



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

August 2, 2017

EA-17-086

Mr. Brian Sullivan  
Site Vice President  
Entergy Nuclear Operations, Inc.  
600 Rocky Hill Road  
Plymouth, MA 02360-5508

**SUBJECT: CONFIRMATORY ACTION LETTER – PILGRIM NUCLEAR POWER STATION**

Dear Mr. Sullivan:

This Confirmatory Action Letter (CAL) confirms the commitments made by Entergy Nuclear Operations, Inc. (Entergy) to the U.S. Nuclear Regulatory Commission (NRC) concerning Pilgrim Nuclear Power Station (Pilgrim). In a letter dated July 28, 2017, "Pilgrim Nuclear Power Station (PNPS) Recovery Plan" (ML17212A571<sup>1</sup>) (Enclosure 1), Entergy notified the NRC staff of its revised plan to perform specific corrective actions to resolve the causes for the performance decline that led to Pilgrim's transition to the Multiple/Repetitive Degraded Cornerstone Column (Column 4) of the NRC's Reactor Oversight Process (ROP) Action Matrix, as discussed in the 2015 mid-cycle assessment letter, dated September 1, 2015 (ML15243A259). The NRC understands that you will implement the action items described in Enclosure 1.

In our 2015 mid-cycle assessment letter, we informed you that Pilgrim entered Column 4, or the Multiple/Repetitive Degraded Cornerstone Column, of the NRC's ROP Action Matrix as described in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program." The entry into Column 4 was caused by the issuance of an additional White finding in the Mitigating Systems cornerstone while Pilgrim was in the Degraded Cornerstone Column (Column 3) of the ROP Action Matrix for more than five consecutive quarters. Pilgrim had entered the Degraded Cornerstone Column for two White inputs under the Initiating Events cornerstone. Four scrams in 2013 caused two performance indicators in the Initiating Events cornerstone, Unplanned Scrams per 7000 Critical Hours and Unplanned Scrams with Complications, to cross the threshold from Green to White (ML15026A069). The additional White finding documented on September 1, 2015 (ML15230A217), in the Mitigating Systems cornerstone was associated with the failure to identify, evaluate, and correct a significant condition adverse to quality associated with the Pilgrim 'A' safety relief valve (SRV) which resulted in the 'C' SRV failing to open on January 27, 2015, during a loss of offsite power event.

NRC IMC 0305 specifies the actions that will be taken when plant performance is in Column 4 of the ROP Action Matrix. Specifically, you developed a recovery plan based on the results of your

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<sup>1</sup> Designation in parentheses refers to an Agencywide Documents Access and Management System (ADAMS) accession number. Documents referenced in this report are publicly available using the accession number in ADAMS.

evaluation of the issues that led to Pilgrim's degraded performance, and as required by IMC 0305, the NRC staff reviewed your recovery plan in accordance with Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input." The results of this inspection are documented in NRC Inspection Report 05000293/2016011 (ML17129A217). Based on these inspection results, the NRC identified weaknesses in your recovery plan that needed to be addressed.

As discussed in your July 28 letter, you have evaluated the results of the IP 95003 supplemental inspection, revised your recovery plan to address the identified issues, and issued those revisions in the PNPS Recovery Plan that is included in Enclosure 1. The plan consists of 11 Area Action Plans that identify the key improvement actions and the effectiveness measures (e.g., metrics and assessments) that will be used to monitor future performance.

The NRC reviewed the revised PNPS Recovery Plan and determined that effective implementation of the plan would satisfactorily address the fundamental problem areas that led to the transition of Pilgrim to Column 4 in a manner that should lead to sustained performance improvement. Included with this CAL as Enclosure 2 is a subset of the corrective actions described in the PNPS Recovery Plan that the NRC staff determined are necessary to address the key performance issues identified by our assessment activities including the IP 95003 inspection. The NRC staff will assess the effectiveness of Entergy's implementation of these identified corrective actions and evaluate whether the safety performance of Pilgrim has demonstrated sustained improvement warranting transition of Pilgrim out of Column 4 in accordance with IMC 0305, Section 10.02d, paragraph 7. To support the NRC staff's inspection and assessment, the actions listed in Enclosure 2 have been categorized into seven inspection focus areas based on the results of the NRC's IP 95003 supplemental inspection.

Accordingly, based on our review of your July 28 letter, and the telephone discussion between Daniel Dorman, Regional Administrator, NRC Region I, and Brian Sullivan, Pilgrim Site Vice President on August 2, 2017, it is our understanding that Entergy commits to take the actions identified in Enclosure 2 by the dates specified. The expected completion dates listed in Enclosure 2 indicate the dates that the items listed under each focus area should be ready for inspection.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232(a), you are required to:

1. Notify me immediately, in writing, if your understanding differs from that set forth above;
2. Notify me, in writing, if for any reason you cannot complete the corrective actions identified in Enclosure 2 within the specified schedule and advise me, in writing, of your modified schedule in advance of the change;
3. Notify me, in writing, if for any reason you intend to change, deviate from or not complete any of the documented actions listed in Enclosure 2, and advise me, in writing, of the changes or deviations; and
4. Notify me, in writing, when you have completed all of the actions addressed in this CAL.

These written notifications must be provided to the Regional Administrator, Region I, at 2100 Renaissance Blvd., King of Prussia, PA 19406-2713. The NRC plans to conduct follow-up inspections to review the implementation of the corrective actions listed in Enclosure 2 and

associated effectiveness reviews to verify the actions have been completed and are adequate to support sustainable performance improvement. Inspectors may also review additional corrective actions listed in the PNPS Recovery Plan on a sampling basis.

To facilitate the NRC follow-up inspections, we request that you inform us in a timely manner of changes to any of the individual corrective actions listed under each of the seven inspection focus areas, when each individual corrective action has been completed and is ready for inspection, and when the Area Action Plans listed in Enclosure 2 are complete and confirmed to be effective. Following these notifications, the NRC will independently verify via inspection the completion of the Enclosure 2 actions and effectiveness reviews. The results of these inspections will provide information for future performance assessments of Pilgrim, and will serve as the basis for the NRC to determine if the CAL can be closed and whether Pilgrim should transition out of Column 4 of the ROP Action Matrix or if the NRC should take additional regulatory action, in accordance with IMC 0305.

Issuance of this CAL does not modify or amend Pilgrim's license and does not preclude issuance of an Order making the above commitments legally binding requirements or requiring other actions on the part of Pilgrim. In addition, the NRC is not precluded from taking enforcement action for violations of NRC requirements that may have prompted the issuance of the CAL. Failure to meet the commitments in this CAL may result in an Order if Pilgrim's performance, as demonstrated by the failure to meet CAL commitments, does not provide reasonable assurance that the NRC can rely on Pilgrim to meet the NRC's requirements and protect public health and safety or the common defense and security.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice and Procedure," a copy of this letter and your response will be made available electronically for public inspection in the NRC Public Document Room or in the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, security-related, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

If you have any questions concerning this matter, please contact Arthur Burritt of my staff. Mr. Burritt can be reached at (610) 337-5069.

