



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

October 27, 2014

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 – NRC INTEGRATED INSPECTION
REPORT 05000293/2014004 AND INDEPENDENT SPENT FUEL STORAGE
INSTALLATION (ISFSI) REPORT 07201044/2014002**

Dear Mr. Dent:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station (PNPS). The enclosed inspection report documents the inspection results, which were discussed on October 23, 2014, 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.

Based on the results of this inspection, no violations of NRC requirements were identified.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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

J. Dent

2

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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 05000293/2014004 and
ISFSI Report 07201044/2014002
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-293

License No. DPR-35

Report No. 05000293/2014004

Licensee: Entergy Nuclear Operations, Inc. (Entergy)

Facility: Pilgrim Nuclear Power Station

Location: 600 Rocky Hill Road
Plymouth, MA 02360

Dates: July 1, 2014 through September 30, 2014

Inspectors: E. Carfang, Senior Resident Inspector, Division of Reactor Projects
(DRP)
B. Scrobeck, Resident Inspector, DRP
John Nicholson, Health Physicist, Division of Nuclear Materials Safety
(DNMS)
Clyde Morell, Materials Engineer, DNMS
Earl Love, Safety Inspection Engineer, Office of Nuclear Material Safety
and Safeguards

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

TABLE OF CONTENTS

SUMMARY	3
1. REACTOR SAFETY	4
1R01 Adverse Weather Protection	4
1R04 Equipment Alignment	4
1R05 Fire Protection	5
1R06 Flood Protection Measures	6
1R11 Licensed Operator Requalification Program	6
1R12 Maintenance Effectiveness	7
1R13 Maintenance Risk Assessments and Emergent Work Control	7
1R15 Operability Determinations and Functionality Assessments	8
1R18 Plant Modifications	9
1R19 Post-Maintenance Testing	9
1R22 Surveillance Testing	10
1EP6 Drill Evaluation	10
4. OTHER ACTIVITIES	11
4OA1 Performance Indicator Verification	11
4OA2 Problem Identification and Resolution	12
4OA3 Follow-Up of Events and Notices of Enforcement Discretion	14
4OA5 Other Activities	14
4OA6 Meetings, Including Exit	15
ATTACHMENT: SUPPLEMENTARY INFORMATION	15
SUPPLEMENTARY INFORMATION	A-1
KEY POINTS OF CONTACT	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED	A-2
LIST OF DOCUMENTS REVIEWED	A-2
LIST OF ACRONYMS	A-9

SUMMARY

IR 05000293/2014004; 07/01/2014 – 09/30/2014; Pilgrim Nuclear Power Station (Pilgrim);
Routine Integrated Inspection Report.

This report covers a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

REPORT DETAILS

Summary of Plant Status

Pilgrim began the inspection period at 100 percent power. On August 16, 2014, the unit reduced power to 21 percent to repair the 3B feedwater heater. On August 22, 2014, power was increased from 21 percent to 50 percent to perform a condenser thermal backwash, and returned to 100 percent power on August 23, 2014. The unit operated at 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 August 18, 2014, the inspectors performed an inspection of the external flood protection measures for Entergy. The inspectors reviewed technical specifications (TS), procedures, design documents, and the Updated Final Safety Analysis Report (UFSAR), Chapter 2.4.2.4, 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, including the turbine building, auxiliary building, and berm to ensure that Entergy erected flood protection measures 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:

- Salt service water (SSW) system during maintenance on the 208B SSW pump on July 14, 2014
- 107B emergency diesel generator (EDG) during planned maintenance on 107A EDG on July 29, 2014
- Control rod drive (CRD) system following the 209A CRD pump motor replacement on September 5, 2014

- High pressure coolant injection (HPCI) system during maintenance on the reactor core isolation cooling (RCIC) system on September 16, 2014

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, work orders (WOs), condition reports (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 (CAP) for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

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.

