UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

November 12, 2015

Mr. John Dent
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION – INTEGRATED INSPECTION REPORT 05000293/2015003

Dear Mr. Dent:

On September 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station (Pilgrim). The enclosed inspection report documents the inspection results, which were discussed on October 22, 2015, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate 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.

This report documents one Severity Level IV non-cited violation (NCV), three NRC-identified NCVs of very low safety significance (Green) and one self-revealing NCV of very low safety significance (Green). These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance, and because they are entered into your corrective action program, the NRC is treating these findings as NCVs, consistent with Section 2.3.2. of the NRC Enforcement Policy. If you contest any NCVs in this report, 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 I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Pilgrim. In addition, if you disagree with the cross-cutting aspect assigned to any finding 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 I, and the NRC Resident Inspector at Pilgrim.

In accordance with Title 10 of the *Code of Federal Regulations* (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's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Raymond R. McKinley, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket No. 50-293
License No. DPR-35

Enclosure:
Inspection Report 05000293/2015003
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-293
License No.	DPR-35
Report No.	05000293/2015003
Licensee:	Entergy Nuclear Operations, Inc. (Entergy)
Facility:	Pilgrim Nuclear Power Station
Location:	600 Rocky Hill Road Plymouth, MA 02360
Dates:	July 1, 2015 through September 30, 2015
Inspectors:	E. Carfang, Senior Resident Inspector B. Scrabeck, Resident Inspector B. Dionne, Health Physicist K. Mangan, Senior Reactor Inspector T. Dunn, Operator Licensing Examiner J. Pfingsten, Project Engineer
Approved By:	Raymond R. McKinley, Chief Reactor Projects Branch 5 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY

Inspection Report 05000293/2015003; 07/01/2015 – 09/30/2015; Pilgrim Nuclear Power Station (Pilgrim); Maintenance Effectiveness, Operability Determinations and Functionality Assessments, Plant Modifications, and Radiological Hazard Assessment and Exposure Controls.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified one Severity Level IV non-cited violation (NCV) and three findings of very low safety significance (Green), which were NCVs. A self-revealing finding of very low safety significance (Green) was also identified. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65 (a)(2), because Entergy did not adequately demonstrate that the performance of the main control room (MCR) annunciators was effectively controlled through performance of appropriate preventive maintenance. Specifically, Entergy did not identify and properly account for functional failures of the MCR annunciators in February 2015 and May 2015, and did not recognize that the train exceeded its performance criteria and required a Maintenance Rule (a)(1) evaluation. Entergy entered the issue into the corrective action program under condition report (CR) 2015-7986 and CR 2015-7988 and is performing the Maintenance Rule (a)(1) evaluation.

  The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, following the three failures of the main control annunciator panel in February 2015 and May 2015, Entergy did not identify the failures as functional failures, and consequently, did not establish goals and monitoring criteria in accordance with 10 CFR 50.65(a)(1). The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power." The finding is of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent a loss of safety function, and did not represent an actual loss of function of a single train for greater than its technical specification (TS) allowed outage time. The inspectors determined that the finding has a cross cutting aspect in the area of Problem Identification and Resolution, Evaluation, in that the organization thoroughly evaluates issues to ensure that resolution addresses causes and extent of conditions commensurate with their safety significance. Specifically, Entergy identified all of the failures of the MCR annunciator system, however, Entergy did not include maintenance rule monitoring functions in the evaluation of the MCR annunciator system failures. [P.2] (Section 1R12)

- Green. The inspectors identified a Green NCV of TS 3.5.F, "Minimum Low Pressure Cooling and Diesel Generator Availability," for failure to adequately perform TS surveillance requirement (SR) 4.5.F.1 to determine that the 'B' emergency diesel generator (EDG) was not inoperable due to a common cause failure, or to perform the TS-specified EDG monthly surveillance test, within 24 hours of the time that operators determined that the 'A' EDG was inoperable. Specifically, on July 1, 2015, after the 'A' EDG was declared inoperable due to unexpected annunciator response during engine pre-start checks, and again on July 28, 2015, when the 'A' EDG was declared inoperable due to reactive load oscillations during a routine surveillance, Entergy performed an inadequate common cause failure determination that did not address the failure mechanism of the inoperable EDG, which had not yet been determined. This issue has been entered into the corrective action program as CR 2015-8073, and additional guidance has been provided to the operations crew in the form of an operations section standing order, pending permanent corrective actions.

  The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the operability of the 'B' EDG was not verified as required, either through determination that it was not inoperable due to a common cause failure or through performance of the monthly TS-required surveillance. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, and did not represent an actual loss of function of a single train for greater than its TS allowed outage time. This finding had a cross-cutting aspect in the area of Human Performance, Conservative Bias, because Entergy did not use decision making practices that emphasized prudent choices over those that are simply allowed, or in this case those choices that were perceived to be allowed. Specifically, Entergy's credited SR 4.5.F.1 based on an administrative review instead of more deliberate actions or evaluations that would be necessary to confirm that a common cause condition did not exist. [H.14] (Section 1R15)

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, "Instructions, Procedures, and Drawings," when Entergy failed to adequately assess the operability of the shutdown transformer as required by EN-OP-104, "Operability Evaluation Process." Specifically, Entergy failed to evaluate changes to the 23 kilovolt (kV) line supplying the shutdown transformer that resulted in the shutdown transformer incorrectly being called operable. This issue has been entered into the corrective action program under CR 2015-7787. Entergy is conducting a causal analysis and operators have been given interim guidance to declare the shutdown transformer inoperable under similar conditions.

  This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a modification was made to the site, as described in the Updated Final Safety Analysis Report (UFSAR) that was unrecognized by Entergy during the operability determination process and resulted in the incorrect operability determination for the shutdown transformer. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors

determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, and did not represent an actual loss of function of a single train for greater than its TS allowed outage time. This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, in that individuals did not recognize and plan for the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes. Specifically, personnel did not fully evaluate the change to the 23 kV line, and instead relied on a previous incorrect operability determination to justify declaring the shutdown transformer operable. [H.12] (Section 1R15)

- Severity Level IV. Inspectors identified a Severity Level IV NCV of 10 CFR 50.59, "Changes, Tests, and Experiments," in that Entergy implemented a change to its facility that required a TS change without seeking a license amendment as required by 10 CFR 50.90. Specifically, the inspectors identified that Entergy altered the configuration of the 23 kV line to the shutdown transformer contrary to the UFSAR and that configuration required a TS change through a license amendment. Entergy is performing a causal analysis, updating required procedures, and issued a standing order to ensure the site remains in TS compliance with only the 23 kV line 108 able to supply power to maintain the shutdown transformer operable.

  The performance deficiency was dispositioned using the traditional enforcement process because it could potentially impede or impact the regulatory process. In accordance with the NRC Enforcement Manual, Revision 9, Part II, Enforcement of 10 CFR 50.59 and Related FSAR, Sections 2.1.3.E.1 and 2.1.3.E.6, this violation was determined to be more than minor because Entergy failed to request a license amendment prior to implementation. In accordance with the NRC Enforcement Policy Section 6.1, the inspectors used the SDP to inform the severity of the 10 CFR 50.59 violation, based upon the impact on the offsite alternating current (AC) power sources. As referenced in Section 1R15, the technical aspects of this issue screen to Green. Accordingly, per Section 6.1.d of the NRC Enforcement Policy, the severity of the violation of 10 CFR 50.59 was determined to be Severity Level IV, as it resulted in conditions evaluated as having very low safety significance (Green) by the SDP. There is no cross-cutting aspect associated with this violation because cross-cutting aspects are not assigned to tradition enforcement violations. (Section 1R18)

Cornerstone: Occupational Radiation Safety

- Green. The inspectors identified a self-revealing Green NCV of TS 5.4.1 procedure compliance associated with Regulatory Guide (RG) 1.33, Appendix A. Specifically, during Pilgrim refueling outage (RFO) 20, radiation workers did not comply with radiation work permit (RWP) instructions to "Contact Radiation Protection prior to each entry to discuss work scope" and to allow for "[radiation protection] RP survey when accessible surfaces are exposed." When identified, Entergy immediately stopped work on this project, conducted a safety meeting between RP and the Entergy contractors, performed the RP surveys on the accessible surfaces, and enforced the RWP respiratory protection requirements for the remaining work. This issue was entered into the Entergy corrective action program (CR 2015-07577).

