



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

September 1, 2015

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

**SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR PILGRIM NUCLEAR POWER  
STATION (REPORT 05000293/2015005)**

Dear Mr. Dent:

On August 11, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed its mid-cycle performance review of Pilgrim Nuclear Power Station (Pilgrim). The NRC reviewed the most recent quarterly performance indicators (PIs) in addition to inspection results and enforcement actions from July 1, 2014, through June 30, 2015. This letter informs you of the NRC's assessment of your facility during this period and its plans for future inspections at your facility.

The NRC determined that the performance at Pilgrim has been in the Repetitive Degraded Cornerstone Column (Column 4) of the Reactor Oversight Process (ROP) Action Matrix since the beginning of the first quarter of 2015 following the final significance determination of a White finding under the Mitigating Systems Cornerstone referenced in a separate letter issued on September 1, 2015 (ADAMS Accession No. ML15230A217). Pilgrim was already in the Degraded Cornerstone Column (Column 3) of the ROP Action Matrix for more than five consecutive quarters as of January 1, 2015, due to two open White inputs under the Initiating Events Cornerstone. In Supplemental Inspection Report 05000293/2014008 (ML15026A069), dated January 26, 2015, the NRC noted that Pilgrim did not adequately evaluate the causes and take or plan timely corrective actions to address the issues associated with a high number of unplanned scrams which occurred in 2013. As a result, the two White inputs under the Initiating Events Cornerstone remained open for greater than five consecutive quarters and were in effect when the new White finding under the Mitigating Systems Cornerstone was identified in an exit meeting on March 20, 2015, as documented in Special Inspection Report 05000293/2015007 (ML15147A412), dated May 27, 2015. The White inputs under the Initiating Events Cornerstone have subsequently been closed as of June 30, 2015, due to the successful completion of a follow-up inspection in accordance with Inspection Procedure (IP) 95002 as documented in Inspection Report 05000293/2015009 (ML15169A946) dated June 18, 2015.

Notwithstanding the recent closure of the original White inputs, the duration of the original inputs combined with the repetitive nature of the new finding highlight persistent weaknesses in the Pilgrim Corrective Action Program (CAP) which have contributed to repeated unplanned scrams and equipment failures and are consistent with "repetitive degraded cornerstone" as defined in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program."

As a result of Pilgrim's entry into Column 4, in addition to ROP baseline inspections, the NRC plans to conduct a supplemental inspection in accordance with Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input." Based on the persistent CAP weaknesses that resulted in Pilgrim's entry into the repetitive degraded cornerstone, this supplemental inspection will be focused on the Pilgrim CAP and safety culture assessment (reference sections 02.02 and 02.07 through 02.09 of IP 95003). Given that the Action Matrix inputs which caused Pilgrim to enter the repetitive degraded cornerstone have each been determined to be of low to moderate safety significance, the NRC considered the focus of the supplemental inspection under the affected Strategic Performance Area of Reactor Safety. Based on the NRC's evaluation of those inputs, the reactor safety portion of the supplemental inspection will focus on the key attributes of human performance, procedure quality, and equipment performance (reference sections 02.03c, 02.03d and 02.03e of IP 95003).

As described in the objectives section of IP 95003, the results of the supplemental inspection will: 1) provide the NRC with additional information to be used in deciding whether the continued operation of the facility is acceptable and whether additional regulatory actions are necessary to arrest declining licensee/plant performance; 2) provide an independent assessment of the extent of risk-significant issues to aid in the determination of whether an unacceptable margin of safety or security exists; 3) independently assess the adequacy of the programs and processes used by the licensee to identify, evaluate, and correct performance issues; 4) independently evaluate the adequacy of programs and processes in the affected strategic performance areas; 5) provide insight into the overall root and contributing causes of identified performance deficiencies; and 6) evaluate the licensee's third-party safety culture assessment and conduct a graded assessment of the licensee's safety culture based on the results of the evaluation. The NRC will plan this inspection activity when you provide written notification of your readiness for the inspection.