- Diesel driven fire pump area on July 25, 2014
- Electric fire pump area on July 25, 2014
- 'A' Reactor building closed cooling water (RBCCW) room on July 25, 2014
- CRD pump quadrant on August 8, 2014
- Lube oil storage room and turbine lube oil reservoir on August 20, 2014

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)Annual Review of Cables Located in Underground Bunkers/Manholesa. Inspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could affect risk-significant equipment. The inspectors performed walk downs of three risk-significant areas: manhole 4, manhole 5, and cable pit 2B. Manholes 4 and 5 contain offsite power cables from the start-up transformer. Cable pit 2B contains offsite power cables from the shut-down transformer. Inspectors verified that the cables were not submerged in water, that cables and/or splices appeared intact, and observed the condition of cable support structures. When applicable, the inspectors verified proper sump pump operation and verified level alarm circuits were set in accordance with station procedures and calculations to ensure that the cables will not be submerged. The inspectors also ensured that drainage was provided and functioning properly in areas where dewatering devices were not installed. For those cables found submerged in water, the inspectors verified that Entergy had conducted an operability evaluation for the cables and were implementing appropriate corrective actions.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11Q – 2 samples).1 Quarterly Review of Licensed Operator Regualification Testing and Traininga. Inspection Scope

The inspectors observed licensed operators' annual requalification simulator examination on September 23, 2014, which included a HPCI pump failure, emergency depressurization, and two emergency action level declarations. 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 control room supervisor. 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

The inspectors observed low power operations at 21 percent power during the 3B feedwater heater repairs starting August 17, 2014 and lasting through August 22, 2014. The inspectors also observed portions of the power ascension on August 22. The inspectors observed reactivity control and infrequently performed evolution briefings to verify that the briefings met the criteria specified in Entergy's administrative procedure EN-OP-116, "Infrequently Performed Tests or Evolutions," Revision 12. Additionally, the inspectors observed crew performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 3 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, or component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance WOs, and maintenance rule (MR) basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the MR. For each sample selected, the inspectors verified that the SSC was properly scoped into the MR in accordance with Title 10 of the *Code of Federal Regulations* (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 MR system boundaries.

- MR (a)(1) evaluation for the station blackout (SBO) diesel exceeding MR reliability performance criteria on March 19, 2014
- 107B EDG trip due to high jacket water temperature on July 14, 2014
- MR (a)(1) evaluation of offsite power line 342 unavailability the week of August 18, 2014

b. Findings

No findings were identified.

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.

- Elevated risk during planned maintenance on the battery charger transfer switch and reactor protection system the week of June 29, 2014
- Elevated risk during A5 and A6 emergency 4KV buses under voltage testing and planned maintenance on the 107A EDG on July 29, 2014
- Elevated risk during planned maintenance on HPCI system on August 11, 2014
- Elevated risk during planned maintenance on the shutdown transformer and SBO EDG on August 25 - 28, 2014

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- Insulation resistance on startup transformer below procedural limit on June 24, 2014
- Startup transformer cables submerged due to sump pump failure on July 8, 2014
- 208E SSW pump air release valve leakage on July 19, 2014
- In-service testing of 1B residual heat removal (RHR) pump suction relief valve on September 15, 2014

The inspectors selected these issues based on the risk significance of the associated components and systems. 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

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)

Temporary Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification Engineering Change 52053, "Install Temporary Sump Pumps in Manholes #4 and #5," to determine whether the modification affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results, and conducted field walkdowns of the modifications to verify that the temporary modifications did not degrade the design bases, licensing bases, and performance capability of the affected systems.

b. Findings

No findings were identified.

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.

- 'B' Drywell containment high radiation monitoring system replacement on July 13, 2014
- 107B EDG trip on high jacket water temperature during testing on July 14, 2014
- Overhaul of the 208B SSW pump on July 15, 2014
- 202C RBCCW pump mechanical seal replacement on August 1, 2014
- Replacement of HPCI controller square root converter on August 12, 2014
- Repair to 'C' traversing incore probe on August 25, 2014

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 4 samples)a. Inspection Scope

The inspectors observed the performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, 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:

- EDG and Associated Emergency Bus Surveillance on July 1, 2014
- Low Pressure Core Injection System Loop 'A' Operability – Pump Quarterly Flow Rate Test and Valve Test on July 8, 2014 (in-service test)
- Diesel Generator 'B' Initiation by Loss of Offsite Power Logic on July 15, 2014
- Daily Surveillance Log on August 24 & 25, 2014 (leak rate)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness1EP6 Drill Evaluation (71114.06 – 1 sample)Emergency Preparedness Drill Observationa. Inspection Scope

The inspectors evaluated the conduct of a routine Entergy emergency drill on July 30, 2014, to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The drill included an explosion in the protected area, an inadvertent HPCI injection, and flooding in a vital area. The inspectors observed emergency response operations in the simulator and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Entergy staff in order to evaluate Entergy's critique and to verify whether Entergy staff was properly identifying weaknesses and entering them into the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

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, 2013, through June 30, 2014:

- High pressure injection system (HPCI)
- Heat removal system (RCIC)
- Residual heat removal system (RHR)

To determine the accuracy of the performance indicator (PI) data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) 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.