  The inspectors determined that the performance deficiency was more than minor because it affected the Radiation Safety – Occupational Radiation Safety Cornerstone attribute of program and process associated with exposure/contamination controls and because it

resulted in the unintended internal exposure of five workers. It was determined to be of very low safety significance (Green) because it was not related to as low as is reasonably achievable (ALARA), it did not involve an overexposure or a potential for an overexposure, and because the licensees ability to assess dose was not compromised. A cross-cutting aspect in Human Performance, Procedure Adherence, was assigned for individuals failing to follow processes, procedures, and work instructions, in that workers did not follow the verbal and written instructions on the RWP to discuss the scope of work with RP prior to beginning the work. Radiation workers did not follow the verbal and written instructions provided on the RWP to discuss the work scope work and for RP to survey newly accessible areas during the work. [H.8] (Section 2RS1)

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at 100 percent power. On August 9, 2015, operators reduced power to 90 percent based on salt service water intake temperatures, then returned to 100 percent power the same day. On August 19, 2015, operators reduced power to approximately 50 percent to perform a thermal backwash of the main condenser and returned to 100 percent power on August 20, 2015. On August 22, 2015, the unit scrammed when the 1C inboard main steam isolation valve closed due to a nitrogen line leak. The unit returned to 100 percent power on August 27, 2015. The unit remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 sample)

External Flooding

a. Inspection Scope

During the week of September 7, 2015, the inspectors performed an inspection of the external flood protection measures for Entergy. The inspectors reviewed TS, procedures, design documents, and the UFSAR, Chapter 2.4.4, which depicted the design flood levels and protection areas containing safety-related equipment to identify areas that may be affected by external flooding. The inspectors conducted a general site walkdown of all external areas of the plant to ensure that Entergy had maintained flood protection barriers in accordance with design specifications. The inspectors also reviewed operating procedures for mitigating external flooding during severe weather to determine if Entergy planned or established adequate measures to protect against external flooding events. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04 – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'B' Standby gas treatment system (SGTS) while the 'A' SGTS was out of service on July 28, 2015 – July 29, 2015
- 'B' Reactor building closed cooling water (RBCCW) loop while the 'A' RBCCW loop was out of service on August 5, 2015

- 'A' and 'B' EDGs while the station blackout diesel generator and the shutdown transformer were out of service for maintenance and testing on August 26, 2015 – August 27, 2015
- High pressure coolant injection (HPCI) system while the reactor core isolation cooling system was out of service for planned maintenance on September 29, 2015

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, TS, CRs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Vital Motor Generator Room on July 7, 2015
- Turbine Building Feedwater Pump Area 'A' on July 30 and 31, 2015
- Turbine Building Turbine Deck West End on July 30 and 31, 2015
- Turbine Building Feedwater Pump Area 'C' on July 30 and 31, 2015
- Turbine Building Turbine Deck East End on July 30 and 31, 2015

b. Findings

No findings were identified.

.2 Fire Protection – Drill Observation (71111.05A – 1 sample)

a. Inspection Scope

The inspectors observed a fire brigade drill scenario conducted on August 12, 2015, that involved announced fire drill prep activities in the reactor building truck bay air lock. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that Entergy personnel identified deficiencies, openly discussed them in a self-critical manner during debrief, and took appropriate corrective actions as required. The inspectors evaluated specific attributes as follows:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of fire hoses
- Employment of appropriate fire-fighting techniques
- Sufficient fire-fighting equipment brought to the scene
- Effectiveness of command and control
- Search for victims and propagation of the fire into other plant areas
- Smoke removal operations
- Utilization of pre-planned strategies
- Adherence to the pre-planned drill scenario
- Drill objectives met

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Entergy's fire-fighting strategies.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 2 samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on September 1, 2015, which included a loss of the 'A' train of standby liquid control, and a failure of the 'A' recirculation pump seal requiring isolation of the pump and single loop operation. The loss of the A4 electrical bus resulted in the trip of the second recirculation pump and a manual reactor scram. Failure of multiple rods to insert required manual insertion to successfully shutdown the reactor under all conditions. Following the turbine trip, and loss of offsite power, the 'A' EDG failed to start, requiring operation of the station blackout diesel generator. Failure of the HPCI injection valve to open required cooldown with the safety relief valves. Subsequent to the development of an unisolable leak in the torus, an emergency depressurization was required. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified

the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

For the plant activities listed below, the inspectors observed and reviewed operator performance in the MCR. See Section 4OA3 for specific discussion of these activities. The inspectors reviewed operational and alarm response and implementation of procedural guidance. The inspectors also observed control room conduct and control of evolutions and events, in accordance with procedure EN-OP-115, "Conduct of Operations," Revision 14.

- Observed operator performance during surveillance testing of the A5 Vital Electrical Bus on August 6, 2015
- Reactor Plant Scram following the closure of 1C main steam isolation valve (MSIV) on August 22, 2015
- Reactor Plant startup following a forced outage on August 25, 2015

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Entergy staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- 345 kV System on September 1, 2015 - September 11, 2015
- MCR annunciators on September 8, 2015 - September 18, 2015

b. Findings

Introduction. Inspectors identified a Green NCV of 10 CFR 50.65 (a)(2), because Entergy did not adequately demonstrate that the performance of the MCR annunciators was effectively controlled through performance of appropriate preventive maintenance. Specifically, Entergy did not identify and properly account for functional failures of the MCR annunciators in February 2015 and May 2015, and did not recognize that the train exceeded its performance criteria and required a Maintenance Rule (a)(1) evaluation.

Description. Inspectors identified three functional failures of the MCR annunciator system that were not identified by Entergy:

- On February 15, 2015, a loss of the MCR annunciator system occurred due to low voltage from a power supply during the transfer to the 480V B6 bus from the alternate power supply to the normal power supply. The power supply failure resulted in the MCR annunciator system locking up when it failed to shift its power supply to the backup power supply. The power supply was replaced and Entergy identified the issue in CR 2015-1194
- On May 1, 2015, the MCR annunciator display terminal input buffer locked up, resulting in the controllers transferring back and forth, resulting in a loss of the MCR annunciator system function. Entergy identified the issue in CR 2015-4106 and the terminal was replaced to correct the issue
- On May 6, 2015, the MCR annunciator system primary and backup power supply settings were adjusted too low this caused the system to transfer between power supplies and again resulted in the loss of the MCR annunciator system function.

EN-DC-205, “Maintenance Rule Monitoring,” Revision 5, requires that monitoring be performed in a manner to support a timely (a)(1) evaluation. It requires that the number of functional failures be compared to the established performance criteria, and if performance criteria has been exceeded, initiate a CR and evaluate the affected SSC for (a)(1) classification. On September 22, 2015, Entergy initiated CR-2015-7986 and CR-2015-7988 to perform an (a)(1) evaluation based on the MCR annunciator system functional failures exceeding the designated performance criteria, based on inspectors’ questions.

Analysis. The inspectors determined that Entergy’s failure to identify the February 15, 2015, May 1, 2015, and May 6, 2015, MCR annunciator failures as functional failures, and as a result, failed to perform an evaluation of the system under 50.65(a)(1) to specify goals, corrective actions, and monitoring was a performance deficiency within Entergy’s ability to foresee and correct and should have been prevented. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, following the three failures of the main control annunciator panel in February 2015 and May 2015, Entergy did not identify the failures as functional failures, and consequently, did not establish goals and monitoring criteria in accordance with 10 CFR 50.65(a)(1). The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power.” The finding is of very low safety significance because the finding was not a design or qualification deficiency and did not represent a loss of safety function.

The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, in that the organization thoroughly evaluates issues to ensure that resolution addresses causes and extent of conditions commensurate with their safety significance. Specifically, Entergy identified all of the failures of the MCR annunciator system, however, Entergy did not include maintenance rule monitoring functions in the evaluation of the MCR annunciator system failures [P.2].

Enforcement. 10CFR 50.65(a)(1), requires, in part, that the holders of an operating license shall monitor the performance or condition of SSCs within the scope of the rule as defined by 10 CFR 50.65(b), against licensee-established goals in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. 10 CFR 50.65(a)(2) states, in part, that monitoring as specified in 10 CFR 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of a SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function. Contrary to the above, as of May 1, 2015, Entergy personnel did not monitor the performance or condition of the MCR annunciators against licensee-established goals in a manner sufficient to provide reasonable assurance that the annunciators were capable of fulfilling their intended functions. Entergy did not identify and properly account for maintenance rule functional failures of the MCR annunciators on February 15, 2015, May 1, 2015 and May 6, 2015, which demonstrated that the performance of the MCR annunciators was not being effectively controlled through the performance of appropriate preventative maintenance and, as a result, that goal setting and monitoring was required. Because this violation was of very low safety significance (Green) and has been entered into Entergy's corrective action program (CR 2015-7986 and CR-2015-7988), this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. (**NCV 05000293/2015003-01: Main Control Room Annunciators 10 CFR 50.65(a)(2) Not Met**)

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Entergy performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unplanned inoperability of the 'A' EDG on July 1, 2015
- Residual heat removal (RHR) valve interlock testing on July 8, 2015
- Unplanned maintenance on the 'A' EDG and the 'A' SGTS on July 28, 2015 – July 29, 2015

- Planned maintenance that involved the 'A' SGTS train and the 'E' salt service water pump on August 12, 2015

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions based on the risk significance of the associated components and systems:

- Suppression pool sludge calculation and determination of emergency core cooling system pump operability on June 11, 2015
- 'A' EDG inoperable due to failure of fuel rack trip mechanism on July 1, 2015
- Rerouting of 23 kV line above ground after an electrical fault impacted normal cabling on July 5, 2015
- 'A' EDG declared inoperable due to excessive reactive load oscillations during testing on July 28, 2015
- Drywall temperature (TE-8125-11) reading above operator logs trigger of 132F on August 4, 2015

The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to Entergy's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

1. Introduction. The inspectors identified a Green NCV of TS 3.5.F, "Minimum Low Pressure Cooling and Diesel Generator Availability," for failure to adequately perform TS SR 4.5.F.1 to determine that the 'B' EDG was not inoperable due to a common cause failure, or to perform the TS-specified EDG monthly surveillance test, within 24 hours of the time that operators determined that the 'A' EDG was inoperable. Specifically, on July 1, 2015, after the 'A' EDG was declared inoperable due to unexpected annunciator response during engine pre-start checks, and again on July 28, 2015, when the 'A' EDG was declared inoperable due to reactive load oscillations during a routine surveillance, Entergy performed an inadequate common cause failure determination that did not address the failure mechanism of the inoperable EDG, which had not yet been determined.