Sincerely,

*/RA/*

Daniel H. Dorman  
Regional Administrator

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

Enclosures:

1. Pilgrim Nuclear Power Station Recovery Plan
2. List of Inspection Focus Areas to Assess Sustained Performance Improvement at Pilgrim

SUBJECT: CONFIRMATORY ACTION LETTER – PILGRIM NUCLEAR POWER STATION  
 Dated August 2, 2017

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

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**Brian R. Sullivan**  
Site Vice President

July 28, 2017

Mr. Daniel H. Dorman  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
2100 Renaissance Blvd., Suite 100  
King of Prussia, PA 19406-2713

**SUBJECT:** Pilgrim Nuclear Power Station Recovery Plan

Pilgrim Nuclear Power Station  
Docket No. 50-293  
Renewed License No. DPR-35

**LETTER NUMBER:** 2.17.056

Dear Mr. Dorman:

This letter transmits the Pilgrim Nuclear Power Station (PNPS) Recovery Plan (RP).

### **Purpose of the Recovery Plan**

The RP contains the actions that Entergy Operations, Inc. (Entergy) is taking to address the decline in performance of PNPS, including actions to address the issues that led to PNPS being placed in the Multiple/Repetitive Degraded Cornerstone Column (Column IV) of the NRC Action Matrix and issues identified during third-party assessments of PNPS's safety culture.

The purpose of the RP is not only to address specific issues and deficiencies, but to correct the causes of the fundamental problems that led to the decline in PNPS's performance, to achieve ongoing performance improvement, and to lay the foundation for sustained long-term safe and reliable operation and a return to excellent performance. The RP is designed to ensure that PNPS maintains a clear focus on nuclear safety as the top operational priority and primary goal of station activities.

### **Basis and Structure of the Recovery Plan**

The actions included in the RP have been developed based upon a comprehensive evaluation of site performance deficiencies to identify the fundamental problems and problem areas associated with PNPS's decline in performance. The actions include consideration of the results of a Third-Party Safety Culture Assessment and the results of the NRC's 95003 inspection. Evaluations were conducted pursuant to the PNPS Recovery Process and applicable PNPS Corrective Action Program (CAP) procedures to determine the causes of those fundamental problems and problem areas to develop corrective actions. Those actions have been entered into the CAP and will be tracked to completion.

The RP contains those actions which PNPS is placing primary reliance on to resolve issues and achieve sustainable performance improvement at PNPS. Those actions are organized into eleven Area Action Plans within several Improvement Areas, as follows:

Focus Area	Area Action Plan
Nuclear Safety Culture	Nuclear Safety Culture
CAP	CAP
Human Performance	Procedure Use & Adherence and Operability Determinations-Functionality Assessments
Operations Standards and Site Leadership	Operations Standards and Site Leadership, Risk Recognition/Decision-Making
Procedure Quality	Procedure Quality
Safety Relief Valve (SRV) White Finding	SRV White Finding
Engineering Programs and Equipment Performance	Engineering Programs, Equipment Reliability, and Work Management

The actions in these plans are designed to not only achieve improvement in the near term, but also to lay the foundation for sustainable, long-term safe and reliable operations, and a return to excellent performance.

**Ensuring Quality Implementation and Effectiveness of the Recovery Plan**

The effectiveness of the RP will depend upon rigorous, high-quality implementation of the actions contained in it. Also, careful monitoring is needed to ensure that these actions are having the intended effect of resolving problems and improving performance. Entergy has established a number of measures to ensure timely and high-quality completion of RP actions, to evaluate their effectiveness, and to define further action as necessary to address areas where the actions are not having the desired impact. These measures include:

- A formal closure process will be used to ensure that RP actions contained in the Area Action Plans are completed and that the objective evidence for closure of those actions is documented. Closure of Area Action Plan actions will be tracked by the PNPS Recovery Team and in the PNPS CAP.
- Action Closure Review Boards will provide reviews, independent of the action owners, of the basis for completion and closure of each Area Action Plan action to confirm that the steps implemented meet the intent and purpose of the action.
- Metrics and/or other effectiveness measures for each Area Action Plan, including focused assessments or surveys in some areas, will be used to measure whether the implementation of the action plan is achieving its intended results, and provide the

basis for identification of areas in which adjustment or supplementation of the action plan is needed.

- Effectiveness Review Challenge Boards (ERCBs) comprised of senior station leaders and Entergy fleet representatives, will examine progress in implementing each action plan and achieving intended results, and will recommend areas in which adjustment or supplementation of the action plan is needed.
- Entergy executive oversight through a Recovery Executive Review Board (RERB) will provide Entergy fleet level oversight of RP implementation and effectiveness. The RERB includes the Entergy Chief Nuclear Officer as well as independent (non-Entergy) members with experience in nuclear power plant recovery and oversight, and will make recommendations for any needed adjustments or supplementation of the RP.

The above implementation, oversight, and effectiveness measures and process are being performed in accordance with fleet and station procedures.

Prior to closure of an Area Action Plan, a formal final effectiveness review will be implemented, and a Closure Report will be prepared to address:

1. Whether actions contained within the Area Action Plan are substantially complete or are following a predefined work off plan.
2. Whether improvement in performance has occurred in the area addressed by the Area Action Plan.
3. Whether the progress achieved and steps to ensure ongoing improved performance are sustainable.

The closure report for each Area Action Plan will be reviewed and approved by the site and corporate members of the ERCB and the PNPS Site Vice President prior to closure of that Area Action Plan.

### **Potential Adjustment of Improvement Actions**

Entergy is committed to rigorous implementation of the RP, and to ensuring its effectiveness. As implementation proceeds, there may be areas in which it is determined that a particular action is not effective and requires modification or additional actions are needed to achieve expected outcomes and improvement. In such cases, Entergy may change specific actions. Additionally, during implementation of the PNPS RP, broader improvement initiatives are anticipated for the Entergy nuclear fleet. These fleet initiatives may result in changes to actions in the PNPS plan as improvements are made and standards defined for the Entergy fleet as a whole. Changes to the PNPS RP will be controlled through the PNPS CAP process and reviewed and approved in accordance with PNPS Recovery Project procedures. Entergy will keep the NRC apprised in a timely manner of changes to RP actions.

In conclusion, Entergy has developed a comprehensive plan to address the issues that have led to the decline in PNPS performance. This plan is based upon a thorough evaluation of those weaknesses, their causes, and related safety culture issues, as well as insights from the NRC 95003 inspection. The goal of the plan is to return PNPS to excellent performance with a focus on nuclear safety as the overriding priority. The plan includes measures to ensure that it is



rigorously implemented and closely monitored for effectiveness, and contains elements designed to achieve sustainable improvement for the long term.

If you have any questions or require additional information, please contact Mr. David E. Noyes at (508) 830-7800.

Sincerely,



Brian R. Sullivan  
Site Vice President

BRS/dn/pm

Attachment: Pilgrim Nuclear Power Station Recovery Plan

cc:

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Mr. Arthur L. Burritt, Branch Chief  
Division of Reactor Projects, Region I  
U.S. Nuclear Regulatory Commission  
2100 Renaissance Blvd., Suite 100  
King of Prussia, PA 19406-2713

Mr. John G. Lamb, Senior Project Manager  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Stop O-8C2A  
Washington, DC 20555-0001

NRC Resident Inspector  
Pilgrim Nuclear Power Station

**Attachment**

Letter Number 2.17.056

Pilgrim Nuclear Power Station Recovery Plan

## 1.0 PURPOSE

The Pilgrim Nuclear Power Station (PNPS) Recovery Plan (RP) contains the actions that Entergy Operations, Inc. (Entergy) is taking to address the decline in performance of PNPS, including actions to address the issues that led to PNPS being placed in the Multiple/Repetitive Degraded Cornerstone Column (Column IV) of the NRC Action Matrix and issues identified during third-party assessments of PNPS's safety culture.