.2 Safety System Functional Failure (1 sample)

a. Inspection Scope

The inspectors reviewed Unresolved Issue (URI) 05000293/2014002-01, Reporting of Safety System Functional Failure Performance Indicator for Ultimate Heat Sink Inoperability, regarding the inoperability of the Ultimate Heat Sink on July 16, 2013 and July 17, 2013. These events were reported under Licensee Event Report (LER) 05000293/2013-007-00, and documented in NRC Integrated Inspection Report 05000293/2013005. This URI was documented in NRC Integrated Inspection Report 05000293/2014002. To determine the adequacy of Entergy's actions, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." The inspectors also reviewed Entergy's plant logs, CRs, LERs, and NRC integrated inspection reports.

b. Findings

No findings were identified.

The inspectors determined that the engineering evaluation performed by Entergy was adequate to demonstrate that, during the event, plant systems were capable of performing their safety functions. Entergy's action to revise their PI data to show zero Safety System Functional Failures, in accordance with the guidance of NEI Document

99-02, was appropriate. URI 05000293/2014002-01, Reporting of Safety System Functional Failure Performance Indicator for Ultimate Heat Sink Inoperability, is closed.

4OA2 Problem Identification and Resolution (71152 – 2 samples)

.1 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’s entered issues into the CAP 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 CAP and periodically attended CR screening meetings.

b. Findings

No findings were identified.

.2 Annual Sample: Tracking of Allowable Secondary Containment Gap Margin

a. Inspection Scope

The inspectors performed an in-depth review of Entergy’s causal evaluations and corrective actions associated with secondary containment leakage evaluations. The issue involves the measurement of existing gaps in the reactor building truck lock doors due to damage to the door in March of 2013, and the evaluation of these gaps along with system testing and calculations of allowable leakage. Additionally, the scope includes actions taken by Entergy in response to the inspectors’ identification of previously unidentified gaps in June of 2014.

The inspectors performed an in-depth review of Entergy’s causal evaluations and corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with the secondary containment and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy’s CAP and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified.

The inspectors determined that, in general, Entergy adequately identified, characterized, and implemented corrective actions associated with the measurement of secondary containment gaps and leakage. The inspectors noted weaknesses in work practices and in the completion of quality records associated with reactor building truck lock door inspections, as well as differences between the secondary containment leakage calculations and the operations tool that tracks secondary containment gaps. Entergy

took appropriate actions to correct these conditions, and the inspectors determined that these deficiencies were minor because at no time did they result in an inappropriate declaration of secondary containment operability and therefore had no safety impact. Additionally, Entergy took appropriate compensatory measures to maintain operability and to conduct additional testing when inspectors identified additional gaps that challenged the margin for secondary containment operability. This additional testing verified secondary containment operability and revealed that Entergy was conservative in performing calculations that determined allowable gap margins. Gaps that were already in existence during the testing were unnecessarily counted against the calculated margin. Entergy completed temporary repairs to the reactor building truck bay door and scheduled permanent repairs under WO 00275465. The inspectors determined that Entergy's failure to identify the additional gaps was minor because the overall gap was within the allowable margins of the secondary leakage calculation and system operability was maintained. The inspectors determined Entergy's response to the issue was adequate and commensurate with the safety significance, was timely, and the actions taken and planned are reasonable to resolve the issues.

.3 Annual Sample: Review of the Operator Workaround Program

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, existing operator aids and disabled alarms, and open main control room deficiencies to identify any effect on emergency operating procedure operator actions, and any impact on possible initiating events and mitigating systems. The inspectors evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Entergy's procedure EN-FAP-OP-006, "Operator Aggregate Impact Performance Indicator," Revision 2.

The inspectors reviewed Entergy's process to identify, prioritize, and resolve main control room distractions to minimize operator burdens. The inspectors reviewed the system used to track these operator workarounds and recent Entergy self-assessments of the program. The inspectors also toured the control room and discussed the current operator workarounds with the operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified.