Description. Prior to amendment number 170, the Pilgrim TS stated, in part, when it was determined that one diesel generator is inoperable that the operable diesel generator shall be demonstrated to be operable immediately and daily thereafter until the inoperable diesel is repaired. On April 25, 1996, due to industry experience that indicates that repetitive testing can potentially place unnecessary demands and wear on an EDG, Pilgrim submitted proposed TS changes to the NRC which requested, in part, to reduce the requirement for immediate and daily testing of the operable EDG, and to instead allow for a determination that the operable EDG is not inoperable due to common cause failure. This request however did not eliminate the need for EDG testing, and stated in part that if a common cause failure cannot be ruled out, the redundant EDG will be tested to assure operability. As stated in Pilgrim's request, the elimination of the requirement for daily testing, and the reduction in the requirement for immediate testing, was consistent with guidance provided by the NRC in Generic Letter 93-05, which states in part that the other EDG should be tested unless the absence of any potential common mode failure can be demonstrated. On February 10, 1997, the NRC approved Pilgrim's request to delete the TS requirement for daily testing of the operable EDG when the other EDG becomes inoperable, stating instead that a determination must be made within 24 hours that a common cause failure does not exist for the operable EDG, or the diesel generator must be tested.

On July 1, 2015, at 00:12, operators were performing pre-startup checks of the 'A' EDG in accordance with procedure 8.9.1, "Emergency Diesel Generator and Associated Emergency Bus Surveillance." When the overspeed trip device was manually tripped in accordance with the surveillance procedure, operators recognized that they failed to receive the expected abnormal shutdown annunciator. The 'A' EDG was declared inoperable, CR 2015-6222 was initiated, and troubleshooting began with the initial focus on the belief that the shutdown relay had failed. TS SR 4.5.F.1, requiring the determination that the 'B' EDG was not inoperable due to common cause failure, was immediately signed off in the limiting condition for operation (LCO) tracker. The basis of crediting this surveillance requirement was a control room narrative log entry stating that the 'B' EDG had passed its most recent surveillance on June 16, 2015, that there had been no maintenance performed in the interim, and that the site had received no 10 CFR Part 21 notifications or vendor technical memos. There was no inspection performed on the 'B' EDG, no engineering evaluations that took into account either the failure mechanism or the symptoms that were observed on the 'A' EDG, nor was the monthly surveillance test performed on the 'B' EDG in accordance with TS SR 4.9.A.1.a. On July 2, 2015, at 11:58, approximately 36 hours after the 'A' EDG was declared inoperable, it was determined that the cause of the failure was a mechanical failure of the overspeed trip lever.

On July 28, 2015, at 09:05, operators were performing the monthly test of the 'A' EDG in accordance with procedure 8.9.1, "Emergency Diesel Generator and Associated Emergency Bus Surveillance." Upon loading the EDG, operators observed excessive reactive load oscillations. Operators immediately aborted the test and declared the 'A' EDG inoperable, initiated CR 2015-6780, and Entergy initiated troubleshooting. At 18:03 the same day, TS SR 4.5.F.1, requiring the determination that the 'B' EDG was not inoperable due to common cause failure, was signed off in the LCO tracker. As with the failure on July 1, the basis of crediting this SR was a control room narrative log entry stating that the 'B' EDG had passed its most recent surveillance on July 15, 2015, that there had been no maintenance performed in the interim, and that the site had received no 10 CFR Part 21 notifications or vendor technical memos. As before, there was no

inspection performed on the ‘B’ EDG, no engineering evaluations were performed that took into account either the failure mechanism or the symptoms that were observed on the ‘A’ EDG, nor was the monthly surveillance test performed on the ‘B’ EDG in accordance with TS SR 4.9.A.1.a. Troubleshooting on the ‘A’ EDG was unable to determine a specific cause; however, the failure modes analysis and troubleshooting team was able to eliminate all potential causes other than a stuck motor operated controller. Entergy was unable to confirm this most likely failure mode due to the fact that the controller had been cycled during the troubleshooting efforts, thereby eliminating the condition. Based on this conclusion, Entergy returned the ‘A’ EDG to service and successfully performed the monthly surveillance test, and the LCO was exited on July 29 at 23:15, approximately 38 hours after the ‘A’ EDG was declared inoperable.

In both cases, TS SR 4.5.F.1, requiring the determination that the ‘B’ EDG was not inoperable due to common cause failure, was credited before the actual cause of failure was known. The basis for crediting the SR did not discuss either the failure mechanism or the symptoms observed on the inoperable EDG, nor were any inspections or engineering evaluations performed prior to taking credit for the common cause determination. Additionally, while the review of 10 CFR Part 21 reports and vendor technical memos may provide some benefit in the later evaluation of whether or not the initial failure of the ‘A’ EDG shares common characteristics with previously identified failures in the industry as a whole, it does not aid in confirming that a common cause failure condition does not exist on both of Pilgrim’s EDGs, which due to the importance of emergency AC power to reactor safety, is the purpose of TS SR 4.5.F.1. This issue has been entered into the corrective action program as CR 2015-8073, and additional guidance has been provided to the operations crew in the form of an operations section standing order, pending permanent corrective actions.

Analysis. The inspectors determined that Entergy’s failure to determine that the ‘B’ EDG was not inoperable due to a common cause failure, or to perform the TS-specified EDG monthly surveillance test, within 24 hours in accordance with TS SR 4.5.F.1, was a performance deficiency that was within Entergy’s ability to foresee and correct, and should have been prevented. The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the operability of the ‘B’ EDG was not verified as required, either through determination that it was not inoperable due to a common cause failure or through performance of the monthly TS-required surveillance.

In accordance with IMC 0609.04, “Initial Characterization of Findings,” and Exhibit 2 of IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, and did not represent an actual loss of function of a single train for greater than its TS allowed outage time.

This finding had a cross-cutting aspect in the area of Human Performance, Conservative Bias, because Entergy did not use decision making practices that emphasized prudent choices over those that are simply allowed, or in this case those choices that were perceived to be allowed. Specifically, Entergy’s credited SR 4.5.F.1 based on an

administrative review instead of more deliberate actions or evaluations that would be necessary to confirm that a common cause condition did not exist. [H.14]

Enforcement. During any period when one EDG is inoperable, Pilgrim TS 3.5.F allows continued reactor operation during the succeeding 72 hours, provided that the remaining EDG is demonstrated to be operable in accordance with TS SR 4.5.F.1. TS SR 4.5.F.1 requires in part that, within 24 hours, a determination be made that the operable EDG is not inoperable due to a common cause failure, or that the monthly surveillance test be performed on the operable EDG in accordance with TS SR 4.9.A.1.a. If this requirement cannot be met, then the reactor shall be placed in the cold shutdown condition within 24 hours. Contrary to the above, on July 1, 2015, and again on July 28, 2015, after the 'A' EDG was declared inoperable, the 'B' EDG was not demonstrated to be operable in accordance with TS SR 4.5.F.1, in that, an adequate determination that the 'A' EDG was not inoperable due to a common cause failure was not made, nor was the monthly surveillance test performed on the 'A' EDG in accordance with TS SR 4.9.A.1.a. Consequently, with the requirements of TS SR 4.5.F.1 not met, the reactor was not placed in the cold shutdown condition within 24 hours. Because this violation was of very low safety significance (Green) and Entergy entered this issue into their corrective action program as CR 2015-8073, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 05000293/2015003-02, Inadequate EDG Common Cause Determinations Result in TS Violation)**

2. Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when Entergy did not adequately assess the operability of the shutdown transformer as required by EN-OP-104, "Operability Evaluation Process." Specifically, Entergy did not evaluate changes to the 23 kV line supplying the shutdown transformer that resulted in the shutdown transformer incorrectly being called operable.

   Description. On July 4, 2015, Entergy experienced a loss of the line 108 23 kV line that normally provides power to the shutdown transformer. The shutdown transformer was declared inoperable, based on a loss of the 23 kV line offsite. On July 5, 2015, power was initially restored by the power distributor, Eversource, in a configuration contrary to the UFSAR, with power being provided by above ground lines from the alternate 23 kV line, line 72. Entergy entered procedure EN-OP-104, "Operability Determination Process," to evaluate the operability of the shutdown transformer based on the configuration of the 23 kV line. The UFSAR states that the 23 kV line shall be buried when beneath the 345 kV lines. The jumpers installed on the 23 kV line placed the component in a configuration not in accordance with the UFSAR.