In the interim, prior to the completion of IP 95003, IMC 0305 provides a number of regulatory tools to ensure increased oversight to monitor for any additional performance decline. For instance, the NRC will hold quarterly performance reviews regarding Pilgrim with a particular focus on monitoring for additional performance decline. If NRC identifies the need for additional regulatory actions, our plans will be communicated to you by letter. The NRC will also engage Entergy Nuclear Operations, Inc. (Entergy) with more frequent site visits, and the Commission may call for Entergy to discuss its performance improvement plan at a public meeting within the next six months. The NRC may take additional regulatory actions as warranted, including additional supplemental inspections, a demand for information, or issuance of an order, up to and including a plant shutdown.

From July 1, 2014, through June 30, 2015, the NRC issued three Severity Level IV traditional enforcement violations to Pilgrim associated with impeding the regulatory process. Therefore, the NRC plans to conduct IP 92723, "Follow-up Inspection for Three or more Severity Level IV Traditional Enforcement Violations in the Same Area in a 12 Month Period," to follow up on these violations.

In addition to the inspections noted above, the NRC plans to conduct Temporary Instruction (TI) 2515/190, "Inspection of the Licensee's Proposed Interim Actions as a Result of the Near-term Task Force Recommendation 2.1 Flooding Reevaluation," and TI 2515/191, "Inspection of

the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans.”

The enclosed inspection plan lists the inspections scheduled through June 30, 2017. Routine inspections performed by resident inspectors are not included in the inspection plan. The inspections listed during the second half of the inspection plan are tentative and may be revised at the end-of-cycle performance review. The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. The NRC will contact you as soon as possible to discuss changes to the inspection plan should circumstances warrant any changes. This inspection plan does not include security-related inspections, which will be sent via separate, non-publicly available correspondence.

In response to the accident at Fukushima, the Commission issued Order EA-12-049, “Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,” which requires licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities following a beyond-design-basis external event. Additionally, the Commission issued Order EA-12-051, “Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,” which requires licensees to have a reliable means of remotely monitoring wide-range spent fuel pool levels to support effective prioritization of event mitigation and recovery actions in the event of a beyond-design-basis external event. The NRC is conducting audits of licensee efforts towards compliance with these Orders. The onsite portion of the audit has been completed at Pilgrim, and the information gathered will aid staff in development of the Final Safety Evaluation for the site. Entergy’s Final Compliance letters (ML15202A415, ML15209A606) were submitted, and subsequent to issuance of the NRC’s Final Safety Evaluations, the NRC staff will confirm through inspections the full implementation of the orders mentioned above by performing TI 2515/191, “Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans.”

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 will be available electronically for public inspection in the

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NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Please contact Raymond McKinley at (610) 337-5150 with any questions you have regarding this letter.

Sincerely,

*/RA/*

Daniel H. Dorman  
Regional Administrator

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

Enclosure:  
Pilgrim Inspection/Activity Plan

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Pilgrim Inspection/Activity Plan

cc w/encl: Distribution via ListServ

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DOCUMENT NAME: S:\ROP Assessment Meetings\ROP-16 Mid-Cycle Review\Branch 5\Pilgrim\RI Mid-Cycle Letter Pilgrim Final.docx  
ADAMS Accession No. **ML15243A259**

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	R1/DRP	R1/DRP	R1/DRP	R1/ORA	
NAME	EDiPaolo/EMD via email	RMckinley/RRM	MScott/MLS via email	DDorman/DHD	
DATE	8/18/15	8/18/15	8/20/15	9/1/15	