The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also verified that Entergy entered operator workarounds and burdens into the CAP at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

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/or 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 Inspection Manual Chapter 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.

- Unplanned downpower to 21 percent on August 16, 2014, due to a leak on the 3B feedwater heater

b. Findings

No findings were identified.

.2 (Closed) LER 05000293/2014-001-00: Condition Prohibited by Technical Specifications

On May 6, 2014, the inspectors identified that Pilgrim was not in compliance with the TS requirements for inoperable primary containment isolation valves (PCIVs), because there was not at least one isolation valve closed and deactivated in the same line as an inoperable PCIV. The issue originated with TS Amendment 113 from 1988, which added the requirement to deactivate credited isolation valves in the same line as an inoperable PCIV. Entergy did not adequately revise procedures and practices to align with the current TS requirements. The enforcement aspects of this issue are discussed in IR 05000293/2014003. The inspectors did not identify any new issues during the review of the LER. This LER is closed.

4OA5 Other Activities

Preoperational Testing of Independent Spent Fuel Storage Installation at Operating Plants (60854, 60854.1)

a. Inspection Scope

The inspectors observed and evaluated Pilgrim's performance during NRC observed pre-operational dry run activities associated with their planned operation of an Independent Spent Fuel Storage Installation (ISFSI). The inspectors observed Pilgrim dry run activities on August 12-13, 2014 (Dry Run #1) and September 3-4, 2014 (Dry Run #2). During both dry runs the inspectors observed pre-job briefs and verified Pilgrim utilized adequate radiological controls and discussed relevant examples of operating experience.

During Dry Run #1 the inspectors observed welding and nondestructive examination activities to determine whether the Pilgrim staff and contractors had developed the capability to properly weld and perform nondestructive examination of the multi-purpose canister (MPC) to be used in storage of spent fuel at the Pilgrim site. The inspectors observed the welding equipment setup, welding of the mockup inner and outer covers, visual weld examination, penetrant testing, hydrogen monitoring, and helium leak testing of the vent and drain port cover plate welds. The inspectors reviewed portions of the work instructions and procedures that were being used. The inspectors verified that work instructions and procedures appropriately captured the commitments and requirements contained in the Safety Analysis Report, the NRC's Safety Evaluation Report, the Certificate of Compliance, No. 1014, Amendment 7 (issued to Holtec International), the American Society of Mechanical Engineers Code, and 10 CFR Part 72. The inspectors examined the welding equipment, observed welding on each of the MPC components, and reviewed welder qualification records.

During Dry Run #2 the inspectors observed Pilgrim's MPC fluid handling portions of the loading and unloading operations which included hydrostatic testing, blowdown, vacuum drying, and helium backfill of the MPC. The inspectors verified that the required vacuum pressure could be achieved and pressure maintained within the TS limits. The inspectors verified that procedures were adequate to ensure requirements for minimal water content within a loaded MC could be achieved, and an inert atmosphere maintained to support the safe storage of spent fuel assemblies. The inspectors discussed with Entergy personnel initial actions they would take in accordance with the abnormal conditions procedure should a dry cask system need to be unloaded.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On October 23, 2014, the inspectors presented the quarterly baseline 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
J. Blagbrough	Senior System & Components Engineer
G. Blankenbiller	Chemistry Manager
T. Bordelon	Performance & Improvement Manager
D. Burke	Security Manager
R. Byrne	Licensing Engineer
D. Calabrese	Emergency Planning Manager
B. Chenard	Engineering Director
F. Clifford	Operations Support Manager
J. Cotter	Operations Training Supervisor
B. Deevy	System Engineer
P. Doody	Senior Lead Enginner
M. Gatslick	Security Compliance Supervisor
J. Gerety	System Engineering Manager
P. Glover	SSW System Engineer
R. Haislet	Operations Supervisor
P. Harizi	Design Engineer
S. Hudson	System Engineer
M. Jacobs	Nuclear Oversight Manager
J. Keene	System Engineer
L. Kinney	Holtec Project Manager
P. Kristian	Senior Project Manager Dry Cast
M. Landry	Systems & Components Engineer
J. Macdonald	Senior Operations Manager
C. McDonald	Training Manager
R. Metthe	Senior Engineer
R. Morris	Senior System & Component Engineer
J. Moylan	Manager Project & Maintenance Services
L. Murray	Project Manager
P. Nigro	Mechanical Maintenance Supervisor
J. Norris	Radiation Protection Supervisor
D. Noyes	Director of Regulatory & Performance Improvement
J. O'Donnell	Systems Engineer
R. O'Neil	Operations Supervisor
J. Ohrenberger	Senior Maintenance Manager
E.C. Perkins	Regulatory Assurance Manager
R. Sheridan	Operations
D. Small	Design Engineer
S. Solar	Holtec Director Site Services
P. Stover	Radiation Protection Supervisor
S. Verrochi	General Manager Plant Operations
T. White	Design & Program Engineering Manager
M. Williams	Nuclear Safety Licensing Specialist
J. Yiingling	System Engineer