   EN-OP-104 provides a process to assess operability and functionality when degraded or non-conforming conditions affecting SSCs are identified. EN-OP-104, Section 3.16 defines a non-conforming condition as the failure of a SSC to meet the current licensing basis, which includes the UFSAR. The procedure also defines a compensatory measure in Section 3.2.a as an action that restores an inoperable SSC to an operable but degraded or non-conforming status. Section 3.2.b provides examples of what compensatory measures can include temporary modifications and operating procedure changes. EN-OP-104, Section 3.19 defines the different codes for operability classifications. Operable-DNC (degraded/non-conforming) requires no compensatory actions to maintain the SSC in an operable but degraded or non-conforming condition. Operable – Comp Meas (compensatory measure) is an operable but degraded or non-

conforming condition for a SSC that requires a compensatory measure in order to return to or maintain an operable status.

Inspectors identified that Entergy incorrectly selected Operable-DNC, rather than Operable-Comp Meas. The result of the incorrect classification resulted in Entergy not entering the modification screening procedures EN-LI-100, "Process Applicability Determination," and EN-DC-163, "Temporary Modifications." Had the station correctly selected Operable-Comp Meas, EN-OP-104, steps 5.7.2.b and 5.7.2.c would apply, and they require that interim compensatory measures be evaluated per EN-LI-100 and if the compensatory measure would require NRC approval, then NRC approval shall be received prior to implementation of the compensatory measure. NRC approval was required to implement the compensatory measure (refer to section 1R18). Entergy credited the compensatory measure of temporary above ground jumpers to the 23 kV line powering the shutdown transformer, which resulted in an inoperable component incorrectly being declared operable. The TS allowed outage time of seven days for the shutdown transformer was not exceeded, because the 23 kV line was restored to its original configuration on July 7, 2015. The shutdown transformer was available with the temporary jumpers installed on the 23 kV line, but not operable.

During the operability determination process, engineers referenced a previous operability evaluation in 2004 (CR 2004-2237) that stated that a similar condition was Operable-DNC. Engineers and operators relied on an incorrect previous evaluation in the response to the July 5, 2015, configuration. Entergy had an opportunity to identify that the 23 kV line being aboveground met the procedural requirements of Operable-Comp Meas because a full operability determination was performed for the July 5, 2015 alignment.

Analysis. Inspectors determined that Entergy did not adequately assess the operability of the shutdown transformer as required by EN-OP-104, "Operability Determination Process." Specifically, Entergy did not evaluate changes to the 23 kV line supplying the shutdown transformer that resulted in the shutdown transformer incorrectly being declared operable was a performance deficiency that was within Entergy's ability to foresee and correct. This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a modification was made to the site, as described in the UFSAR that was unrecognized by Entergy during the operability determination process and resulted in the incorrect operability determination for the shutdown transformer.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, and did not represent actual loss of a safety function of a single train for greater than its TS allowed outage time.

This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, in that individuals did not recognize and plan for the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes.

Specifically, personnel did not fully evaluate the change to the 23 kV line, and instead relied on a previous incorrect operability determination to justify declaring the shutdown transformer operable. [H.12]

Enforcement. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that "activities affecting quality shall be prescribed by documented instructions, procedures, or drawings… and shall be accomplished in accordance with these instructions, procedures, or drawings." Procedure EN-OP-104, "Operability Determination Process," Revision 9, states, in part, that "interim compensatory measures be evaluated per EN-LI-100 and if the compensatory measure would require NRC approval, then NRC approval shall be received prior to implementation of the compensatory measure." Contrary to this, on July 7, 2015, Entergy implemented interim compensatory measures to restore the shutdown transformer to operable status without evaluation and the compensatory measures would have required NRC approval. Because this finding is of very low safety significance and has been entered into Entergy's corrective action program as CR 2015-7787, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000293/2015003-03, Inadequate Operability Assessment of the Shutdown Transformer)**

1R18 Plant Modifications (71111.18 – 1 sample)

Temporary Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification to the 23 kV line supplying the shutdown transformer to determine whether the modification affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation of the modification to verify that the temporary modifications did not degrade the design bases, licensing bases, and performance capability of the affected systems.

b. Findings

Introduction. Inspectors identified a Severity Level IV NCV of 10 CFR 50.59 "Changes, Tests, and Experiments," in that Entergy implemented a change to its facility that required a TS change without seeking a license amendment as required by 10 CFR 50.90. Specifically, the inspectors identified that Entergy altered the configuration of the 23 kV line to the shutdown transformer contrary to the UFSAR and that configuration required a TS change through a license amendment.

Description. UFSAR section 8.3 states, in part, that the 23 kV line shall be underground at the location where it crosses underneath the 345 kV transmission lines. The UFSAR describes how 10 CFR 50, Appendix A, General Design Criterion (GDC) 17, Electrical Power Systems, is met by having a preferred AC offsite power source, the startup transformer and associated 345 kV lines, and a secondary AC offsite power source, the shutdown transformer, and associated 23 kV line. GDC 17 states, in part, "electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits designed and located so as to minimize

to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions."

On July 4, 2015, Entergy experienced a loss of the 23 kV line that provides power to the shutdown transformer. On July 5, 2015, power was initially restored by the power distributor, Eversource, by installing temporary jumpers in a configuration contrary to the UFSAR. Operators declared the shutdown transformer was operable but degraded/non-conforming based on the restoration of power to the shutdown transformer. When the configuration of the 23 kV line was changed, Entergy failed to recognize that the change to the facility met the definition of a compensatory measure, as described in EN-OP-104, "Operability Determination Process," Revision 9, which requires the change to be evaluated using EN-LI-100, "Process Applicability Determination," Revision 16, to determine if a 10 CFR 50.59 evaluation is necessary. This violation is documented in Section 1R15 (NCV 05000293/2015003-03, Inadequate Operability Assessment of the Shutdown Transformer). Power remained available to the shutdown transformer in the aboveground configuration of the 23 kV line.

On July 5, 2015, inspectors identified that a license amendment was not requested prior to Eversource installing temporary jumpers, which placed the 23 kV line in a condition contrary to the UFSAR once the shutdown transformer was declared operable. Inspectors also identified that a license amendment was not requested for a similar line configuration allowed by procedure 2.4.A.23, "Loss/Degradation of 23 kV Line," on May 30, 2006. Procedure 2.4.A.23, step 4.2.1.b, allowed an alternate aboveground 23 kV line (line 71) to be placed in operation and the shutdown transformer considered operable, but degraded/non-conforming. The normal 23 kV power source to the shutdown transformer is line 108, which does not pass beneath the 345 kV lines.

Inspectors reviewed the Pilgrim licensing basis and determined that there was a reasonable likelihood that the evaluation would have required NRC approval prior to implementation, based on being outside of the current licensing basis such that TS requirements were impacted. Specifically, the 23 kV line is designated as an independent power source from the 345 kV lines. By removing the independence of the offsite power sources, a change to the TS would be required. Entergy entered this issue into the corrective action program under CR 2015-7787. Entergy issued a standing order and is performing a causal evaluation and updating site procedures.

Analysis. Inspectors determined that Entergy's realignment of the 23 kV power line to the shutdown transformer prior to submitting a license request as specified in 10 CFR 50.59, "Changes, Tests, and Experiments," was a performance deficiency that was reasonably within Entergy's ability to foresee and correct and should have been prevented. The performance deficiency was dispositioned using the traditional enforcement process because it could potentially impede or impact the regulatory process. In accordance with the NRC Enforcement Manual, Revision 9, Part II, Enforcement of 10 CFR 50.59 and Related FSAR, Sections 2.1.3.E.1 and 2.1.3.E.6, this violation was determined to be more than minor because Entergy failed to request a license amendment prior to implementation.

In accordance with the NRC Enforcement Policy Section 6.1, the inspectors used the SDP to inform the severity of the 10 CFR 50.59 violation, based upon the impact on the offsite AC power sources. As referenced in Section 1R15, the technical aspects of this issue screen to Green. Accordingly, per Section 6.1.d of the NRC Enforcement Policy,

the severity of the violation of 10 CFR 50.59 was determined to be Severity Level IV, as it resulted in conditions evaluated as having very low safety significance (Green) by the SDP.

There is no cross-cutting aspect associated with this violation because cross-cutting aspects are not assigned to tradition enforcement violations.

Enforcement. 10 CFR 50.59, "Changes, Tests, and Experiments," Section (c)(1) states, in part, a licensee may make changes in the facility as described in the final safety analysis report (as updated), make changes in the procedures as described in the final safety analysis report (as updated), and conduct tests or experiments not described in the final safety analysis report (as updated) without obtaining a license amendment pursuant to Sec. 50.90 only if a change to the TS incorporated in the license is not required.

Contrary to the above, on May 30, 2006, and July 5, 2015, Entergy made a change to its Pilgrim facility as described in the UFSAR that required a change to the TS without obtaining a license amendment pursuant to 10 CFR 50.90. Specifically, Entergy realigned its 23 kV power line to the shutdown transformer without obtaining a license amendment. The 23 kV line is designated as an independent power source from the 345 kV lines. By removing the independence of the offsite power sources, a change to the TS was required. Entergy did not recognize that the change caused Entergy to be outside of its current licensing basis such that TS requirements were impacted, which requires a license amendment. Entergy is performing a causal analysis, updating required procedures, and issued a standing order to ensure the site remains in TS compliance with only the 23 kV line 108 able to supply power to maintain the shutdown transformer operable.