OFFICIAL RECORD COPY

**Pilgrim**  
**Inspection / Activity Plan**  
**07/01/2015 - 06/30/2017**

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
			<b>71124 - RADIOACTIVE EFFLUENT CONTROL RETS</b>		<b>1</b>
1	06/29/2015	07/02/2015	IP 71124.05	Radiation Monitoring Instrumentation	
1	06/29/2015	07/02/2015	IP 71124.06	Radioactive Gaseous and Liquid Effluent Treatment	
			<b>7111111B - REQUAL INSP W/ P/F RESULTS</b>		<b>2</b>
1	09/14/2015	09/18/2015	IP 7111111B	Licensed Operator Requalification Program	
			<b>71124 - REMP</b>		<b>1</b>
1	07/20/2015	07/23/2015	IP 71124.07	Radiological Environmental Monitoring Program	
			<b>71152B - PI&amp;R - BIENNIAL</b>		<b>4</b>
1	08/03/2015	08/07/2015	IP 71152B	Problem Identification and Resolution	
1	08/17/2015	08/21/2015	IP 71152B	Problem Identification and Resolution	
			<b>TRI FI - TRIENNIAL FIRE PROTECTION INSPECTION</b>		<b>4</b>
1	11/02/2015	11/06/2015	IP 7111105T	Fire Protection [Triennial]	
1	11/16/2015	11/20/2015	IP 7111105T	Fire Protection [Triennial]	
			<b>71151 - RP CHEM PI VERIFY</b>		<b>1</b>
1	11/16/2015	11/19/2015	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	11/16/2015	11/19/2015	IP 71124.02	Occupational ALARA Planning and Controls	
1	11/16/2015	11/19/2015	IP 71151	Performance Indicator Verification	
			<b>TI-191 - FUKUSHIMA LESSONS-LEARNED</b>		<b>1</b>
1	02/15/2016	02/19/2016	IP 2515/191	Inspection of Licensee's Responses to Order EA-12-049, EA-12-051 & EP Info Request March 12, 2012	
			<b>71124 - 01 EXPOSURE CONTROL</b>		<b>1</b>
1	03/21/2016	03/24/2016	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
			<b>71124 - 05 RAD MONITORING INSTRUMENTATION</b>		<b>1</b>
1	05/02/2016	05/06/2016	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>7111117T - PERMANENT PLANT MODIFICATIONS</b>		<b>3</b>
1	05/02/2016	05/06/2016	IP 7111117T	Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	
1	05/16/2016	05/20/2016	IP 7111117T	Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	
			<b>7111107T - TRIENNIAL HEAT SINK</b>		<b>1</b>
1	07/18/2016	07/22/2016	IP 7111107T	Heat Sink Performance	
			<b>2/27EXM - PILGRIM INITIAL EXAM</b>		<b>4</b>
1	01/30/2017	02/05/2017	U01945	FY17-PILGRIM INITIAL OPERATOR LICENSING EXAM	
1	02/27/2017	03/03/2017	U01945	FY17-PILGRIM INITIAL OPERATOR LICENSING EXAM	
			<b>EP - EP EXERCISE EVALUATION</b>		<b>4</b>
1	11/14/2016	11/18/2016	IP 7111401	Exercise Evaluation	

This report does not include INPO and OUTAGE activities.  
This report shows only on-site and announced inspection procedures.

Enclosure

**Pilgrim**  
**Inspection / Activity Plan**  
**07/01/2015 - 06/30/2017**

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
			<b>71124 - 71151 PI VERIFY 71124.01EXPCONT05RAD MON</b>		<b>1</b>
1	11/21/2016	11/25/2016	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	11/21/2016	11/25/2016	IP 71124.05	Radiation Monitoring Instrumentation	
1	11/21/2016	11/25/2016	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1	11/21/2016	11/25/2016	IP 71151-PR01	RETS/ODCM Radiological Effluent Occurrences	
			<b>7111108G - INSERVICE INSPECTION</b>		<b>1</b>
1	04/17/2017	04/21/2017	IP 7111108G	Inservice Inspection Activities - BWR	
			<b>71124 - 71124.01 RAD HAZARD AND 71124.02 ALARA</b>		<b>1</b>
1	04/24/2017	04/27/2017	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	04/24/2017	04/27/2017	IP 71124.02	Occupational ALARA Planning and Controls	
			<b>71124.08 - RADWASTE</b>		<b>1</b>
1	06/05/2017	06/09/2017	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
			<b>71124 - RAD HAZ- ALARA- AIRBORNE-DOSIMETRY</b>		<b>1</b>
1	06/19/2017	06/23/2017	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	06/19/2017	06/23/2017	IP 71124.02	Occupational ALARA Planning and Controls	
1	06/19/2017	06/23/2017	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1	06/19/2017	06/23/2017	IP 71124.04	Occupational Dose Assessment	

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