The purpose of the RP is not only to address specific issues and deficiencies, but to correct the causes of the fundamental problems that led to the decline in PNPS's performance, to achieve performance improvement, and to lay the foundation for sustained, long-term safe and reliable operation and a return to excellence. In particular, the RP is designed to ensure that PNPS maintains a clear focus on nuclear safety as the top operational priority and primary goal of station activities.

The RP contains those actions upon which Entergy is placing primary reliance to attain the overall improvement goals for PNPS. This Area Action Plan Summary identifies the actions contained within each Area Action Plan and describes the metrics and other effectiveness measures that PNPS has established to evaluate whether the RP is achieving its desired outcomes in each area.

## 2.0 BASIS FOR THE RECOVERY PLAN

The actions included in the RP have been developed based upon a comprehensive evaluation of site performance deficiencies to identify the fundamental problems associated with PNPS's decline in performance, and the causes of those problems. The evaluation effort, and development of the RP, have been coordinated and supported by a Recovery Team (RT) that includes individuals with substantial experience in cause analysis and in addressing performance declines at nuclear power stations. This comprehensive evaluation included:

- A systematic historical review of site performance issues from January 1, 2009 to December 1, 2015, specifically including the issues directly indicating the decline of PNPS. Also included was the Safety Relief Valve (SRV) white finding which had not been resolved before entry into Column IV.
- A Third-Party Nuclear Safety Culture Assessment (TPNSCA) as contemplated by NRC Inspection Manual Chapter 0305. The TPNSCA consisted of a nuclear safety culture survey and an assessment of safety culture by a team of outside industry experts.
- A systematic review and evaluation of the issues identified during the historical review period and the TPNSCA was conducted as required by Inspection Procedure 95003. This was conducted to determine the fundamental problems and problem areas associated with performance decline.
- Cause evaluations of the fundamental problems and problem areas identified through the comprehensive evaluation of site performance, including the safety culture issues identified through the TPNSCA. These cause evaluations were

conducted pursuant to the requirements of the PNPS Corrective Action Program (CAP) and resulted in the development of Corrective Actions to Prevent Recurrence (CAPRs) and/or other actions to address each area.

- Examination of the findings and issues identified during NRC inspection of PNPS pursuant to Inspection Procedure 95003.

The corrective and improvement actions identified through this process were then reviewed as a whole, and integrated and modified as necessary for consistency and completeness. These actions were then screened and organized into the RP Area Action Plan structure. RP actions are being tracked and implemented through the PNPS CAP, and also tracked and monitored as described in Section 4.0 below.

### 3.0 STRUCTURE OF THE RECOVERY PLAN

The RP includes the actions upon which Entergy is placing primary reliance in order to resolve issues identified during the comprehensive evaluation and to achieve sustainable performance improvement at PNPS. The RP consists of eleven Area Action Plans, as follows:

Focus Area	Area Action Plan
Nuclear Safety Culture	Nuclear Safety Culture
CAP	CAP
Human Performance	Procedure Use & Adherence and Operability Determinations-Functionality Assessments
Operations Standards and Site Leadership	Operations Standards and Site Leadership, Risk Recognition/Decision-Making
Procedure Quality	Procedure Quality
SRV White Finding	SRV White Finding
Engineering Programs and Equipment Performance	Engineering Programs, Equipment Reliability, and Work Management

The actions in these plans include the following:

- CAPRs identified, which are designed to prevent recurrence of a root cause for a fundamental problem.
- Actions needed to address the causes of nuclear safety culture issues as identified during cause analysis of those issues.

- Actions considered necessary to achieve substantial improvement in performance in the area being addressed.
- Actions to support ongoing continuous improvement and sustainable safe and reliable performance.

In addition, members of the PNPS management team and the RT added other actions to the Area Action Plans based upon the following considerations:

- Is the action needed to promptly address a fundamental issue for which no CAPR is scheduled to be completed in the near term?
- Is the action needed to address a NRC 95003 inspection issue?

Each Area Action Plan also includes the metrics and/or other effectiveness measures being applied to determine the effectiveness of the actions being taken in achieving the intended results.

#### **4.0 IMPLEMENTATION, CLOSURE, AND EVALUATION OF EFFECTIVENESS**

The following means will be used to ensure tracking of action completion, quality of action implementation, effectiveness of the Area Action Plans in achieving their intended results, and adjustment or supplementation of action plans as needed to achieve those results:

##### **Tracking of Action Completion**

- **The Recovery Team** is tracking implementation and closure of Area Action Plan actions, and providing oversight and support to the closure processes and effectiveness reviews associated with the RP. Closure of RP actions in the Area Action Plans is also being tracked in the PNPS CAP.

##### **Ensuring Quality of Action Implementation**

- **A Formal Closure Process** has been established for Area Action Plan actions. This process includes assembly of a closure documentation package and sign-off by the owner of the action. Closure of RP actions must also meet the requirements of the PNPS CAP.
- **Action Closure Review Boards (ACRBs)** will be used to challenge the basis for completion and closure of actions in the Area Action Plans and confirm that they are sound and meet the intent of the actions as defined in the plan. The membership of each ACRB includes at least one station manager not responsible for the organization performing the corrective action, one RT representative, and other qualified personnel as designated by the RT Manager in charge of the RP.

## **Evaluating Implementation Progress and Effectiveness and Making Needed Adjustments**

- **Metrics and Other Effectiveness Measures** for each Area Action Plan have been defined and will be used to measure effectiveness of each plan in achieving its desired outcomes and identify areas in which the Area Action Plan may need to be adjusted or supplemented. The specific metrics and effectiveness measures to be used for each Area Action Plan are presented in the summaries for those plans (Section 6 below). In selected areas, surveys and/or assessments will be among the measures used to determine whether expected improvement is occurring.
- **Effectiveness Review Challenge Boards (ERCBs)** will periodically examine progress in Area Action Plan implementation and effectiveness in achieving intended results. The membership of each ERCB includes senior station managers and Entergy fleet representatives who are not directly responsible for the Area Action Plan under evaluation. Based upon the results of their reviews, the ERCBs will recommend areas in which adjustment or supplementation of the action plan is needed.
- **An PNPS Recovery Executive Review Board** that includes the Entergy Nuclear Chief Nuclear Officer, other senior Entergy leadership, and independent experienced personnel from outside Entergy will periodically examine progress in implementation of the RP and effectiveness in achieving results, and provide feedback to PNPS management regarding needed adjustments or supplementation of the RP.

### **5.0 CLOSURE OF AREA ACTION PLANS**

Prior to closure of each Area Action Plan, a formal evaluation of readiness for closure will be conducted. That evaluation will consider:

1. Whether actions contained within the Area Action Plan are substantially complete or are following a predefined work off plan.
2. Whether sufficient improvement in performance has occurred in the area addressed by the Area Action Plan.
3. Whether the progress achieved and steps to ensure ongoing improved performance are sustainable.

The results of this evaluation will be reviewed by an ERCB and documented in a Closure Report that must be reviewed and approved by the manager responsible for the area, the ERCB, and the PNPS Site Vice President.

### **6.0 AREA ACTION PLAN SUMMARIES**

Presented below are summaries of each of the Area Action Plans. Each Area Action Plan Summary contains:

- The improvement actions contained in that Area Action Plan.

- The metrics and other effectiveness measures that will be applied to evaluate effectiveness in achieving the intended results.