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Closed

05000293/2014-002-01	URI	Reporting of Safety System Functional Failure Performance Indicator for Ultimate Heat Sink Inoperability (Section 4OA1)
05000293/2014-001-00	LER	Condition Prohibited by Technical Specifications (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Condition Reports

CR-PNP-2013-5899

Miscellaneous

Engineering Report PNPS-CS-12-00002, Pilgrim Nuclear Power Station Flooding Walkdown
 Submittal Report for Resolution of Fukushima Near-term Task Force Recommendation
 2.3:Flooding

Final Safety Analysis Report, Section 2.4.4

Pilgrim Individual Plant Examination for External Events (IPEEE)

Staff Evaluation of IPEEE Submittal for Pilgrim Nuclear Power Station

Section 1R04: Equipment Alignment

Procedures

2.2.21, High Pressure Coolant Injection System (HPCI), Revision 83

2.2.32, Salt Service Water System, Revision 89

2.2.87, Control Rod Drive System, Revision 134

2.2.87.5, Control Rod Drive System Valve Lineup, Revision 5

Condition Reports (*NRC Identified)

CR-PNP-2014-1813

CR-PNP-2014-3973

CR-PNP-2014-4316

CR-PNP-2014-4339

CR-PNP-2014-4353

CR-PNP-2014-4529*

Drawings

E172, Schematic Diagram, Salt Service Water System, Revision E4

M212 Sh 1, P&ID Service Water System, Revision 95

M243, P&ID HPCI System, Revision 54

M244 Sh 1, P&ID HPCI System, Revision 31

M271, P&ID Emergency Diesel Generator Lube Oil System, Revision 6

M272, P&ID Emergency Diesel Generator Jacket Water Cooling System, Revision 9

Miscellaneous

ESOMS Clearance Module

Final Safety Analysis Report (FSAR) Section 10.7, Salt Service Water System

HPCI Valve and Breaker Checklists

Online Risk Assessment for the Week of 9/14/14

Section 1R05: Fire Protection

Procedures

5.5.2, special Fire Procedure, Revision 52

89XM-1-ER-Q-E5, Fire Hazard Analysis – Fire Area 5.3, Fire Zone 5.6, Diesel Driven Fire Pump Room, dated February 2000

Fire Hazard Analysis – Fire Area 5.3, Fire Zone 5.6, Electric Fire Pump Area

Fire Hazard Analysis – Fire Area 1.21, Fire Zone 1.21, 'A' Reactor Building Closed Water (RBCCW) Pumps/Heat Exchanger Room

Fire Hazard Analysis – Fire Area 1.9, Fire Zone 1.6, CRD Pump Quadrant

Fire Hazard Analysis – Fire Area 1.10, Fire Zones 2.5 and 2.7, Lube Oil Storage Room and Turbine Oil Reservoir

Condition Reports

CR-PNP-2010-1557

Drawings

A43 Sh 1, Door Schedule, Revision 34

A43 Sh 2, Door Schedule, Revision 18

A44 Sh 1, Door Schedule, Revision E38

A316, Sh 1, Reactor & Turbine Building Floor EL (-) 17'-6" and 6'-0" Fire Barrier System, Revision 6

A316, Sh 2, Reactor & Turbine Building Floor Plan EL (-) 17'-6" and 6'-0" Fire Barrier Numbering System, Revision E1

A320 Sh 1, Reactor Building Plans, Revision E4

A320 Sh 2, Reactor Building Plans, Revision E1

M287, Plant Ventilation Diagram, Revision 41

M292, Intake Structure Air Flow Diagram, Revision 31

Work Orders

52294163-01

52369993-01

53394163-01

Drawings

A316 Sh 1, Reactor and Turbine Building Floor Plan E1 (-) 17'-6" and 6'-0" Fire Barrier System, Revision 6

