



**Entergy Nuclear Operations, Inc.**  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

**Stephen J. Bethay**  
Director, Nuclear Assessment

July 31, 2007

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

**SUBJECT:** Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
Docket 50-293  
License No. DPR-35

Pilgrim Refueling Outage (RFO) – 16, Inservice Inspection (ISI) Summary Report

**LETTER NUMBER:** 2.07.065

Dear Sir or Madam:

The enclosed report provides a tabulation of all inservice examinations and code repairs/replacements performed at Pilgrim Station from the end of RFO-15 through RFO-16. Copies of the examination vendor reports and data sheets are retained at Pilgrim Station for NRC review, if required.

This submittal fulfills the requirements of ASME Section XI, 1989 Edition, Paragraph IWA-6230.

There are no commitments contained in this letter.

If you have any questions regarding the information contained in this letter, please contact Ed Sanchez at (508) 830-8877.

Sincerely,

Stephen J. Bethay  
Director Nuclear Safety Assessment

**Enclosure:** Inservice Inspection Summary Report for Refuel Outage 16 at Pilgrim Nuclear Power Station, dated July 27, 2007 (11 pages)

A047

NER

cc: Mr. James S. Kim, Project Manager  
Office of Nuclear Reactor Regulation  
Mail Stop: 0-8B-1  
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U.S. NRC, Region 1  
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Senior Resident Inspector  
Pilgrim Nuclear Power Station

ENCLOSURE TO ENTERGY LETTER No. 2.07.065

**Inservice Inspection (ISI) Summary Report for Refuel Outage 16  
at Pilgrim Nuclear Power Station,**

**Dated July 27, 2007  
(11 pages)**



207065 Enclosure

	<b>NUCLEAR MANAGEMENT MANUAL</b>	QUALITY RELATED	EN-DC-147	REV. 2
		INFORMATIONAL USE	PAGE 13 OF 22	
Engineering Reports				

**ATTACHMENT 9.1** **ENGINEERING REPORT COVER SHEET & INSTRUCTIONS**  
**SHEET 1 OF 1**

	<b>Engineering Report No.</b> PNPS-RPT-07-00001 <b>Rev.</b> 0 Page <u>1</u> of <u>11</u> Attachment 1 pages 1-3 Attachment 2 pages 1-4 Attachment 3 pages 1-2
	<b>ENTERGY NUCLEAR</b> <b>Engineering Report Cover Sheet</b>
<b>Engineering Report Title:</b> PNPS OWNER'S ACTIVITY REPORT (OAR) for FIRST OUTAGE, FIRST PERIOD OF FOURTH INTERVAL	
<b>Engineering Report Type:</b> New <input checked="" type="checkbox"/> Revision <input type="checkbox"/> Cancelled <input type="checkbox"/> Superseded <input type="checkbox"/>	
<b>Applicable Site(s)</b>	
IP1 <input type="checkbox"/> IP2 <input type="checkbox"/> IP3 <input type="checkbox"/> JAF <input type="checkbox"/> PNPS <input checked="" type="checkbox"/> VY <input type="checkbox"/> WPO <input type="checkbox"/> ANO1 <input type="checkbox"/> ANO2 <input type="checkbox"/> ECH <input type="checkbox"/> GGNS <input type="checkbox"/> RBS <input type="checkbox"/> WF3 <input type="checkbox"/> DRN No. <input type="checkbox"/> N/A; <input checked="" type="checkbox"/>	
<b>Report Origin:</b> <input checked="" type="checkbox"/> Entergy <input type="checkbox"/> Vendor Vendor Document No.: <u>n/a</u>	
<b>Quality-Related:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Prepared by: _____ Responsible Engineer (Print Name/Sign)	Date: <u>7/26/07</u>
Design Verified: _____ Design Verifier (if required) (Print Name/Sign)	Date: <u>n/a</u>
Reviewed by: _____ Reviewer (Print Name/Sign)	Date: <u>07/26/07</u>
Reviewed by*: _____ ANI (if required) (Print Name/Sign)	Date: <u>7/27/07</u>
Approved by: _____ Supervisor (Print Name/Sign)	Date: <u>07/27/2007</u>