Note that as implementation of the RP proceeds, there may be areas in which it is determined that a particular action is not effective, or that different or additional actions are needed to achieve expected outcomes and improvement. In such cases, Entergy may change specific actions. Additionally, during implementation of the PNPS RP, broader improvement initiatives are anticipated for the Entergy nuclear fleet. These fleet initiatives may result in changes to actions in the PNPS plan as improvements are made and standards defined for the Entergy fleet as a whole. Changes to the PNPS RP will be controlled through the PNPS CAP and reviewed and approved in accordance with PNPS Recovery Project procedures. Entergy will keep the NRC apprised in a timely manner of changes to RP actions.

The Area Action Plan Summaries as related to the Focus Areas are presented in the following sections below:

#### **Nuclear Safety Culture**

- Nuclear Safety Culture Action Plan Section 6.1

#### **Corrective Action Program**

- Corrective Action Program Action Plan Section 6.2

#### **Human Performance**

- Procedure Use and Adherence Action Plan Section 6.3
- Operability Determinations and Functionality Assessments Action Plan Section 6.4

#### **Operations Standards and Site Leadership**

- Operations Standards and Site Leadership Action Plan Section 6.5
- Risk Recognition and Decision-Making Action Plan Section 6.6

#### **Procedure Quality**

- Procedure Quality Action Plan Section 6.7

#### **Safety Relief Valve White Finding**

- Safety Relief Valve White Finding Action Plan Section 6.8

#### **Engineering Programs and Equipment Performance**

- Engineering Programs Action Plan Section 6.9
- Equipment Reliability Action Plan Section 6.10
- Work Management Action Plan Section 6.11

## 6.1 Nuclear Safety Culture Area Action Plan Summary

### Vision

The values and behaviors of PNPS personnel reflect nuclear safety as the overriding priority.

### Problem Description

Leadership behaviors have not consistently demonstrated a commitment to emphasize nuclear safety over competing goals. As a result, the plant has experienced degraded equipment reliability, marginal Corrective Action Program performance and increased backlogs.

### Key Actions to Achieve Improvement

NSC-1: Modify leadership behaviors through “Targeted Performance Improvement Plans” and monthly performance review meetings for all supervisors and above to focus on behavior change needs in Decision-Making and Risk Recognition, Equipment Reliability, effective monitoring and oversight of individual and team performance and fostering a Learning Organization.

NSC-1.1: Implement the Individual Targeted Performance Improvement Plans (TPIP) developed from CR PNP-2016-2052, CA-35 utilizing the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*. Document review plan progress as determined during the individual Monthly Performance Management Meetings to ensure sufficient evidence exists for plan closures. When a Senior Leader has positively satisfied their TPIP objectives, the Site Vice President (SVP) can close the TPIP.

NSC-1.2: Conduct a Closure Review Board (per PNPS procedure 1.3.145, *PNPS Recovery Procedure*) for all PNPS leaders' TPIPs after they have been closed by the one-up leader. The Closure Review Board members will include a member of Corporate human resources, and the corrective action plan, nuclear safety culture and Risk/Decision-Making Subject-Matter Experts (SME) and the Recovery Director. The Regulatory Affairs/Performance Improvement Director (RAPID) will replace the Recovery Director on the Closure Review Board for the Recovery Director.

The responsibility of the Closure Review Board members will be to reach a conclusion on whether the TPIPs for each leader can be closed or should continue. Board members will also be responsible for identifying any leaders who are in need of a customized TPIP based on their performance.

NSC-1.3: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the Engineering Director will ensure Individual Targeted Performance Improvement Plans (TPIPs) are developed for all leaders (Supervisors and up) who report up to the Engineering Director to address the identified leadership behavior gaps listed below: TPIPs for all supervisors and above reporting to the Engineering Director will include objectives to improve:

- Leadership alignment and teamwork with peers



- Effective communication, demonstration, and reinforcement of the Excellence Model behaviors and standards to achieve ownership and accountability for performance by their employees
- Constructive coaching and mentoring to motivate and develop their employees

TPIPs for all Engineering Managers will include additional objectives to improve:

- Effective monitoring and oversight of individual and team performance to adjust talent, direction, leadership and resources as necessary for success
- Strategic decision-making practices that supports or affects nuclear safety
- Fostering a Learning Organization where employees use self-assessment, benchmarking, operating experience and the corrective action programs to recognize small signs of decline and aggressively resolve performance gaps.

NSC-1.4: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the Recovery Director will ensure Individual Targeted Performance Improvement Plans (TPIPs) are developed for all leaders (including leaders who may be in a temporary recovery role) who report up to the Recovery Directory with objectives that address (as a minimum) the identified leadership behavior gaps:

- Leadership alignment and teamwork with peers
- Effective communication, demonstration, and reinforcement of the Excellence Model behaviors and standards to achieve ownership and accountability for performance by their employees
- Constructive coaching and mentoring to motivate and develop their employees

NSC-1.5: Implement the Individual Targeted Performance Improvement Plans (TPIP) developed from CR PNP-2016-2052, CA-35 utilizing the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*. Document review plan progress as determined during the individual Monthly Performance Management Meetings to ensure sufficient evidence exists for plan closures. When a Senior Leader has positively satisfied their TPIP objectives, the SVP can close the TPIP.

NSC-1.6: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the Site Vice President (SVP) will ensure Individual Targeted Performance Improvement Plans (TPIPs) are developed for the GMPO, RAPID, Engineering Director and Recovery Director with objectives that address (as a minimum) the identified leadership behavior gaps listed below:

- Leadership alignment and teamwork with peers
- Effective communication, demonstration, and reinforcement of the Excellence Model behaviors and standards to achieve ownership and accountability for performance by their department personnel
- Effective monitoring and oversight of individual and team performance to adjust talent, direction, leadership and resources as necessary for success
- Constructive coaching and mentoring to motivate and develop other leaders and employees
- Strategic decision-making practices that supports or affects nuclear safety

- Fostering a Learning Organization where employees use self-assessment, benchmarking, operating experience and the corrective action programs to recognize small signs of decline and aggressively resolve performance gaps.

NSC-1.7: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the GMPO will ensure Individual Targeted Performance Improvement Plans (TPIPs) are developed for all leaders (Supervisors and up) who report up to the GMPO with objectives that address the identified leadership behavior gaps listed below:

TPIPs for all supervisors and above reporting to the GMPO will include objectives to improve:

- Leadership alignment and teamwork with peers
- Effective communication, demonstration, and reinforcement of the Excellence Model behaviors and standards to achieve ownership and accountability for performance by their employees
- Constructive coaching and mentoring to motivate and develop their employees

TPIPs for all Senior Managers (Production, Maintenance, Operations, and Projects & Maintenance Services) will include additional objectives to improve:

- Effective monitoring and oversight of individual and team performance to adjust talent, direction, leadership and resources as necessary for success
- Strategic decision-making practices that supports or affects nuclear safety
- Fostering a Learning Organization where employees use self-assessment, benchmarking, operating experience and the corrective action programs to recognize small signs of decline and aggressively resolve performance gaps.

NSC-1.8: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the RAPID will ensure Individual Targeted Performance Improvement Plans (TPIPs) are developed for all leaders (Supervisors and up) who report up to the RAPID with objectives that address the identified leadership behavior gaps listed below:

- Leadership alignment and teamwork with peers
- Effective communication, demonstration, and reinforcement of the Excellence Model behaviors and standards to achieve ownership and accountability for performance by their employees
- Constructive coaching and mentoring to motivate and develop their employees.

NSC-1.9: This action is to collect all of your responsible functional area personnel's required Targeted Performance Improvement Plans (TPIPs) including your own, as per CR-PNP-16-2052, in electronic or hard copy and provide the complete package to the Pilgrim Manager HR-Business Partner.