In accordance with the NRC Enforcement Policy Section 6.1, this violation was classified as a Severity Level IV violation because the underlying technical issue was evaluated as having very low safety significance by the SDP. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was Severity Level IV and was entered into the Entergy corrective action program (CR 2015-7787). **(NCV 05000293/2015003-04, Failure to Provide 10 CFR 50.59 Evaluation Associated with Offsite Power Alignment)**

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- 'A' EDG relay limit switch adjustment and trip lever replacement on July 3, 2015
- Troubleshooting and repair of the 'A' EDG due to reactive load oscillations on July 29, 2015
- Replacement of the 'A' RBCCW suction spool flange bolting on August 5, 2015
- Overhaul of 'A' SGTS AO-N-108 & AO-N-99 damper actuators on August 10, 2015
- Troubleshooting of failure of the reactor high pressure instrument PT263-51C to operate on August 22, 2015
- Repairs to failed instrument air/nitrogen line to the 1C MSIV on August 23, 2015

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

Forced Outage 21-1

a. Inspection Scope

The inspectors reviewed the outage schedule and shutdown risk assessments for a forced outage performed from August 22 through August 26, 2015. The outage was performed following a reactor scram in response to a closure of the 'C' Inboard MSIV. During this outage, the inspectors observed plant shutdown and startup, as well as the outage activities listed below:

- Cold and hot shutdown temperature control
- Shutdown risk assessment and risk management
- Implementation of TS
- Outage control center activities
- Plant startup
- Licensee identification and resolution of problems.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 3 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TS, the UFSAR, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- RHR Shutdown Cooling Valve Interlock Test on July 8, 2015
- Scram discharge instrument volume level and rod block functional testing activities on July 29, 2015
- HPCI comprehensive operability test on August 13, 2015

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on September 1, 2015, which required emergency plan implementation by an operations crew. Entergy planned for this evolution to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weakness and deficiencies in the crew's performance and ensure that Entergy evaluators noted the same issues and entered them into their corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

During May 4 - 7, 2015, the inspectors reviewed Entergy's performance in assessing and controlling radiological hazards in the workplace during the RFO. In office reviews were conducted the week of September 14 – 18, 2015. The inspectors used the requirements contained in 10 CFR 20, TSs, applicable RGs, and the procedures required by TSs as criteria for determining compliance.

Radiological Hazards Control and Work Coverage

The inspectors evaluated radiological surveys, air sample results, personnel contamination surveys, whole body counts, and dose assessments of radiological work activities during the RFO. The inspectors assessed whether posted surveys, RWPs,

worker radiological briefings, the use of continuous air monitoring, and dosimetry monitoring were consistent with the present conditions.

b. Findings

Introduction. The inspectors identified a self-revealing Green NCV of TS 5.4.1, Procedure compliance associated with RG 1.33, Appendix A. Specifically, during Pilgrim RFO 20, radiation workers did not comply with RWP instructions to "Contact Radiation Protection prior to each entry to discuss work scope" and to allow for "RP survey when accessible surfaces are exposed."

Description. On April 28, 2015, Entergy contactors were working under RWP 2015530 for work inside A and B main condensers to perform condenser expansion joint gasket replacement. The contractors were briefed by the RP technician on the precautions, instructions, and the ALARA controls for the work. The contractor supervisor discussed the work scope with RP indicating that the work crew was going to take measurements on the condenser expansion joint gasket inside the A and B main condensers. Based on the radiological conditions and work scope specified, RP prescribed a single set of protective clothing requirement with no respiratory protection for the work. The workers complied with these requirements and performed the measurements inside the A and B main condensers. After taking the measurements and without notifying RP first, the workers then proceeded to remove the large rubber boot seal, cut the condenser expansion joint gasket into sections, and carry the pieces to the ladder on the A main condenser work platform.

After removing the 'A' condenser expansion joint gasket, the ten workers proceeded to exit the radiological control area when they alarmed the personnel contamination monitors. Entergy immediately stopped work, conducted a safety meeting between RP and the Entergy contractors, performed surveys on the accessible surfaces, and prescribed respiratory protection requirements for the remaining work without further incident.

The ten affected individuals were decontaminated following the event and whole body counts were performed on eight of the ten individuals prior to release from the radiological control area. Five of the eight workers were released with low levels of radioactive contamination detected on whole body counts and were counted again over the next several days to provide additional monitoring for dose assessment evaluations. This monitoring determined that the five workers received internal exposures of 2 to 8 mrem committed effective dose equivalent due to the event. This was a small fraction of the annual occupational dose limit of 5,000 mrem per year.

The follow-up contamination surveys of the rubber condenser expansion joint gasket exhibited smearable contamination levels of 200,000 dpm/100 cm^2 - 56 mRad/hr at 2". These levels would have required respiratory protection by Entergy procedure and their use could have precluded the unintended internal exposures that resulted from this event.

Analysis. Failure to comply with verbal and written RWP instructions to "Contact Radiation Protection prior to entry to discuss the work scope" and to allow for "RP survey when accessible surfaces are exposed," as required by Pilgrim RWP 2015530, Revision 1, Task 1, was a performance deficiency that was reasonably within Entergy's

ability to foresee and correct. The inspectors determined that the performance deficiency was more than minor because it affected the Radiation Safety – Occupational Radiation Safety Cornerstone. Specifically, the program and process attribute of exposure/contamination controls, because the performance deficiency resulted in the unintended internal exposure of five workers. Traditional enforcement does not apply because the issue did not have any actual safety consequences or the potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. The finding was assessed using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated June 2, 2011, and was determined to be of very low safety significance (Green) because: it was not related to ALARA; did not result in an overexposure or a substantial potential for overexposure; and did not compromise the licensee's ability to assess dose. The estimated internal doses to the workers were a small fraction of the annual occupational dose limit.

A cross-cutting aspect in the area of Human Performance, Procedure Adherence, was assigned for individuals failing to follow processes, procedures, and work instructions. Radiation workers did not follow the verbal and written instructions provided on the RWP to discuss the work scope work and for RP to survey newly accessible areas during the work. [H.8]

Enforcement. TS 5.4.1, "Procedures," requires in Section 6.8.1, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of RG 1.33, Revision 2, February 1978. RG 1.33, Rev. 2, Quality Assurance Program Requirements (Operation), recommends in Appendix A, Section 7. e. (1) that procedures for access control to radiation areas, including a RWP system, be established. Entergy procedure EN-RP-100, "Radiation Worker Expectations," Section 5.4, RWP step [1](a) states "obey verbal and written instructions which RP personnel provide during RWP briefings and during work." RWP 2015530, Revision 1, Task 1, requires the workers to "Contact Radiation Protection prior to entry to discuss the work scope" and to allow for "RP survey when accessible surfaces are exposed." Contrary to the above, workers signed in on RWP 2015530, Revision 1, Task 1, prior to entry, did not discuss the full work scope and did not allow for RP survey when accessible surfaces were exposed. Specifically, workers did not inform RP prior to the condenser expansion joint gasket removal work or notify RP to survey newly accessible surfaces when the condenser expansion joint gasket was removed. Because this violation was of very low safety significance (Green) and was entered into Entergy's corrective action program as CR-PNP-2015-07577, this violation is being treated as a NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000293/2015003-05, Failure to Comply with RWP Instructions to Contact RP Prior to Condenser Expansion Joint Gasket Removal)**

Cornerstone: Public Radiation Safety (PS)

2RS5 Radiation Monitoring Instrumentation (71124.05 – 1 sample)

a. Inspection Scope

The inspectors reviewed performance in assuring the accuracy and operability of radiation monitoring instruments used for effluent monitoring to protect the public. The inspectors used the requirements in 10 CFR 20, 10 CFR 50, Appendix I; TS; Offsite

Dose Calculation Manual (ODCM); RGs; applicable industry standards; and procedures required by TS as criteria for determining compliance.

Calibration and Testing Program

For the gaseous and liquid effluent monitoring instruments the inspectors reviewed the current detector and electronic channel calibration, functional testing results, and alarm set-points.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 – 1 sample)

a. Inspection Scope

The inspectors reviewed the treatment, monitoring, and control of radioactive gaseous and liquid effluents. The inspectors used the requirements in 10 CFR 20; 10 CFR 50, Appendix I; TS; ODCM; applicable industry standards; and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors conducted in-office review of Pilgrim's 2014 and 2013 annual radioactive effluent and environmental reports, radioactive effluent program documents, UFSAR, ODCM, and applicable event reports.

Walk-downs and Observations

The inspectors walked down the gaseous and liquid radioactive effluent monitoring systems to assess the material condition and verify proper alignment according to plant design. The inspectors also reviewed radiation monitoring system surveillance records and the routine processing and discharge of gaseous and liquid radioactive wastes.

Sampling and Analyses

The inspectors reviewed: radioactive effluent sampling activities, representative sampling requirements; compensatory measures taken during effluent discharges with inoperable effluent radiation monitoring instrumentation; and the results of the inter-laboratory and intra-laboratory comparison program.

Effluent Flow Measuring Instruments

The inspectors reviewed the methodology used to determine the radioactive effluent stack and vent flow rates to verify that the flow rates were consistent with TS/ODCM and UFSAR values.

Air Cleaning Systems

The inspectors reviewed radioactive effluent discharge system surveillance test results based on TS acceptance criteria.