\* For ASME Section XI Code Program plans per ENN-DC-120, if required

**FORM OAR-1  
OWNERS ACTIVITY REPORT**

Report Number PNPS-RPT-07-00001, Rev. 0

Owner Entergy Nuclear Northeast, 440 Hamilton Ave, White Plains, New York 10601  
(Name and Address of Owner)

Plant PILGRIM NUCLEAR POWER STATION, 600 Rocky Hill Road, Plymouth, MA 02360  
(Name and Address of Plant)

Plant Unit 1 Commercial Service Date June 8, 1972 Refueling Outage Number 16

Current Inspection Interval 4<sup>th</sup>  
(1st, 2nd, 3rd, 4th, Other)

Current Inspection Period 1<sup>st</sup>  
(1st, 2nd, 3rd)

Edition and Addenda of Section XI applicable to the Inspection Plan 1998 Edition, 2000 Addenda  
Date and Revision of Inspection Plan: PNPS ISI Program Plan, No. PNPS-RPT-05-001 Rev. 0

Edition and Addenda of ASME Section XI applicable to Repairs and Replacements, if different than the Inspection Plan N/A

**CERTIFICATE OF CONFORMANCE**

I certify that the statements made in this Owners Activity Report are correct, and that the examinations, tests, repairs, replacements, evaluations and corrective measures represented by this report conform to the requirements of Section XI.

Certificate of Authorization No. N/A (If applicable) Expiration Date N/A

Signed STEVEN WOODS <sup>PAC MGR</sup> [Signature] Date 07/27/2007  
Owner or Owner's designee, Title

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by HSB-CT of Hartford, Connecticut have inspected the components described in this Owners Report during the period 5/10/2005 to 5/5/2007, and state that to the best of my knowledge and belief, the Owner has performed all the activities described in the Repair/Replacement Plan in accordance with the requirements of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the activities described in the Repair/Replacement Plan. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

[Signature] Commissions NB11916 ABNI MA1651  
Inspector's Signature National Board, State, Province, and Endorsements

Date 7/27/07

TABLE 1

## ABSTRACT OF EXAMINATIONS AND TESTS

Examination Category	Total Examinations Required for the Interval	Total Examinations Credited for this Period	Total Examinations Credited (%) for the Period	Total Examinations Credited (%) To Date for the Interval	Remarks
<b>CLASS 1</b>					
B-A	39	0	0%	0%	Permanent relief for the period of the initial license from the code requirements for inspection of RPV circumferential welds is approved in relief PRR-28.
B-D	56	10	18%	18%	Table IWB-2500-1 (Note 2) allows a maximum credit of 50% for the 1st period.
B-F	0	0	0%	0%	B-F welds are inspected under Category R-A of the PNPS Risk-Informed Program and the PNPS augmented BWRVIP-75A IGSCC weld inspection program. Extent and frequency are in accordance with BWRVIP-75A criteria.
B-G-1	23	1	4%	4%	
B-G-2	71	14	20%	20%	
B-J	0	0	0%	0%	B-J welds are inspected under Category R-A in the PNPS Risk-Informed Program and the PNPS augmented BWRVIP-75A IGSCC weld inspection program.
B-K	10	4	40%	40%	
B-L-1	0	0	0%	0%	Not applicable to PNPS (pumps do not have casing welds)
B-L-2	Once per interval (1 of 2 pumps)	1	50%	50%	Recirc pump P-201B was disassembled for maintenance during RFO16.
B-M-1	4	0	0%	0%	