NSC-1.10: Address any additional feedback from the NRC on TPIP construction based on additional dialogue/correspondence and information provided in CR-PNP-16-2052, CA 103.

NSC-1.11: During the 95003 inspection, it was pointed out by an inspector that CR 2016-2052, CA 38 was written such that a reader could interpret the scope of the TPIP closure review boards too narrowly. Revise CR 2016-2052, CA 38 to capture the broader interpretation.

NSC-2: Align the entire station to individual and leadership behaviors by developing a PNPS Employee Handbook that supports EN-PL-100, *Nuclear Excellence Model*, including PNPS's vision, mission, strategy, goals and core values.

NCS-2.1: Create a PNPS handbook (or equivalent) based on the EN-PL-100, *Nuclear Excellence Model*, (PNPS's vision, mission, strategy, goals, core values, attributes of leader and individual behaviors), and site-specific recovery procedure (Created in CA-39).

NCS-2.2: Rollout the PNPS Employee handbook (or equivalent) to site personnel. The rollout meeting should include:

- Senior Leaders (Senior Manager or above) facilitating in the rollout meeting to ensure effective communications and understanding of the commitment to the handbook and its use.
- Individuals signing for their copy of PNPS Employee Handbook and acknowledgement of expectations for use.

NCS-2.3: Conduct alignment sessions with station leadership on the content and implementation expectations on the PNPS handbook (or equivalent) based on the EN-PL-100, *Nuclear Excellence Model* (PNPS's vision, mission, strategy, goals, core values, attributes of leader and individual behaviors), and site-specific recovery procedure EN-OM-XXX-PNP-RC (Created in CR PNP-2016-2052, CA-39). These sessions will be led by the Site Vice President and focus on establishing accountability for high standards of performance to align behaviors in support of a strong nuclear safety culture. Station Leadership includes first line supervisor level up to Director and General Manager-Plant Operations (GMPO) level.

NCS-2.4: Ensure that the leaders who missed the initial roll-out have been given a copy of the PNPS Legacy of Excellence handbook and are briefed on the content and implementation expectations for the handbook and the site recovery procedure, 1.3.145 by a manager or director.

NCS-2.5: Revise the Legacy of Excellence Handbook to incorporate lessons learned from the first year of implementation. Revised handbook to be rolled-out to 100% of station employees with acknowledgement of receipt and understanding of expectations for its use.

NSC-3: Reinforce the use of Entergy's Managerial Accountability Model as described in EN-PL-100 with all full-time site personnel and supplemental personnel to improve consistent performance of Managerial and Individual Accountability.

NCS-3.1: The actions specified in NSC-1.3 also address deficiencies in implementation of the Accountability Model identified during the 95003 inspection.

NCS-3.2: The actions specified in NSC-1.4 also address deficiencies in implementation of the Accountability Model identified during the 95003 inspection.

NCS-3.3: The actions specified in NSC-1.6 also address deficiencies in implementation of the Accountability Model identified during the 95003 inspection.

NCS-3.4: The actions specified in NSC-1.7 also address deficiencies in implementation of the Accountability Model identified during the 95003 inspection.

NCS-3.5: The actions specified in NSC-1.8 also address deficiencies in implementation of the Accountability Model identified during the 95003 inspection.

NCS-3.6: Reinforce the INPO 12-012, *Traits of a Healthy Nuclear Safety Culture*, Personal Accountability trait along with associated attributes and behaviors through presentations using the Legacy of Excellence Handbook at Leadership and Alignment meetings one week per month for three consecutive months.

NCS-3.7: Review April 2017 unsatisfactory adverse (priority 1, 2, and 3) corrective action closures to determine if the Culpability Model was appropriately applied in accordance with procedure. If the culpability assessment process was not entered or if review indicates an incorrect outcome, a CR is to be initiated.

NCS-3.8: Perform an Adverse Condition Analysis (ACA) on the inconsistent actions taken in response to SME feedback, in accordance with EN-LI-118, *Cause Evaluation Process*.

NSC-4: Use external mentors to establish proper observation standards and coach the coaches.

NSC-4.1: Establish a position for an Independent (External to Entergy) Reviewer "Nuclear Safety Culture (NSC) Advocate." Responsibilities include:

Monitoring the daily performance of activities at PNPS for indications that may reflect weakness, or a potential for weakness, in any of the NSC Traits and NSC Attributes listed in INPO 12-012.

NSC-4.2: Work with nuclear safety culture advocate to review condition reports generated in the month of June for documented behaviors (not equipment conditions) that are contrary to standard. Use Pareto or similar analysis method to evaluate data and assign corrective actions based on categories of behaviors that are not self-reported or organizations that predominantly fail to report.

NSC-4.3: Acquire two external subject matter experts (SME) resources to assess and mentor PNPS leaders in the following behaviors:

- Personal demonstration of high performance standards
- Holding subordinates accountable to high performance standards

NSC-5: Improve Nuclear Safety Culture monitoring through use of a Nuclear Safety Culture Advocate and increased Nuclear Safety Culture Monitoring team meetings.

NSC-5.1: The actions specified in NSC-4.1 also address deficiencies in monitoring of Nuclear Safety Culture identified during the 95003 inspection.

NSC-5.2: Convene the Nuclear Safety Culture Monitoring Panel on a frequency of no less than one meeting per quarter when two or more safety culture traits are judged

unacceptable or needing attention. When one or fewer safety culture traits are judged unacceptable or needing attention, the meeting can return to a 3 meeting per year frequency in accordance with fleet procedure requirements.

NSC-5.3: Conduct an independent review of actions taken to address the precursors to a chilled RP department environment. Assign additional actions, as necessary.

NSC-5.4: Conduct a lessons learned discussion with Nuclear Safety Culture Monitoring Panel membership covering the weaknesses identified in the inspection report. Evaluate using experienced external personnel to monitor performance and propose actions to address gaps.

NSC-6: Improve the effectiveness of the Corporate and Independent Oversight to identify emerging issues and stations response to those issues.

NSC-6.1: Create and execute a plan to improve station responsiveness to externally and Nuclear Independent Oversight-identified issues. Use Management Oversight Board meetings (or equivalent) to include station leadership review of: (1) ownership, (2) action plans (including timelines) and (3) measures of effectiveness to address quality assurance findings (QAF), Elevations, Escalations and safety review committee (SRC)-identified issues.

NSC-7: Improve workforce planning and oversight to address staffing needs through the end of plant operations.

NSC-7.1: Develop and implement a recovery procedure using EN-AD-101-03, *Recovery Procedure Process*, to conduct a PNPS People Health Committee (PPHC) to place priority on staffing and retention issues that are impacting PNPS employees.

NSC-7.2: Develop and implement an Integrated Strategic Workforce Planning (ISWP) process that supports organizational decision-making in staffing allocation, development, and knowledge transfer for PNPS through end of plant life.

NSC-8: Additional Actions

NSC-8.1: Clarify the duties and responsibilities of the Nuclear Safety Culture Advocate based on the comments from the 95003 Inspection team.

NSC-8.2: Nuclear Safety Culture (NSC) Advocate to randomly attend a sampling of site meetings to observe for nuclear safety culture behaviors and provide feedback, including reinforcement, of leader behaviors.

NSC-8.3: Track actions CR PNP-2016-10136, CA-04 - CA-07 to completion and verify closure. Review the responses to CR-PNP-2016-10136, CA-4 - CA-07 and ensure that the closures of the actions are completed as written and are appropriately documented.