A316 Sh 2, Reactor and Turbine Building Floor Plan E1 (-) 17'-6" and 6'-0" Fire Barrier System, Revision E1

A317 Sh 1, Reactor and Turbine Building Floor Plan at E1 23'-0" Fire Barrier System, Revision E9

A317 Sh 2, Reactor and Turbine Building Floor Plan at 23'-0" Fire Barrier System, Revision E3

A318 Sh 1, Reactor and Turbine Building Floor Plan at E1 37'-0" Fire Barrier System, Revision 6

A318 Sh 2, Reactor and Turbine Building Floor Plan at E1 37'-0" Fire Barrier System, Revision 3

Miscellaneous

Engineering Evaluation No. 81, Plastic Pipe Penetrations, Revision 1
Fire Hazards Analysis
Fire Zone Data Sheet
Hourly Fire Watch Log 12-113, 12-114
Letter No. 1.1.88.365, Issuance of License Amendment No. 123
Letter No. 1.2.88.120, License Amendment Request

Section 1R06: Flood Protection Measures

Procedures

EN-DC-346, Cable Reliability Program, Revision 6

Condition Reports

CR-PNP-2014-3213 CR-PNP-2014-3214 CR-PNP-2014-3497

Work Orders

52558693-01
52570917-01
52570918-01

Section 1R11: Licensed Operator Regualification Program

Procedures

2.1.14, Station Power Charge, Revision 112
2.2.94.5, Main Condenser Backwash, Revision 13
RMP-PNP-20-26, Recovery from August 2014 E103B Feedwater Heater Repair, Revision 0
SES-2010-15, LORT/NRC Simulator Exam Scenario, Revision 3

Miscellaneous

Emergency Plan
Emergency Operating Procedures (EOPs)
CR-PNP-2014-4623

Section 1R12: Maintenance Effectiveness

Procedures

EN-DC-204, Maintenance Rule Scope and Basis, Revision 3
EN-DC-205, Maintenance Rule Monitoring, Revision 5
EN-LI-118, Equipment Failure Evaluation, Revision 20

Condition Reports

CR-PNP-2013-8088 CR-PNP-2014-1045 CR-PNP-2014-2616
CR-PNP-2014-0221 CR-PNP-2014-1228 CR-PNP-2014-3361
CR-PNP-2014-0581

Miscellaneous

Emergency Plan

Maintenance Rule Basis Document, 345 kV/Unit Aux/Start-up Transformers, Generators
Excitation and Iso-Phase Bus, Revision 12
Pilgrim Maintenance Rule Basis Document – Emergency Diesel Generator dated 3/24/12
Station Blackout Diesel System Health Report for 2014
System Health Report – 46A – 345 KV, dated 8/20/14

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

1.5.22, Risk Assessment Process, Revision 23
EN-WM-104, Online Risk Assessment, Revision 9

Miscellaneous

Activity Risk Compensatory Measures Sheet, HPCI Maintenance Limiting Conditions for
Operation (LCO)
EOOS Weekly Risk, for the week of 7/28/14
EOOS Weekly Risk, for the week of 8/10/14
Online Risk Assessment for the week of 6/29/14
Work Week Schedule for Week of 8/10/14

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

3.M.3-4, Insulation Test, Revision 60
3.M.4-66, Safety-Related Relief Valve Test Procedure, Revision 7
8.5.3.2.1, Salt Service Water Pump Quarterly & Biennial Comprehensive Operability and Valve
Operability Tests, Revision 25
EN-DC-346, Cable Reliability Program, Revision 6
EN-OP-104, Operability Determination Process, Revision 6
EN-OP-104, Operability Determination Process, Revision 7

Condition Reports

CR-PNP-2012-4816 CR-PNP-2014-3520
CR-PNP-2014-2961 CR-PNP-2014-4355
CR-PNP-2014-3214

Maintenance Orders/Work Orders

52373685
52443334
52443335

Miscellaneous

EPRI 2012 Technical Report on Medium Voltage Cable Failure Research
ESOMS LCO Tracking Module
Medium Voltage Cable Aging Management, Revision 1

Section 1R18: Plant Modifications

Procedures

EN-DC-136, Temporary Modification Control Form, Revision 10
EN-LI-100, Process Applicability Determination Form, Revision 15