Dose Calculations

The inspectors reviewed: changes in dose values from the previous annual radioactive effluent release reports; several liquid and gaseous radioactive waste discharge permits; scaling methods for hard-to-detect radionuclides; ODCM changes; land use census changes; public dose calculations (monthly, quarterly, annual); and records of abnormal gaseous or liquid radioactive releases.

Groundwater Protection Initiative Implementation

The inspectors reviewed: groundwater monitoring results; changes to the groundwater protection initiative program since the last inspection; anomalous results or missed groundwater samples; leakage or spill events including entries made into the decommissioning files (10 CFR50.75(g)); and Entergy's evaluation of any positive groundwater sample results including appropriate stakeholder notifications and effluent reporting requirements.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with the radioactive effluent monitoring and control program were identified at an appropriate threshold and properly addressed in Entergy's corrective action program.

b. Findings

No findings identified.

2RS7 Radiological Environmental Monitoring Program (REMP) (71124.07 - 1 sample)

a. Inspection Scope

The inspectors reviewed the REMP to validate the effectiveness of the radioactive gaseous and liquid effluent release program. The inspectors used the requirements in 10 CFR 20; 40 CFR 190; 10 CFR 50, Appendix I; TS; ODCM; and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed: 2014 and 2013 annual radiological environmental operating reports; REMP program audits; ODCM changes; land use census; and inter-laboratory comparison program results.

Onsite Inspection

The inspectors reviewed and/or observed the following items:

- Sample collection, monitoring, and dose measurement stations namely, thermoluminescent dosimeters and air monitoring
- Calibration and maintenance records for air sample and dosimetry measurement equipment
- Environmental sampling of the effluent release pathways specified in the ODCM including surface water, groundwater, and fish
- Meteorological tower and meteorological data readouts
- Meteorological instrument operability status and calibration results
- Missed and anomalous environmental samples identified, resolved, and reported in the annual radioactive environmental monitoring report
- Positive environmental sample assessment results
- The groundwater monitoring program as it applies to selected potential leaking SSCs and early leak detection
- 10 CFR 50.75(g) records of leaks, spills, and remediation since the previous inspection
- Changes to the ODCM due to changes to the land use census, long-term meteorological conditions, and/or modifications to the environmental sample stations
- Environmental sample laboratory analysis results, and measurement detection sensitivities
- Results of the laboratory quality control program audit, and the inter-and intra-laboratory comparison program results

Identification and Resolution of Problems

The inspectors evaluated whether problems associated with the REMP were identified at an appropriate threshold and properly addressed for resolution in Entergy's corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index (3 samples)

a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of July 1, 2014, through June 30, 2015:

- High pressure injection system (HPCI)
- Heat removal system (Reactor Core Isolation Cooling)
- Residual heat removal system (RHR)

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors also reviewed Entergy's operator narrative logs, CRs, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended CR screening meetings.

b. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 2 samples)

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Entergy's follow-up actions related to the events to assure that Entergy implemented appropriate corrective actions commensurate with their safety significance.

- Operator response to a reactor scram following the closure of the 1C MSIV on August 22, 2015

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000293/2015-005-00: Degrading Condenser Vacuum Resulting in Manual Reactor Scram

The inspectors reviewed Entergy's actions and reportability criteria associated with LER 05000293/2015-005-00, which is addressed in CR-2015-5197. On May 22, 2015, while performing a startup following an RFO, condenser vacuum degraded, requiring a manual scram. The cause of the degrading vacuum was the combination of plant conditions and system lineups that exceeded the capability of the offgas system, specifically the operation on two of the four waterboxes due to a potential seawater leak, high air inleakage to the condenser, and extended operation on the main turbine bypass valves. Entergy performed a root cause evaluation and determined that plant staff did not have adequate knowledge of system capabilities and limitations, and therefore site procedures did not contain sufficient detail to prevent operation outside of these limitations. Entergy has initiated corrective actions to establish operation limits for the offgas system and to incorporate these limitations into Pilgrim operating and abnormal procedures. The inspectors determined that Entergy's failure to provide adequate guidance in site procedures was a performance deficiency, and the relevant enforcement actions are documented in NRC Inspection Report 05000293/2015010. This LER is closed.

4OA5 Other Activities

.1 Temporary Instruction 2515/190 – Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations

a. Inspection Scope

The inspectors independently verified that samples of Entergy's assumptions used in their interim flood hazard re-evaluation report reflected actual plant conditions. Visual inspection of the installed flood protection features was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed. Flood protection feature functionality was determined using either visual observation or by review of other documents. The inspectors verified that identified issues were entered into Entergy's corrective action program.

b. Findings

No findings were identified.

.2 Repetitive Degraded Cornerstone Column (Column 4) Follow-Up Activities

Background

As described in the mid-cycle assessment letter, dated September 1, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15243A259), the NRC determined that performance at Pilgrim was in the Repetitive Degraded

Cornerstone Column (Column 4) of the NRC's Action Matrix, following completion of the final significance determination of a White finding under the Mitigating Systems Cornerstone. This final significance determination is referenced in a separate letter, also issued on September 1, 2015 (ADAMS Accession No. ML15230A217).

Completed Activities

On October 29, 2015, NRC regional management met with Pilgrim management to discuss the station's progress in addressing their performance deficiencies, as well as the NRC's plans related to conduct of the Inspection Procedure 95003 supplemental inspection.

Also on October 29, 2015, the NRC completed its quarterly performance review of Pilgrim, including a review of the third quarter 2015 performance indicators and inspection results. Based on the results of this review, the NRC has determined that Pilgrim continues to operate safely, and that additional regulatory actions beyond those prescribed for plants in Column 4 (per the NRC's Action Matrix) are not required at this time.

Planned Activities

Inspectors will complete three operations-focused problem identification and resolution samples in the fourth quarter of 2015. The purpose of these samples, in part, is to focus on corrective actions for operations-related issues identified during the special inspection team in March 2015. The results of these focused samples will be documented in the fourth quarter 2015 integrated inspection report, which will be issued on or before February 12, 2016.

In January 2016, the NRC will conduct the first phase of Inspection Procedure 95003 at Pilgrim. This inspection will review various aspects of the station's corrective action program to determine whether Pilgrim continues to operate safely and whether additional regulatory actions are required to arrest declining performance. The results of this inspection will be documented in a stand-alone inspection report, which will also be issued in the first quarter of 2016.

4OA6 Meetings, Including Exit

On October 22, 2015, the inspectors presented the inspection results to Mr. John Dent, Site Vice President, and other members of the Pilgrim staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Dent	Site Vice President
G. Blankenbiller	Chemistry Manager
T. Bordelon	Performance & Improvement Manager
P. Beabout	Security Manager
S. Brewer	Radiation Protection Supervisor
G. Blankenbiller	Chemistry Manager
R. Byrne	Senior Licensing Engineer
D. Calabrese	Emergency Preparedness Manager
B. Chenard	Engineering Director
F. Clifford	Operations Support Manager
S. Asplin	Senior System and Components Engineer
J. Cotter	Operations Training Supervisor
P. Doody	Senior Design Engineer
P. Harizi	Senior Design Engineer
M. Jacobs	Manager of Nuclear Oversight
M. Landry	Senior Systems and Components Engineer
C. Littleton	Senior Lead Design Engineer
J. Macdonald	Senior Operations Manager
E. McCaffrey	System and Components Engineering Supervisor
R. McGaha	Code & Programs NDE Services
R. Morris	Senior System and Components Engineer
J. Moylan	Manager, Project & Maintenance Services
D. Noyes	Director of Regulatory & Performance Improvement
J. O'Donnell	Senior System and Components Engineer
J. Ohrenberger	Senior Maintenance Manager
E. Perkins	Regulatory Assurance Manager
R. Pardee	Code & Programs Engineer
M. Perry	Systems Engineer
N. Reece	System and Components Engineer
J. Sabina	IST Program Engineer
M. Thornhill	Radiation Protection Supervisor
S. Verrochi	General Manager Plant Operations
A. Zelie	Radiation Protection Manager

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000293/2015003-01	NCV	Main Control Room Annunciators 10 CFR 50.65(a)(2) Not Met (1R12)
05000293/2015003-02	NCV	Inadequate EDG Common Cause Determinations Result in TS Violation (1R15)

05000293/2015003-03	NCV	Inadequate Operability Assessment of the Shutdown Transformer (1R15)
05000293/2015004-04	NCV	Failure to Provide 10 CFR 50.59 Evaluation Associated with Offsite Power Alignment (1R18)
05000293/2015003-05	NCV	Failure to Comply with RWP Instructions to Contact RP Prior to Condenser Expansion Joint Gasket Removal (2RS1)

Closed

05000293/2015-005-00	LER	Degrading Condenser Vacuum Resulting in Manual Reactor Scram (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
5.2.2, High Winds (Hurricane), Revision 39
2.1.37, Coastal Storm – Preparations and Actions, Revision 38
2.1.42, Operation during Severe Weather, Revision 28

Condition Reports (* NRC Identified)
2012-4378 2015-7736 2015-7720* 2015-7721*

Miscellaneous
Final Safety Analysis Report, Section 2.4.4
Pilgrim Individual Plant Examination for External Events (IPEEE)