NSC-8.4: Ensure that all assigned performers of open Comprehensive Recovery Plan (CRP) corrective actions (CA) review the requirements for corrective action closure as specified in EN-LI-102, *Corrective Action Program*, sections 5.6 [4] & [5] and EN-FAP-LI-002, Att. 7.17, sections 2.8 & 2.9.

NSC-8.5: Create short term (pre-RFO) benchmark plan. Assign actions via LO CRs and track completion with actions assigned to CR PNP-2015-7583.

NSC-8.6: Create long term (post-RFO) benchmark plan. Assign actions via LO CRs and track completion with actions assigned to CR PNP-2015-7583.

NSC-8.7: Track the completion of LO-HQNLO-2017-006, CA# 16. The intent of this action is to validate that *TrakWeb* is being used appropriately to support resolution of Employee Concerns Program issues.

NSC-8.8: Provide gap refresher Nuclear Safety Culture training to improve station personnel including supervisors/managers, knowledge and in-depth understanding of the attributes/traits of a healthy Nuclear Safety Culture (NSC) and how NSC influences Nuclear Safety performance.

NSC-8.9: Reinforce the use of Entergy's Managerial Accountability Model as stated in EN-PL-100, Attachment 3.2 with all full-time site personnel and supplemental personnel to improve consistent performance of Managerial and Individual Accountability.

NSC-8.10: Revise the New Employee Onboarding Checklist to include employee receiving a PNPS handbook and a discussion by the manager on the PNPS handbook concepts and expectations for use.

NSC-8.11: Ensure the "Entergy Nuclear Sustainability Plan" addresses the issues documented in the root cause evaluation relating to corporate oversight and Nuclear Independent Oversight (NIOS).

NSC-8.12: Create Radiation Protection speaking topics, promoting teamwork, lasting ~15-30 minutes, schedule a meeting with each of these departments (Chemistry, Maintenance, Operations, Chicago Bridge & Iron (CBI), Security, and Engineering), and perform the presentations.

NSC-8.13: Conduct Pulsing Interviews of Priority Organization personnel (identified in the 2016 Third-Party Nuclear Safety Culture Assessment [TPNSCA]).

NSC-8.14: Additional personnel from Radiation Protection, Electrical Maintenance, Mechanical Maintenance, Design Engineering, and Security must attend make-up Third-Party Nuclear Safety Culture Assessment/Employee Concerns Program presentations.

NSC-8.15: Evaluate areas or groups where resource constraints or ineffective use of resources may be impacting ability to necessary work. Communicate to individuals, criteria for contractor reductions.

NSC-8.16: Conduct a review of Employee Concerns Program files to determine completeness and ease of access and make necessary corrections.

NSC-8.17: Document the review conducted by site and fleet HR representatives that determined that the Executive Review Board process was appropriately followed for the involuntary removal from duty issue.

NSC-8.18: Review maintenance and technical training program observations and performance (including trainee feedback) against the nuclear safety culture (NSC) focus

group feedback. Determine and assign additional corrective actions based on review, including closing any gap in how trainee feedback deviates from the focus group feedback.

NSC-8.19: [Note: This CA is part of the Arkansas Nuclear One (ANO) Comprehensive Recovery Plan.]

Revise EN-FAP-OM-011, Corporate Oversight Model, to include station Nuclear Safety Culture output from the nuclear safety culture monitoring panel and the associated Performance Indicators as inputs to the Oversight Analysis Meeting (OAM) and Oversight Review Board (ORB).

NSC-8.20: [Note: This CA is part of the ANO Comprehensive Recovery Plan.]

Revise EN-FAP-OM-002, *Management Review Meetings*, to prioritize a review of Nuclear Safety Culture status and Regulatory performance to the Operational Excellence (OE) MRM agenda.

NSC-8.21: Conduct a formal benchmark (by a current Management Review Meeting (MRM) member) at an Industry Leading Station(s) (as recommended by INPO) on Operational Excellence MRM content, leadership behaviors exhibited and execution. The benchmark objectives will include meeting attendance requirements and documentation and how action items are documented and tracked.

NSC-8.22: Use a third-party to conduct training with Security leaders on communication skills focusing on earning Security Officers' respect and treating individuals with dignity.

NSC-8.23: Conduct a review of previously completed Employee Concerns Program cases to ensure correct case type assignments were made.

NSC-8.24: Revise Employee Concerns Program coordinator job familiarization guide and procedure to remove the references to outdated training as a requirement and add in a replacement training course that meets the intent of the original offering.

NSC-8.25: The actions specified in NSC-1.6 also address deficiencies identified during the 95003 inspection.

NSC-8.26: The actions specified in NSC-1.7 also address deficiencies identified during the 95003 inspection.

NSC-8.27: The actions specified in NSC-1.8 also address deficiencies identified during the 95003 inspection.

NSC-8.28: The actions specified in NSC-7.1 also address deficiencies identified during the 95003 inspection.

NSC-8.29: The actions specified in NSC-2.3 also address deficiencies identified during the 95003 inspection.

## **Effectiveness Measures**

### *Metrics*

1. CAP Behavior. Metric is a composite of the results of the attributes from the NSC Advocate Interim Actions Report (30%), CAP SME Report (50%), RR&DM SME Report (10%), and Observation Program Results (10%). Directly relates to NSC Trait "Problem

- Identification and Resolution" (PI), Attributes; Identification (PI.1), Evaluation (PI.2), Resolution (PI.3), and Trending (PI.4). Data is to be compiled by the NSC Advocate and approved by the Recovery Director after collegial review with CAP and RR/DM SME's.
2. Conservative Decision-Making Behaviors. Metric is a composite of attributes from the NSC Advocate Interim Actions Report (30%), RR/DM SME Report (40%), Observation Program Results (20%), and CAP SME Report (10%) Directly relates to NSC Trait "Decision Making" (DM), Attributes; Consistent Process (DM.1), Conservative Bias (DM.2), and Accountability for Decisions (DM.3)
  3. Leadership Behaviors. Metric is a composite of the results of the attributes from the NSC Advocate Interim Actions Report (50%), RR/DM SME Report (20%), Observation Program Results (10%), and CAP SME Report (10%). Directly Relates to NSC Trait "Leadership Safety Values and Actions" (LA), Attributes; Field Presence (LA.2), Incentives Sanctions and Rewards (LA.3), Strategic Commitment to Safety (LA.4), Change Management (LA.5), Roles, Responsibilities and Authorities (LA.6), Constant Examination (LA.7), and Leader Behaviors (LA.8). Indirectly relates to NSC Trait "Personal Accountability" (PA).
  4. 1 X 1 Effectiveness. Metric is based on a 20% sampling of the 1x1 forms, scored rated in each of the subsections of the form on a scale of 1-10, adding the scores for a total 1x1 score and averaging the sampled population for a final metric expressed in percent. The rating used will be if the 1X1 form is acceptable or not. 1X1 performance management meetings are held monthly excluding the outage execution window and mid-year/end-of-year Success Factors/PP&R windows. Metric will be scored using the Fleet WILL sheet for 1X1 Meetings
  5. NIOS Issue Resolution Time. Issue Resolution Time is a measure of the site's ability to resolve those issues requiring causal analysis (Root, Apparent, and Common), in a timely manner. The goal is for all CR's requiring causal analysis to be closed in <= 180 days from initiation of the condition report.
  6. Effective Use of Resources. Metric is a composite of the results of the attributes from the NSC Advocate Interim Actions Report (50%), Pilgrim People Health Committee and Integrated Strategic Workforce Planning Review Results (30%), RR/DM SME Report (10%). Directly relates to NSC Trait "Leadership Safety Values and Actions (LA), Attribute Resources (LA.1).