ABSTRACT OF EXAMINATIONS AND TESTS					
Examination Category	Total Examinations Required for the Interval	Total Examinations Credited for this Period	Total Examinations Credited (%) for the Period	Total Examinations Credited (%) To Date for the Interval	Remarks
B-M-2	Once per interval (23 of 48 valves)	5	21%	21%	Exam required only when a valve is disassembled for maintenance, repair, or volumetric exam. Exams are limited to at least one valve within each group of valves that are of the same size, constructional design and manufacturing method, and that perform similar functions in the system.
B-N-1	3	1	33%	33%	Exams conducted within this code category are performed in accordance with the PNPS BWRVIP vessel inspection program.
B-N-2	72	0	0%	0%	Exams conducted within this code category are performed in accordance with the PNPS BWRVIP vessel inspection program.
B-O	4	0	0%	0%	Welds in 10% of peripheral CRD housings (i.e. 10% of 36 housings)
B-P	25	5	20%	20%	Includes Class 1 System Pressure Test
<b>CLASS 2</b>					
C-A	5	2	40%	40%	
C-B	6	0	0%	0%	
C-C	31	6	19%	19%	
C-D	0	0	0%	0%	
C-F-1	12	0	0%	0%	
C-F-2	82	16	20%	20%	
C-G	11	2	18%	18%	
C-H	30	13	43%	43%	includes SLT RHR-13
<b>CLASS 3</b>					
D-A	12	2	17%	17%	
D-B	69	9	13%	13%	
<b>CLASS MC</b>					

ABSTRACT OF EXAMINATIONS AND TESTS					
Examination Category	Total Examinations Required for the Interval	Total Examinations Credited for this Period	Total Examinations Credited (%) for the Period	Total Examinations Credited (%) To Date for the Interval	Remarks
E-A	38	16	42%	42%	The General Visual Examination is required once each period. A VT-3 examination of the BWR Vent system and wetted surfaces of submerged areas is required once per interval.
E-C	24	22	92%	92%	
IWF COMPONENT SUPPORTS					
CLASS 1 SNUBBER ATTACHMENTS	14	3	21%	21%	
CLASS 2 SNUBBER ATTACHMENTS	2	0	0%	0%	
CLASS 3 SNUBBER ATTACHMENTS	1	0	0%	0%	
SUPPORTS OTHER THAN PIPING SUPPORTS	21	3	14%	14%	
TOTAL CATEGORY F-A	136	32	24%	24%	
RISK-INFORMED INSPECTION PROGRAM					
CLASS 1	71				PNPS has a Class 1 Risk-Informed inspection program based on CC N-578 and EPRI Topical Report TR-112657.
CLASS 2	0				
CLASS 3	0				
R-A	71	11	15%	15%	PNPS has a Risk-Informed inspection program for Class 1 only

TABLE 2

## ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE

Examination Category	Item Number	Item Description	Flaw Characterization (IWA-3300)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes/No)	Results
B-G-2	B7.70	Class 1 pressure retaining bolting	Bolting on valve MSIV 203-2C found with thread damage	Yes	Accepted for continued service after threads of five bolts were re-conditioned per Maintenance Request 02120627. As-found condition documented per CR-PNP-2007-1986.
B-P	B15.50	Class 1 System Pressure Test	Non-pressure boundary leakage discovered during performance of the Class 1 System Pressure Test following RFO16	Yes	Accepted for Continued Service - The non-pressure boundary leakages were either stopped by mechanical methods (e.g. tightening valve packing) or stopped leaking due to thermal expansion associated with higher operating temperatures during startup operations. Leakages were documented and evaluated per CR-PNP-2007-2379 and Maintenance Requests 05120716 and 07107808.
B-M-2	B12.50	Valve Internals	HPCI check valve 23-CK-2301-7 found during RFO16 maintenance to have corrosion and wear on valve disc seating surfaces.	No	Accepted for continued service after valve non-pressure boundary seating surfaces were re-conditioned per Maintenance Request P9600772 and re-inspected. Condition documented per CR-PNP-2007-1805.