Section 1R04: Equipment Alignment

Procedures
2.2.8, Standby AC Power System (Diesel Generators), Revision 108
EN-OP-119, Protected Equipment Postings, Revision 7
8.C.4, Routine Running of Standby Gas Treatment System, Revision 24
2.2.50, Attachment 2, Valve Checklist, Revision 69
2.2.30, Reactor Building Closed Cooling Water (RBCCW) System, Revision 77
2.2.32, Salt Service Water System (SSW), Revision 90
2.2.21, High Pressure Coolant Injection System (HPCI), Revision 85

Condition Reports
2015-06810

Section 1R05: Fire Protection

Procedures
5.5.2, Special Fire Procedure, Attachment 11, Turbine Bldg. El. 51, Revision 52
EN-TQ-125, Fire Brigade Drills, Rev. 2

Drawings
A319SH1, Reactor & Turbine Building Floor Plan El. 51' – 0" & 74' – 8" Fire Barrier System, Revision E7
A319SH2, Reactor & Turbine Building Floor Plan El. 51' – 0" & 74' – 8" Fire Barrier System, Revision E7

Condition Reports
2015-07069 2015-06854 2015-06855 2015-06894

Miscellaneous
89XM-1-ER-Q, Updated Fire Hazard Analysis, Revision 13
Fire Area 1.9, Fire Zone 3.5, Vital Motor Generator Set Room, Revision 13
Fire Area 1.10, Fire Zone 2.11, Feedwater Pumps "A" Area, Revision 13
Fire Area 1.10, Fire Zone 2.11A, Turbine Deck – West End, Revision 13
Fire Area 1.10, Fire Zone 2.12, Feedwater Pumps "C" Area, Revision 13
Fire Area 1.10, Fire Zone 2.12A, Turbine Deck – East End, Revision 13
EN-DC-161, Control of Combustibles, Revision 12
ECN 31697

Section 1R11: Licensed Operator Requalification Program

Procedures
2.4.22, Failure of Recirculation Pump Seal, Revision 18
2.4.17, Recirculation Pump(s) Trip, Revision 46
2.4.165, Reactor Core instability, Revision 3
2.4.A.4, Loss of 4160V Bus A4, Revision 3
5.3.23, Alternate Rod Insertion, Revision 32
EOP-1, RPV Control, Revision 14
EOP-2, RPV Control Failure to Scram, Revision 14
EOP-3, Primary Containment Control, Revision 11
EOP-4, Secondary Containment Control, Revision 11
EOP-17, Emergency RPV Depressurization, Revision 6
3.M.3-47, Load Shed Operational/Functional Test – Critical Maintenance, Revision 85
1.5.22, Risk Assessment Process, Revision 25
EN-OP-115, Conduct of Operations, Revision 15
EN-HU-106, Procedure and Work Instruction Use and Adherence, Revision 3
EN-OP-116, Infrequently Performed Tests or Evolutions, Revision 12

Miscellaneous
LORT/NRC Simulator Exam Scenario SES-2011-04, Revision 2, dated 8/11/15

Section 1R12: Maintenance Effectiveness

Procedures
EN-LI-118, Attachment 9.11, Revision 18
EN-DC-204, Maintenance Rule Scope and Basis, Revision 3
EN-DC-205, Maintenance Rule Monitoring, Revision 5
EN-DC-205, Maintenance Rule Monitoring, Revision 5
EN-DC-206, Maintenance Rule (A)(1) Process, Revision 3

Condition Reports

2013-1221	2015-7988	2015-1194
2013-5208	2015-4106	2013-5332
2015-7986	2015-4393	2015-0558

Miscellaneous

Maintenance Rule Basis Document for Main Control Room Annunciator System, Revision 1
345 KV System Health Reports
345 KV, main/Unit Aux/Startup Transformers, Generator Excitation, and Iso-phase Bus Systems Maintenance Rule Basis Document

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

2.2.8, Standby AC Power System (Diesel Generators), Revision 108
1.5.22, Risk Assessment Process, Revision 25
EN-WM-105, On line Risk Management, Revision 11

Condition Reports

2015-6396	2015-6797	2015-7078
2015-6222	2015-6820	
2015-6780	2015-7055	

Miscellaneous

Work Schedule and On Line Risk Assessment for week of June 28, 2015
Work Schedule and On Line Risk Assessment for week of July 5, 2015
Work Schedule and On Line Risk Assessment for week of July 26, 2015
Work Schedule and On Line Risk Assessment for week of August 9, 2015
Narrative Logs
Protected Equipment List

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

2.2.8, Standby AC Power System (Diesel Generators), Revision 107
1.3.34, Operations Administrative Policies and Processes, Revision 135
8.C.34, Operations Technical Specifications Requirements for Inoperable Systems/Components, Revision 60
EN-OP-104, Operability Determination Process, Revision 9
EN-LI-118, Cause Evaluation Process, Revision 21
2.2.8, Standby AC Power System (Diesel Generators), Revision 107
8.C.34, Operations Technical Specifications Requirements for Inoperable Systems/Components, Revision 60
EN-OP-104, Operability Determination Process, Revision 9

Condition Reports (* NRC Identified)

2015-6313	2015-4597	2015-6222
2015-6222	2015-6907	2015-6279
2015-6279	2015-6870	2015-8073*

Calculations
M734, RHR and Core Spray Pump Suction Strainer Debris Head Loss NPSH Evaluation, Revision 2
M897, Pilgrim nuclear Plant Emergency Core Cooling System Strainer Performance Analysis, Revision 3
M898, Pilgrim Nuclear Power Plant Estimation of Debris Generation and Transport to the Suppression Pool Following a LOCA, Revision 1

Miscellaneous
RG 1.82, Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident, Revision 4
LCO tracking module
SDBD – 01, Automatic Depressurization System (ADS) Main Steam System (MSS), Rev. 1
TDBD- 103, Design Basis Document for Environmental Qualification, Rev. 1
Equipment Qualification Data File for ZE203, Rev. 4
Equipment Qualification Evaluation Sheet for ZE203, Rev. 9
LCO tracking module
BECo Letter 96-040, Proposed Technical Specification Changes
Amendment No. 170 to facility operating license
Amendment No. 179 to facility operating license
Pilgrim Technical Specifications
Generic Letter 85-15
Generic Letter 93-05

Section 1R18: Plant Modifications

Procedures
2.4.A.23, Loss/Degradation of 23kV Line, Revision 22
NEI 96-07, Guidelines for 10 CFR 50.59 Evaluations, Revision 1
EN-OP-104, Operability Determination Process, Revision 9
EN-DC-136, Temporary Modifications, Revision 12
EN-LI-100, Process Applicability Determination, Revision 16
EN-OP-104, Operability Determinations, Revision 1

Condition Reports
2005-04484 2015-7787 2015-6313

Section 1R19: Post-Maintenance Testing

Procedures
8.9.1 Emergency Diesel Generator and Associated Emergency Bus Surveillance, Revision 129
EN-MA-125, Troubleshooting Control of Maintenance Activities, Revision 17
3.M.3-61.5, Emergency Diesel Generator Two-Year Overhaul Preventive Maintenance – Critical Maintenance, Revision 62
3.M.3-51, Electrical Termination Procedure, Revision 31
3.M.3-61.14, Emergency Diesel Generator Performance Data Monitoring, Revision 4
3.M.4-121, GH-Bettis Actuator Refurbishment, Revision 25
8.7.2.10, Standby Gas Treatment System Dampers Quarterly Operability, Revision11
EN-HU-106, Procedure and Work Instruction Use and Adherence, Revision 3
EN-HU-102, Human Performance Traps & Tools, Revision 13
EN-OP-119, Protected Equipment Postings, Revision 7

EN-MA-125, Troubleshooting Control of Maintenance Activities, Revision 17
EN-MA-145, Maintenance Standard for Torque Applications, Rev. 6

Drawings
M253, Sht. 1, Vessel Instrumentation, Rev. 45
M1P 6-6, Block Diagram Reactor Protection System, Rev. E6
M1P 5-5, Block Diagram Reactor Protection System, Rev. E6
M300, Specifications for Piping, Rev. 109
M252, Sht. 1, Nuclear Boiler, Rev. 71
M220, Sht. 3, Compressed Air System Essential Instrument Air, Rev. 76
M215 Sht. 1, P&ID Cooling Water System Reactor Building, Rev. 52

Condition Reports

2015-5738	2015-6820	2015-7285
2015-6780	2015-7301	2015-7294
2015-6797	2015-7295	2015-06940

Maintenance Orders/Work Orders

00418929	00423331	00388174
00420991	00423328	00388170
52637053	00388172	00416313

Miscellaneous
I-NI-94, Setpoint Calculation for PIS 263-51A,B,C, and D, Rev. 1

Section 1R20: Refueling and Other Outage Activities

Procedures
2.1.1, Startup from Shutdown, Revision 192
2.1.4, Approach to Critical and Plant Heatup, Revision 36
2.1.5, Controlled Shutdown from Power, Revision 127
2.1.7, Vessel Heatup and Cooldown, Revision 54
2.2.19, Residual Heat Removal, Revision 110
2.2.19.1, Residual Heat Removal System Shutdown Cooling Mode of Operation, Revision 40
3.M.1-45, Outage Shutdown Risk Assessment, Revision 19