#### *Effectiveness Reviews*

7. Perform an Effectiveness Review (EFR) for NSC-1.1 through NSC-1.8 and NSC-3.1 through NSC-3.5.

Review the Nuclear Safety Culture metrics results of the last 3 quarters metric results at time of the effectiveness determination.

Metric attributes are based on the assessment results contained in the NSC Advocate, CAP, Resources and Decision-Making SME reports and the observation program for the following NSC behaviors:

- Leadership
- CAP



- Decision Making
- Effective use of Resources

Success: The Corrective Action to Preclude Repetition (CAPR) actions will be deemed successful if the 3 quarters of NSC metrics demonstrate the following results:

- No red indicators
- 80% of the indicators are either green or improving over the last 3 quarters
- No "yellow and declining" indicators during the final quarter of the period being evaluated by the EFR.

Timeliness: Approximately 8 months after the corrective action plan is implemented.

## **6.2 Corrective Action Program Area Action Plan Summary**

### **Vision**

PNPS implements the corrective action program with a low threshold for identifying issues and effectively evaluates and promptly resolves those issues commensurate with their safety significance.

### **Problem Description**

Pilgrim Nuclear Power Station (PNPS) continues to demonstrate weaknesses in the implementation of the Corrective Action Program (CAP). The station is experiencing Conditions Adverse to Quality (CAQ) and Significant Conditions Adverse to Quality (SCAQ) which are recurring and longstanding.

### **Key Actions to Achieve Improvement**

CAP-1: Improve CAP behaviors using a subject matter expert who will mentor individual behaviors and station culture supporting the Corrective Action Programs and provide "real time" feedback on station CAP supporting behaviors and performance results to the Performance Improvement Review Group (PRG) members, Station Vice-President and Nuclear Chief Operating Officer (COO).

CAP-1.1: Augment the station staff with a subject matter expert; who has at a minimum, working experience as a SVP direct report at an operating nuclear power plant or equivalent experience, to mentor the individual behaviors and station culture supporting the Corrective Action Programs.

CAP-1.2: When interim actions EOC-3 / CA-15 and 4 / CA-16 are closed, assign a part-time (two weeks per month) SME to coach and mentor DPIC and CAP performance and independently review RCEs and ACEs to acquire the data for populating the CAP Performance Indicators.

CAP-1.3: When interim action EOC-7 / CA-18 is closed, assign a part-time (two weeks per month) SME to coach and mentor personnel who implement the OE, Trending, Self-Assessment and Benchmarking processes.

CAP-1.4: Develop performance scorecards for CRG (PRG), SARB (PRG) and CARB (PRG) meetings. The scorecards will include ratings for leadership accountability, behaviors and expected results during the CRG (PRG), SARB (PRG) and CARB (PRG) meetings.

CAP-1.5: Generate the CAP SME monthly status report for July 2016 (performed by the CAP SME required in CA 74). Also generate a new CA to require each additional monthly report in the same fashion. These monthly status reports must continue until end of plant operating life.

CAP-1.6: Generate the CAP SME quarterly assessment report for 4th quarter 2016 (performed by the CAP SME required in CA 74). Also generate a new CAPR-1a CA to require each additional quarterly assessment report in the same fashion.

CAP-1.7: Revise the root cause evaluation (RCE) to define the goal of the coaching, how it is intended to be performed, how progress will be measured and what success will look like. The intent of this CA is address the analysis gap by incorporating instructions for the coaching goal, definition of how it will be performed, how progress will be measured and what success will look like.

CAP-1.8: Review the use of mentors and SMEs in the recovery effort. Assign additional actions based on the results of the review.

CAP-1.9: Review performance issues identified from the NRC 95003 Inspection Report with work order screening and Performance Improvement Review Group (PRG) team members.

CAP-1.10: Develop and conduct training on the classification of adverse conditions and significant conditions adverse to quality (SCAQ) with Performance Improvement Review Group (PRG) members and departmental performance improvement coordinators (DPIC).

CAP-1.11: Brief station personnel on the importance of self-identification of adverse conditions. Reinforce expectations for maintaining a low reporting threshold.

CAP-2: Improve CAP monitoring by developing and implementing improved station and department CAP performance indicators that require a monthly review by the station PRG.

CAP-2.1: Require DPICs to perform closure reviews of CR priority 1, 2 and 3 corrective actions. The DPICs will review 100% of the priority 1 and 2 closed corrective actions and 50% of the priority 3 closed corrective actions.

CAP-2.2: Develop monthly CAP performance indicators including station and department level indicators to monitor performance including a monthly required review by CARB (PRG).

CAP-2.3: The actions specified in CAP-1.4 also address deficiencies in CAP monitoring identified during the 95003 inspection.

CAP-3: Broaden the scope of the CAP root cause evaluation effectiveness review to ensure that it supports appropriate assessment of effectiveness and sustainability.

CAP-3.1: The NRC 95003 inspection team has communicated that the effectiveness review for the CAP root cause evaluation, CR PNP-2016-0716, is of small scale and narrow scope. Revise RCE to address the effectiveness review narrow scope concern.

CAP-3.2: Revise the root cause evaluation for CR PNP-2016-0716 to define the goal of the coaching, how it is intended to be performed, how progress will be measured, and what success will look like.

CAP-4: Additional Actions

CAP-4.1: Perform drywell walkdown during Refueling Outage (RFO) 21 to determine extent of condition of drywell clearance issues.

CAP-4.2: Prepare and implement a Checklist for Regulatory Assurance personnel to use in performing daily reportability evaluations.

CAP-4.3: With the assistance of 95003 recovery personnel with industry experience, assess the deficiencies in the corrective actions to prevent recurrence (CAPR) in the root cause evaluations for the following condition reports: CR PNP-2016-0716, CR PNP-2016-6635, and CR PNP-2016-2052. Generate additional actions resulting from this analysis.

CAP-4.4: The Entergy Corrective Action Program/Operating Experience Corporate Functional Area Manager (CAP/OE CFAM) to evaluate the Entergy CAP Excellence Plan (LO-HQNLO-2015-00073) and revise as necessary to ensure the plan incorporates the CR PNP-2016-0716 root cause evaluation causes and corrective actions for applicability to other fleet stations.

CAP-4.5: Make a presentation on current standards for insulation resistance test evaluation on cables and the issues with timeliness of actions for the bus B1 cable to bus B15 to electrical engineers that could perform insulation resistance test evaluations.

CAP-4.6: Evaluate the North Anna emergency diesel generator operating experience referenced by 95003 inspectors and determine why it was not selected as being applicable to the root cause analysis for CR PNP-2016-7443 and evaluate potential impacts on the analysis results and actions.

CAP-4.7: Evaluate whether CR PNP-2016-8193, CAs 2 & 3 are reducing the number of changes between pre-screen and PRG by improving communication and understanding of roles.

CAP-4.8: Change the CAP expectations document to an affirmation sheet that requires signatures and issue to Pilgrim managers and above.

CAP-4.9: Develop action(s) to address inadequate condition report generation for procedure use & adherence during supervisor observations.

CAP-4.10: Complete a trend validation worksheet to evaluate whether an increased trend in procedure use and adherence exists at this time.

CAP-4.11: Screen the Operating Experience reports identified during the Pilgrim 95003 inspection as category B1.

