified that the TSC ventilation system was degraded was an apparent violation. This finding was evaluated using the traditional enforcement process because it impacted the NRC's ability to perform its regulatory function. The finding is also being considered for escalated enforcement action in accordance with NRC Enforcement Policy because the underlying issue, which was failure to maintain the TSC, has preliminarily been evaluated to be of low to moderate safety significance (White). No cross-cutting aspect associated with this issue was identified.

Enforcement: 10 CFR 50.72(b)(3)(xiii) states that the licensee shall report to the NRC within 8 hours of occurrence any event that results in a major loss of emergency

assessment capability, offsite response capability, or offsite communications capability. Contrary to the above, from December 4, 2010 through July 13, 2011, the licensee failed to report to the NRC a major loss of emergency assessment, offsite response, and offsite communication capability which occurred when the TSC was not functional. Pending final determination of severity level, this apparent violation is identified as AV 05000250, 251/2011005-03 Failure to make a required 8 hour NRC report for major loss of emergency assessment capability.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel activities to ensure that the activities were consistent with the licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.2 Independent Spent Fuel Storage Installation (ISFSI) Walkdown (IP 60855.1)

a. Inspection Scope

The inspectors conducted a walk down of the ISFSI controlled access fenced-in cask area per Inspection Procedure 60855.1, Operation of an ISFSI at Operating Plants. The inspectors observed each cask building temperature indicator and passive ventilation system to be free of any obstruction thus allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and security access controls to the ISFSI area to be functional. On November 16, the inspectors accompanied the transfer of a storage cask to the Horizontal Storage Module Pad and observed implementation of radiation protection and security controls during the transfer.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

The resident inspectors presented the inspection results to Mr. Coffey and other members of licensee management on January 18, 2012. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

ATTACHMENT: SUPPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee personnel:
B. Carberry, Emergency Preparedness Manager
C. Cashwell, Radiation Protection Manager
R. Coffey, Outage Manager
N. Constance, Training Manager
M. Crosby, Quality Manager
J. Danek, Radiation Protection
J. Garcia, Engineering Manager
M. Jones, Operations Manager
M. Kiley, Site Vice-President
G. Mendoza, Chemistry Manager
E. McCartney, Plant General Manager
J. Pallin, Maintenance Manager
J. Patterson, Fire Protection Supervisor
S. Shafer, Assistant Operations Manager
R. Tomonto, Licensing Manager

NRC personnel:
D. Rich, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED

Opened		
05000250 and 251/2011005-02	AV	Failure to maintain TSC habitability (Section 4OA3)
05000250 and 251/2011005-03	AV	Failure to make a required 8 hour NRC report for major loss of emergency assessment capability (Section 4OA3)
Opened and Closed		
05000250/2011-005-01	NCV	Failure to Correct Valve Deficiency Results in Both Headers of Intake Cooling Water Inoperable (Section 4OA2)
Closed		
05000250&251/2010-001-02	LER	Spent Fuel Storage Design Feature Assumptions are Exceeded (Section 4OA3)
05000250/2010-06-00	LER	Manual Reactor Trip and Auxiliary Feedwater Actuation in Response to Loss of Circulating Water Pump (Section 4OA3)
05000251/2010-08-00	LER	Manual Reactor Trip Due to Condenser Tube (Section 4OA3)
05000251/2010-08-01	LER	Manual Reactor Trip Due to Condenser Tube Leak (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 2RS04: Occupational Dose Assessment

Procedures and Guidance Documents

0-Health Physics Surveillance Procedure (HPS) 031.1, Whole Body Dosimetry Issue,
0-Health Physics Administrative Health Physics Procedure (HPA) – 030, Personnel Monitoring of External Dose, Rev. 2
0-Health Physics Administrative Health Physics Procedure (HPA) – 031.2, Multibadge Exposure Monitoring, 1/27/2011
Radiation Protection Procedure (RP)-AA-101-2004, Method for Monitoring and Assigning Effective Dose Equivalent (EDE) for High Dose Gradient Work, Revision (Rev.) 2.
RP-SR-101-1005, Internal Dose Assessment, Rev. 4
RP-SR-101-1003, Personnel Contamination Monitoring and Decontamination, Rev. 3
RP-SR-102-1001, Area Radiological Surveys and Analyses, Rev. 2
RP-TP-103-3001, ISFSI Radiological Controls, Rev. 2
Radiation Work Permit Number (RWP) 11-0021, Independent Spent Fuel Storage Installation (ISFSI), Task 9, U4 Load TC / DSC's, Transfer to CHF, weld DSC Covers, Drain / Perform VDS, Including Support Activities
RWP 11-421,6, Task 2, RWST Initial Entry, Surveys, Wash Down and Inspections, Prep and Coat, Rad Waste Handling and Disposal
Performance Improvement Procedure (PI-AA)-204, Condition Identification and Screening Process, Rev. 14
PI-AA-205, Condition Evaluation and Corrective Action, Rev. 14