Condition Reports

2015-7285	2015-7297	2015-7319
2015-7287	2015-7300	2015-7332
2015-7290	2015-7301	2015-7341
2015-7292	2015-7303	2015-7351
2015-7294	2015-7304	2015-7356
2015-7295	2015-7311	2015-7362

Miscellaneous
Forced Outage Schedules
Outage OCC Meeting Updates
Control Room Logs
Emergent Issues Listings
Forced Outage Shift Turnover Sheets

NEI-99-02, Regulatory Performance Indicator Guideline, Revision 7
PNPS Technical Specifications
Post Trip Report
Power Maneuver Plans
Risk Assessment Review Checklists
EN No. 51338

Section 1R22: Surveillance Testing

Procedures
8.M.2-2.10.3-3, RHR Shutdown Cooling Valve Interlock Test, Revision 15
8.5.4.1, High Pressure Coolant Injection (HPCI) System Pump and Valve Quarterly and Biennial Comprehensive Operability, Revision 116
8.5.4.4, HPCI Valve (Quarterly) Operability Test, Revision 50
8.M.1-20, CRD Scram Discharge System 'A' Instrument Functional Test, Revision 50
EN-HU-106, Procedure and Work Instruction Use and Adherence, Revision 3

Condition Reports
2015-7138 2015-7102

Work Orders
52494533 52494532

Section 1EP6: Drill Evaluation

Procedures
5.3.23, Alternate Rod Insertion, Revision 32
EOP-1, RPV Control, Revision 14
EOP-2, RPV Control Failure to Scram, Revision 14

Miscellaneous
LORT/NRC Simulator Exam Scenario SES-2011-04, Revision 2, dated 8/11/15
Ops DEP Data Collection Form

Section 2RS5: Radiation Monitoring Instrumentation

Procedures
7.4.12, Calibration of the SJAE Offgas Process Radiation Monitor, Revision 31
7.4.14, Calibration of Main Steam Line Radiation Monitor, Revision 31
7.4.29, Source Calibration of General Atomic High Range Noble Gas Monitor, Revision 29
7.4.42, Calibration of the NUMAC Gaseous PRMs, Revision 27
7.4.47, Calibration of the Radwaste Effluent PRM, Revision 13
7.4.48, Calibration Turbine Building Gaseous Effluent Monitors (GEMS), Revision 9
7.10.3, PRM Calibration Check, Revision 25
7.10.8 Main Stack, Reactor Building Vent and Radwaste PRM Functional Check and Source Check, Revision 28
7.4.63, Process Radiation Monitor Setpoints, Revision 13
7.4.64, Process Radiation Monitor Alarm Response, Revision 9

Documents

1st Quarter 2015 Radiation Monitors System Health Report, April 2015, 7.4.42 Attachment 1 NUMAC Process Radiation Monitor Calibration Summary Sheet for Main Stack A RM-1705-18A, June 11, 2015
7.4.42 Attachment 1 NUMAC Process Radiation Monitor Calibration Summary Sheet for Main Stack A RM-1705-18A, February 2, 2015
7.4.42 Attachment 1 NUMAC Process Radiation Monitor Calibration Summary Sheet for Main Stack A RM-1705-18A, July 31, 2012
7.4.42 Attachment 1 NUMAC Process Radiation Monitor Calibration Summary Sheet for Reactor Building Vent B RM 1705-32B, January 21, 2014
7.4.42 Attachment 1 NUMAC Process Radiation Monitor Calibration Summary Sheet for Reactor Building Vent B RM 1705-32B, January 26, 2012
7.4.47 Attachment 1 Liquid Radwaste Process Radiation Monitor Calibration Summary Sheet for Liquid Radwaste Effluent Line RM 1705-30, April 17, 2015
7.4.47 Attachment 1 Liquid Radwaste Process Radiation Monitor Calibration Summary Sheet for Liquid Radwaste Effluent Line RM 1705-30, October 17, 2012

Condition Reports

2014-2692 2014-2795 2014-6947 2015-4927

Section 2RS6 Radioactive Gaseous and Liquid Effluent Treatment

Procedures

7.1.83, Sampling Closed Cooling Water and Station Heating Systems, Revision 18
7.1.89, Sewage Treatment Plant Sampling, Revision 6
7.1.141, Tritium Analysis Liquid Scintillation, Revision 4
7.1.142, Groundwater and Precipitation Sampling, Revision 1
7.3.31, Tritium Sampling, Revision 25
7.3.36, Offgas Sampling and Analysis, Revision 60
7.3.37, Noble Gas Effluent Sampling, Revision 37
7.3.48, Airborne Effluent Monitoring Turbine Deck and Reactor Feed Pump Bay, Revision 23
7.3.49, Airborne Effluent Monitoring of the Hot Machine Shop Exhaust, Revision 8
7.3.51, Airborne Monitoring Station Red Line Miscellaneous Release Points, Revision 10
7.4.49, Operation Turbine Building Effluent Monitors, Revision 8
7.4.60, Operation of EG&G ORTEC Gamma Spectroscopy System, Revision 9
7.8.1, Chemistry Sampling and Analysis Program, Revision 71
7.8.14, Laboratory Instrument Quality Control, Revision 4
7.9.12, Liquid Effluent Release with RETAD, Revision 10
7.9.15, Dose Assessment, Revision 1
7.13.1, Preparation Annual Radioactive Effluent Release Report, Revision 4
EN-CY-102, Laboratory Analytical Quality Control, Revision 5
EN-CY-108, Monitoring of Non-Radioactive Systems per NRC IE 80-10, Revision 6
EN-CY-110, Chemistry Gamma Spectroscopy System Operation
EN-CY-111 Radiological Ground Water Monitoring Program, Revision 6
7.1.30, HEPA Filter and Charcoal Cell Performance Test Program, Revision 33
7.1.44, Sampling of Charcoal Cells in Standby Gas Treatment and Control Room Environmental Filter System for Methyl Iodine Testing, Revision 23
7.1.93, HEPA Filter and Charcoal Filter Performance Test Program for the OSC/TSC Ventilation System, Revision 10

Documents

2013 PNPS Annual Radioactive Effluent Release Report, May 15, 2014
2014 PNPS Annual Radioactive Effluent Release Report and addendum, May 13, 2015
LO-PNP-2015-0067, Snapshot Self-assessment for Pre-NRC Inspection of RETS-REMP, June 15, 2015
NSC Corporation Radioiodine Penetration/Efficiency Test Report for A Control Room HEAFS, July 27, 2013
7.1.30 Attachment 1 HEPA Filter and Charcoal Test Efficiencies, for A Control Room HEAFS, July 10, 2013
NSC Corporation Radioiodine Penetration/Efficiency Test Report for A SBGT Upstream and Downstream, July 23, 2013
7.1.44 Attachment 1 Charcoal Cell Sampling for Methyl Iodine Testing for A SBGT Upstream and Downstream, August 29, 2013
8.M.3-15, Attachment 1 Main Stack Gas and Sample Flow Functional Test for FT-9368, June 8, 2015
8.M.3-16, Attachment 1 Reactor Building Gas and Sample Flow functional Test, for 8-2264-FT-1 and FT-8116, April 18, 2015
8.M.3-17 Attachment 1 Radioactive Liquid Effluent Alternate Flow Rate Instrument Calibration and Functional Test for LI-7316, LT-7319, LT-7122, LT-7124, LT-7126, and LT-7128, May 28, 2015 Teledyne Brown Engineering Report of Analysis L63614 for 10CFR50 Hard to Detect Analysis on Liquid Radwaste Composite, June 26, 2015
PNPS 2014 Annual Land Use Census, September 14, 2014

Condition Reports

2013-5742	2014-2682	2015-5726
2014-0233	2015-2291	2015-1164
2014-1818	2015-4680	

Section 2RS7 Radiological Environmental Monitoring Program

Procedures

7.12.5, Review and Evaluation of REMP Results, Revision 5
7.12.10, REMP Sample and Analysis Tracking, Revision 6
7.12.20, Collection, Identification, and Laboratory Analysis of REM Samples, Revision 6
7.12.25, Air Particulate and Air Iodine Filter Preparation and Collection, Revision 15
7.12.30, Surface Water Sampling, Revision 9
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7.12.60, Garden Census, Revision 7
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LIST OF ACRONYMS

AC	alternating current
ADAMS	Agencywide Documents Access and Management System
ALARA	as low as is reasonably achievable
CFR	*Code of Federal Regulations*
CR	condition report
EDG	emergency diesel generator
GDC	General Design Criterion
HPCI	high pressure coolant injection
IMC	Inspection Manual Chapter
kV	kilovolt
LCO	limiting condition for operation
LER	Licensee Event Report
MCR	main control room
MSIV	main steam isolation valve
NCV	non-cited violation
NRC	Nuclear Regulatory Commission, U.S.
ODCM	Offsite Dose Calculation manual
RBCCW	reactor building closed cooling water
REMP	Radiological Environmental Monitoring Program
RFO	refueling outage
RHR	residual heat removal
RG	Regulatory Guide
RP	radiation protection
RWP	radiation work permit
SDP	Significance Determination Process
SGTS	standby gas treatment system
SR	surveillance requirement
SSC	systems, structures, or components
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report