Condition Reports

CR-PNP-2014-3214	CR-PNP-2014-4367
CR-PNP-2014-3497	CR-PNP-2014-4962
CR-PNP-2014-3609	CR-PNP-2014-4959

Maintenance Orders/Work Orders

388055

Section 1R19: Post-Maintenance TestingProcedures

3.M.2-5.6.4, Traversing Incore Probe (TIP) Guide Tube Friction Test – Critical Maintenance, Revision 19

3.M.4-14.2, Salt Service Water Pumps: Routine Maintenance, Revision 62

3.M.4-14.3, Reactor Building Closed Cooling Water Pump Maintenance Critical Maintenance, Revision 15

8.5.3.1, Reactor Building Closed Cooling Water System Quarterly and Biennial Comprehensive Operability, Revision 4

8.5.3.2.1, Salt Service Water Quarterly and Biennial (Comprehensive) Operability and Valve Operability Tests, Revision 28

8.5.4.1, High Pressure Coolant Injection (HPCI) System Pump and Valve Quarterly and Biennial Comprehensive Operability, Revision 114

8.5.4.6, HPCI Pump and Valve Operability from Alternate Shutdown Panel, Revision 42

8.5.4.4, HPCI (Quarterly) Operability Test, Revision 50

8.7.4.3, Miscellaneous Containment Isolation Valve quarterly Operability, Revision 44

8.9.1, Emergency Diesel Generator and Associated Emergency Bus Surveillance, Revision 127

8.E.23, HPCI System Instrumentation Calibration, Revision 77

8.M.2-1.5.8.2, High Drywell Pressure, Low Water Level and High Radiation Logic System B – Outboard Functional Test, Revision 37

9.5, LPRM Calibration, Revision 48

9.5.1, Operation of TIP Machine for Process Computer Updating, Revision 23

9.6, TIP System Operational Checkout, Revision 28

EN-WM-107- Post maintenance Testing, Revision 4

Condition Reports

CR-PNPS-2014-3047	CR-PNPS-2014-3361	CR-PNPS-2014-3973
CR-PNPS-2014-3053	CR-PNPS-2014-3381	CR-PNPS-2014-3992
CR-PNPS-2014-3070	CR-PNPS-2014-3382	CR-PNPS-2014-4199
CR-PNPS-2014-3333		

Maintenance Orders/Work Orders

00378161	00372053	52556131
00320451	00388367	52558856
00372053	52405372	52558859
00372053	52423077	

Drawings

M212 Sh 1, PI&D Service Water System, Revision 95

Miscellaneous

Engineering Change (EC) 0000051935

Section 1R22: Surveillance Testing

Procedures

- 2.1.15, Daily Surveillance Log (TSs, FSAR and Regulatory Agencies), Revision 220
- 8.5.2.2.1, LPCI System Loop 'A' Operability – Pump Quarterly and Biennial (Comprehensive) Flow Rate Tests and Valve Tests, Revision 57
- 8.9.1, Emergency Diesel Generator and Associated Emergency Bus Surveillance, Revision 127
- 8.M.2-2.10.8.6, Diesel Generator 'B' Initiation by Loss of Offsite Power Logic – Critical Maintenance, Revision 48

Condition Reports

CR-PNP-2014-1571	CR-PNP-2014-3137	CR-PNP-2014-3376
CR-PNP-2014-2551	CR-PNP-2014-3205	CR-PNP-2014-3387
CR-PNP-2014-3123		

Miscellaneous

- Control Room Narrative Log
- Daily Log Test #48
- FSAR Section 4.8, Residual Heat Removal, System
- FSAR Section 6.4.4, Low Pressure Coolant Injection
- FSAR Section 8.5, Standby AC Power Source
- PDC 00-09, Install EDG Timers
- Technical Specifications

Section 1EP6: Drill Evaluation

Procedures

- EP-IP-100, Emergency Classified and Notification, Revision 38
- EN-LI-114, Performance Indicator Process, Revision 6

Condition Reports

CR-PNP-2013-5246	CR-PNP-2014-3796
CR-PNP-2014-1229	CR-PNP-2014-3803
CR-PNP-2014-3766	CR-PNP-2014-3793

Calculations

- M-662, RHR and Core Spray Pump NPSH and Suction Pressure Drop, Revision E4
- M-734, RHR and Core Spray Pump Suction Strainer Debris Head Loss NPSH Evaluation, Revision 2