TABLE 2

## ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE

Examination Category	Item Number	Item Description	Flaw Characterization (IWA-3300)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes/No)	Results
E-A	E1.20	BWR Vent System	Drywell-to-torus vent system interior surfaces have areas of degraded coatings and moderate corrosion.	Yes	Accepted for Continued Service - Areas with coating degradation and surface corrosion were identified but no structural degradation was identified. The containment is fully functional and no significant degradation is expected during operation per CR-PNP-2007-2003 disposition. Identified areas to be recoated under Maintenance Request 07106963 during future outages.
E-A	E1.11	IWE General Visual Walkdown	Protective coatings of drywell and torus interior and exterior surfaces have conditions that exceed acceptance criteria in Engineering Standard ENN-EP-S-001	Yes	Accepted for Continued Service - Areas of flaking coating and local surface rusting were detected during the IWE General Visual Walkdown of primary containment surfaces during RFO16 as documented in CR-PNP-2007-2093. No evidence of degradation that could affect containment structural integrity, leak tightness or containment support functionality were detected. Maintenance Requests 07107301 and 07107302 were initiated to perform coating repairs during RFO17.

TABLE 2

## ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE

Examination Category	Item Number	Item Description	Flaw Characterization (IWA-3300)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes/No)	Results
E-C	E4.11	IWE Annulus Drains	Water found in collection container under one annulus air gap drain line in Torus Room	Yes	Accepted for Continued Service - Water was found in the collection container under one annulus air gap drain line in Torus Room prior to flooding down during RFO16 as documented in CR-PNP-2007-2050. Chemical testing of the collected water determined it to be RBCCW water (due to presence of nitrates) and did not originate on the refuel floor. Source of the water was eventually determined to be water from venting activities during valve testing on top of the torus directly above the collection container.
F-A	F1.20-A	Pipe Support	RHR pipe support H-10-1-180 found during RFO16 to have four undocumented pieces of electrical conduit welded to support members.	Yes	Accepted for Continued Service - As-built condition is documented on CR-PNP-2007-1005. Support drawing will be revised to reflect as-built condition per CR-PNP-2007-00831 CA-008.
F-A	F1.30-B	Pipe Support	RBCCW pipe support H-30-1-66 found during RFO16 to have corroded sliding surfaces exceeding inspection procedure acceptance criteria.	Yes	Accepted for Continued Service - As-found condition documented on CR-PNP-2007-1072. Support corroded surfaces were cleaned per Maintenance Request 07105090 and accepted.

TABLE 2

## ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE

Examination Category	Item Number	Item Description	Flaw Characterization (IWA-3300)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes/No)	Results
F-A	F1.20-C	Hydraulic Snubber	HPCI snubber H-23-1-12SS (23-20-36) found during RFO16 with low fluid.	No	Snubber as-found condition during RFO16 documented as low fluid level in CR-PNP-2007-1298. Condition was found as part of an expanded inspection sample in response to suspected seal issues in all 20 kip snubbers that were rebuilt during 2005. Component was removed and functional testing determined the snubber to be operable. Snubber was subsequently replaced during RFO16 prior to resuming operation.
R-A	R1.20	Class 1-circumferential weld	Surface scratching caused on and around Core Spray piping butt weld 14-B-20 while mechanically removing grout from around pipe weld surface in preparation for scheduled ISI exam.	No	Accepted for continued service after scratches were removed by mechanical surface conditioning methods in accordance with CR-PNP-2007-1910. Surface scratches caused by grout removal tools were shallow and minor in nature.