Records and Data Reviewed

Radiological Event Track Sheet Data: Calendar Year (CY) 2010 and January 1, 2011, through November 7, 2011
Licensing Personnel Contamination Event (PCE) and Personnel Contamination Report (PCR) Data Lists: November 1, 2009, through November 1, 2011
Air Calculation Sheet, U4 Inside RWST, Inspection With Bubble Hood, 4/2/2011
Air Calculation Sheet, U4 RWST, Coating and Trash Removal, 4/4/2011
NAVLAP Lab Code 100555-0, On-Site Assessment Report, January 18-21, 2010
National Voluntary Laboratory Accreditation Program (NAVLAP) Lab Code: 100555-0, Accreditation Information
Personnel Contamination Report (PCR) Plant Turkey Point Nuclear (PTN) Unit 3 Cycle 25 (U3C25) Personnel Contamination Event (PCE) Data Number 003
PCR-PTN-U3C25 PCE No. 016
PCR-PTN-U3C25PCE No. 018
Personnel Contamination Event Number (PCE) 2009-010
PCE 2010-011
PCE 2010-015

Corrective Action Program (CAP) Documents

Plant Turkey Point Nuclear (PTN) Report Number (No.) 10-015, Turkey Point Nuclear Oversight Report, 6/16/2010
Turkey Point Daily Quality Summary, 3/09/2011

Turkey Point AT-01.01 AR Reports, 02/02/2009through 10/26/2011, Sorted on the Following Search Categories: Body Count, Dosimetry, Dose Calculations, Internal Dose, and Assigned Dose
Action Request (AR) 00519380, Contamination Event – Facial
AR 00530099, Contamination Event – Discrete Radioactive Particle
AR 00533364, Worker Separated from Dosimetry
AR 00555544, RP-Evaluate Changing Dosimeter Bias to Better Predict TLD/ED Ratios
AR 00573325, Lost Dosimetry
AR 00590379, Review of Industry Alpha Event
AR 01635359, Individual Entered RCA Without Dosimetry
AR 01677343, Dosimetry - Dose Rate Alarm
AR 01686439, Respiratory Protection Equipment Issuance Not In Accordance with TEDE-ALARA Assessment,
AR 01697093, Individual Separated from Dosimetry

Records:

- License Reactivation Packages (6)
- LORP Training Attendance records (4 cycles: LOCT 112-115)
- Medical Files (15)
- Remedial Training Records (15)
- Feedback Summaries (2)

Written Examinations:

- Exams 1-5, 2011 Annual Operating Test

Procedures:

- 0-NTP-004, Implementation
- 0-ADM-315, Licensed Operator Continuing Training Program
- 0-ADM-305, Simulator Configuration Management
- SEI-004, Simulator Discrepancy Reporting
- SEI-025, Simulator Operability Testing
- TR-AA-221, Simulator Change Control
- SEI-009, Simulator Physical Fidelity Validation
- 0-NTP-005, Evaluation
- 0-NTP-008, Conduct of Simulator Training
- 0-NTP-011, Training Performance Monitoring
- 0-NTP-016, LOCT Exam Development and Administration

Simulator Normal Evolution Tests:

- Plant Shutdown from rated power to HSB, NPE-005
- Plant Startup from HSB to rated power, NPE-003
- Core Performance Test and transients
- Plant Startup from Cold S/D to HSB, NPE-002
- Core Performance Test and transients

Simulator Transient Tests:

- TRN-006 (2011), Turbine Trip Which Does Not Cause Automatic Reactor Trip
- TRN-009 (2011), Main Steam Line Break Inside Containment

Simulator Scenario Based Tests:

- SBT Loss of CCW/Loss of Vacuum/ LBLOCA

JPM Packages:

- Reviewed, 2011 Annual Operating Test (8)
- Observed, 2011 Annual Operating Test (8)

LIST OF ACRONYMS

AR	Action Request
ATWS	Anticipated Transient Without Scram
AV	Apparent Violation
CAP	Corrective Action Program
CCW HX	Component Cooling Water Heat Exchanger
CFR	Code Federal Regulation
CR	Condition Report
ECO	Equipment Clearance Order
ED	Electronic Dosimeter
ERO	Emergency Response Organization
HVAC	Ventilating and Air Conditioning
ICW	Intake Cooling Water
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
IST	Inservice Testing
NVLAP	National Voluntary Lab Accreditation Program
RCP	Reactor Coolant Pump
RP	Radiation Protection
SDP	Significance Determination Process
TAR	Reportability Review
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report

Attachment