Miscellaneous

- FSAR Section 4.8, Residual Heat Removal System
- FSAR Section 6.5.2.5, Core Spray System
- FSAR Section 6.5.2.6, Low Pressure Coolant Injection
- FSAR Section 14.5, Postulated Design Basis Accidents
- Narrative Summary, EP Combined Functional Drill 14-04

Section 40A1: Performance Indicator Verification

Procedures

EN-LI-114, Performance Indicator Process, Revision 6

Miscellaneous

MSPI Derivation Reports

NEI 99-02 Regulatory Assessment Performance Indicator Guidance, Revision 7

NRC Performance Indicators for High Pressure Injection System, Heat Removal System and Residual Heat Removal Systems

Pilgrim Control Room Logs

Pilgrim NRC Performance Indicator Data Sheets

Section 40A2: Problem Identification and Resolution

Procedures

EN-FAP-OP-006, Operator Aggregate Impact Index Performance Indicator, Revision 2

EN-LI-102, Corrective Action Process, Revision 24

EN-LI-118, Cause Evaluation Process, Revision 20

EN-OP-115, Conduct of Operations, Revision 14

Condition Reports

CR-PNP-2013-7328

CR-PNP-2013-7377

CR-PNP-2014-2604

CR-PNP-2013-7336

CR-PNP-2014-2563

CR-PNP-2014-2721

CR-PNP-2013-7362

CR-PNP-2014-2578

Miscellaneous

2014 Operator Aggregate Impact Index Draft

Daily Plant Status Report

Secondary Containment Gap Tracking LCO

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Procedure

2.1.14, Station Power Change, Revision 112

Section 40A5: Other Activities

Procedures

GQP-1.0 Project Organization and Documentation

GQP-7.1 Procurement, Receipt, Storage and Issue of ASME III Subsection NCA 3800 Weld Materials

GQP-8.1 Process Traveler

GQP-9.0 Training, Qualification, Examination, and Certification of NDE Personnel

GQP-9.2 High Temperature Liquid Penetrant Examination and Acceptance Standards for Welds, Base materials, and Cladding

GQP-9.6 Visual Examination of Welds

GQP-12.0 Control of Measuring and Test Equipment

GQP-17.0 Quality Records

GWS-1 ASME Applications

MSLT-MPC-HOLTEC Helium Mass Spectrometer Leak Test Procedure Multi-Purpose Canister

PCI Welding Control Procedure 3, Weld Material Control
 PCI Welding Control Procedure 5, Weld and Base Metal Repair
 PCI Welding General Quality Procedures (GQP) and General Welding Standards (GWS)
 Pilgrim Draft Procedure 12.7, Response to Abnormal Conditions
 Pilgrim Procedure 12.3, Multi-Purpose Canister (MPC) Backfill and Sealing Operations
 PCI Welding Instruction PNPS Temporary Procedure 14-019/PI-CNSTR-OP-PIL-H-01 Closure
 Welding of Multi-Purpose Canisters at Pilgrim Nuclear Power Plant

Miscellaneous

8MC-GTAW (R15) Procedure Specifications for Welding P8 Material with Machine GTAW
 Process
 8MN-GTAW Procedure Specifications for Welding P8 Material with Manual GTAW
 Process, Revision 3
 Process Qualification Records PQR-062, 063, 600, 864, 899
 Radiation Work permit RWP-2014-096 Tasks 03, 04, and 07
 Welding Control
 WO 00387406 Tasks 04, 05, 18, and 20

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
CAP	corrective action program
CR	condition report
CRD	control rod drive
DNMS	Division of Nuclear Materials Safety
DRP	Division of Reactor Projects
EDG	emergency diesel generator
Entergy	Entergy Nuclear Operations, Inc.
HPCI	high pressure coolant injection
ISFSI	independent spent fuel storage installation
LER	licensee event report
MPC	multi-purpose canister
MR	maintenance rule
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PCIV	primary containment isolation valve
PI	performance indicator
Pilgrim	Pilgrim Nuclear Power Station
RBCCW	reactor building closed cooling water
RCIC	reactor core isolation cooling
RHR	residual heat removal
SBO	station blackout
SSC	structure, system, or component
SSW	salt service water
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
URI	unresolved item
WO	work order