TABLE 3

## ABSTRACT OF REPAIRS, REPLACEMENTS OR CORRECTIVE MEASURES REQUIRED FOR CONTINUED SERVICE

CODE CLASS	Repair/Replacement or Corrective Measure	Item Description and Description of Work	Flaw or Relevant Condition Found During Scheduled Examination or Test (Yes/No)	Close Date	Repair/Replacement Plan Number
1	Replacement	Replace CRDs in RFO16 at 23 core locations	No	3/7/2007	MR 05110469
1	Repair	Code-rejectable flaw in nozzle-to-safe end weld 2R-N2K-1 was repaired by installation of a full structural weld overlay.	Yes	4/20/2007	MR 06100506
1	Replacement	Replace Recirc pump P-201B rotating element & cover bolting	No	5/7/2007	MR 03121989
1	Replacement	Replace RPV head vent piping flange studs and nuts with new material	No	8/19/2007	MR 05116947
2	Replacement	Replace CRD mechanical snubber SS-3-25-06	No	4/13/2007	MR 05117985
2	Replacement	Replace RHR MO1001-34A valve disc	No	4/19/2007	MR 06101196
2	Replacement	Replace CRD mechanical snubber SS-3-25-07	No	4/20/2007	MR 05117984
2	Repair	Repair RHR MO1001-7C valve disc	No	4/30/2007	MR 07105779
2	Replacement	Replace RHR Hx E-207B studs and nuts	No	5/7/2007	MR 07105865
3	Replacement	Replace pressure-retaining pump columns, bolting, expansion joint in SSW pump P-208A	No	6/3/2005	MR 03102360
3	Replacement	Replace parts P-202C discharge check valve 30-CK-419	No	6/21/2005	MR 05104647
3	Replacement	Replace parts P-202D discharge check valve 30-CK-422	No	6/29/2005	MR 05104645
3	Replacement	Replace in-kind TBCCW Hx E-122B bolting (studs/nuts)	No	1/25/2006	MR 02104136
3	Replacement	Replace in-kind SSW piping bolting (studs/nuts)	No	2/1/2006	MR 02104136
3	Replacement	Replace E-122B SSW piping blank flange	No	2/1/2006	MR 02104136
3	Replacement	Replace E-122B SSW piping blank flange bolting	No	2/1/2006	MR 02104136
3	Replacement	Replace RBCCW pump P-202B mechanical seal (in-kind)	No	3/20/2006	MR 06103973
3	Replacement	Replace of RBCCW pump P-202B mechanical seal (in-kind)	No	6/1/2006	MR 06108261
3	Replacement	Replace parts SSW pump P-208E, exp joint, air vent vlv, disch check vlv 29-CK-3880E	No	7/5/2006	MR 06107824
3	Repair	Modify pressure-retaining part (disc) in SSW valve 29-HO-3A	No	10/18/2006	MR 06115164
3	Replacement	Replace parts RBCCW pump P-202D suction & disch flange bolting	No	11/2/2006	MR 05112179
3	Replacement	Replace SSW 29-HO-3829 valve	No	4/18/2007	MR P9500772

TABLE 3

## ABSTRACT OF REPAIRS, REPLACEMENTS OR CORRECTIVE MEASURES REQUIRED FOR CONTINUED SERVICE

CODE CLASS	Repair/Replacement or Corrective Measure	Item Description and Description of Work	Flaw or Relevant Condition Found During Scheduled Examination or Test (Yes/No)	Close Date	Repair/Replacement Plan Number
3	Replacement	Replace SSW 29-HO-3A and -5A valves	No	4/20/2007	MR 06115726
3	Replacement	Replace SSW 29-HO-3800 valve	No	4/20/2007	MR P9402370
3	Replacement	Replace SSW 29-HO-3814 valve	No	4/20/2007	MR P9900388
3	Replacement	Replace SSW 29-HO-3815 valve	No	4/20/2007	MR P9900389
3	Replacement	Replace SSW spool JF-29-1-7	No	4/20/2007	MR 05117196
3	Replacement	Replace SSW spool JF-29-2-2	No	4/20/2007	MR 05117197
3	Replacement	Replace RBCCW P-202C pump suction valve 30-HO-38	No	4/23/2007	MR 04106576
3	Replacement	Replace SSW 29-HO-3842 valve	No	4/24/2007	MR P9500773
3	Replacement	Replace parts RBCCW pump P-202D	No	5/4/2007	MR 07102534