## **Effectiveness Measures**

### *Metrics*

1. The percent of CRs initiated by non-Entergy & non-supplemental employees. Data is reported monthly by the PNPS CAP organization and displayed on the Entergy Corrective Action Performance Index.
2. Percent of Root Cause Evaluations and Adverse Cause Analysis accepted by PRG and CAP SME.
3. Percentage of A & B CRs reviewed by DPICs after closure that were closed as acceptable by the DPIC.
4. Number of consecutive months that a station was over the goal for: Total Adverse CR Inventory and Total Adverse CRs > 6 Months Old.
5. Number of adverse CAs extended more than twice.
6. Total number of "ineffective" CAPR effectiveness reviews each month.

### *Effectiveness Reviews*

7. Perform interim Effectiveness Review for CAP-1.1, CAP-1.6, and CAP-2.2.
8. Perform the Effectiveness Review for CAP-2.2, *Develop monthly CAP performance indicators including station and department level indicators to monitor performance including a monthly required review by CARB/PRG.*
9. Perform the Effectiveness Review Assessment to include both internal Entergy and external subject matter CAP experts.

Assess the station individual behaviors and expectations established to support the CAP performance and the nuclear safety culture attributes.

Perform observations and conduct interviews of individuals with CAP roles (i.e. PRG (CARB, CRG), DPIC, ACE/RCE) for training knowledge retention.

10. Perform the final Effectiveness Review for CAP-1.1, CAP-1.6, and CAP-2.2.
11. Perform an Effectiveness Review of mentors assigned to coach, mentor and independently review all RCEs and ACAs and observations, coaching and mentoring of DPICs through monthly feedback.
12. Perform an Effectiveness Review of CAP SMEs performing closure reviews of all station PCRS corrective actions, priority 1 – 3. These reviews are performed following DPIC reviews.
13. Perform an Effectiveness Review of mentor assigned to coach and mentor personnel who implement the OE, Trending, Self-Assessment and Benchmarking processes.

## **Human Performance Focus Area**

### **6.3 Procedural Use and Adherence Action Plan Summary**

#### **Vision**

PNPS and supplemental employees implement procedures and work instructions in a manner that demonstrates excellence in adherence and supports safe operation of the station.

#### **Problem Description**

Some station personnel are not consistently following procedures during work execution. This has resulted in program non-compliance and human performance errors.

#### **Key Actions to Achieve Improvement**

PUA-1: Ensure alignment from senior management, through supervision down to individual contributors are aware of what is expected from them and what their roles and responsibilities are regarding procedure use and adherence (PU&A) within Informational Use procedures.

PUA-1.1: Senior Site Leadership to issue a Procedure Use and Adherence Expectations document, site wide, clarifying Management expectations.

PUA-1.2: Senior Management to roll-out the Procedure Use and Adherence Expectations document, with explanatory presentation, at All-Hands Meetings OR small group meetings.

PUA-1.3: Senior Management to present the Procedure Use and Adherence Expectations document, with explanatory presentation, at All-Hands Meetings OR small group meetings during the fourth quarter 2016.

PUA-1.4: Distribute an "Acknowledgement of Understanding/Commitment" with EN-HU-106 Procedure and Work Instruction Use and Adherence letter to DPICs, supervisors, superintendents, managers and Site Leadership Team. The Acknowledgement of Understanding/Commitment to include a copy of the Site Procedure Use and Adherence Expectations Document.

PUA-1.5: Communicate Senior Leadership Site Procedure Use and Adherence Expectations Document at 4 separate L&A meetings over a 12-week span.

PUA-1.6: Site department managers communicate senior management's procedure use and adherence expectations once per quarter for a year.

PUA-2: Ensure that station personnel are working in compliance with management standards and expectations with regard to procedure use and adherence by improving observation of related behaviors.

PUA-2.1: Revise 95003 HU will sheet to include identification personnel compliance or gaps in identifying and following Informational Use (IU) procedures. Recommend adding the following attribute to the PU&A section:

(+ ) (-) IU procedures were identified and implemented

PUA-2.2: Create a new 95003 Recovery Project Human Performance Will Sheet, or modify the existing 95003 WILL sheet to include Procedure Use and Adherence Observation attributes.

PUA-2.3: Perform Procedure Use and Adherence observations using the 95003 Recovery Human Performance WILL Sheet concurrently with performance of HU observations for the assessment period of one year, June 1, 2016 through June 1, 2017, or until closure of Procedure Use and Adherence effectiveness review.

PUA-2.4: Maintenance Manager to initiate weekly meetings with scheduled MELT observers to provide expectations for performance of HU observations. Expectations to include observation of procedure use and adherence with Information Use procedures. Maintenance Manager to present results of previous week observation results to provide feedback. This action can be closed after 12 weeks of presentations.

PUA-2.5: Perform an adverse condition analysis (ACA) (CR PNP-2017-6753) to identify the causal factors of the ineffectiveness of the corrective actions intended to improve behaviors related to procedure use and adherence. Initiate corrective actions to address the identified causal factors.

PUA-3: Improve leaders' understanding of procedure use and adherence performance by workers by improving trending of PU&A issues.

PUA-3.1: PI Manager to present direction to DPICs to utilize Procedure Use and Adherence Trend codes and keywords when performing trend coding for Procure Use and adherence errors. Include use of Keywords: Informational Use, Reference Use and Continuous Use.

PUA-3.2: Complete the actions required to incorporate the Procedure Use and Adherence performance issue in the Aggregate Performance Review Meeting (APRM) process as directed by EN-LI-121, Trending and Performance Review Process.

PUA-3.3: Provide a trend report based on Keywords Informational Use, Reference Use and Continuous Use to monitor trends in Procedure Use and Adherence behaviors.

PUA-3.4: Communicate the PU&A Lessons Learned/Results from the PU&A 95003 Recovery WILL sheet as analyzed in Monthly Snap Shot Assessments quarterly via L&A meetings.

PUA-4: Strengthen the station's actions to improve procedure use and adherence by incorporating actions to address NRC team observations.

PUA-4.1: Develop and implement actions to improve the procedure use and adherence standards for Reference Use and Continuous Use procedures in Operations.

PUA-4.2: Develop and implement actions to improve the PU&A standards for Reference Use and Continuous Use procedures in Maintenance.

PUA-4.3: Implement actions to define what expected practices for procedure use & adherence look like and implement a program that consistently enforces those expectations, including elements of positive reinforcement.

#### PUA-5: Additional Actions

PUA-5.1: Address the following NRC identified weaknesses in RCE corrective action plan, specifically, lack of training for future planners, lack of continuing training for current planners, and reliance on an Informational Use procedure.

PUA-5.2: Update Procedure 8.M.2-2.10.8.3, *Diesel Generator (EDG) A Initiation by Core Spray Logic*, to incorporate LCO impact statements.

PUA-5.3: Assign actions to managers for the groups identified in the Performance Analysis attached to CR PNP-2016-2059, CA-123 to address Informational Use procedure gaps within their respective group.

PUA-5.4: Add CR PNP-2016-5085 (ineffective CAPR) to the APRM Performance Improvement Integration Matrix (PIIM) for February and correct the resolved status of CR15-375.

PUA-5.5: Add CR PNP-2016-4291 (resolution of trends) as an improvement item on the APRM Performance Improvement Integration Matrix (PIIM) for February 2017.

PUA-5.6: Add CR PNP-2016-0215 (timeliness of CR reviews) to the February 2017 APRM Performance Improvement Integration Matrix (PIIM) as an improvement item.

PUA-5.7: Revise procedure 1.3.142, *Critical Decision Process*, to denote clear and concise entry criteria so that the appropriate decisions are reviewed as intended by the Risk Recognition and Decision Making CAPR.

PUA-5.8: The actions specified in PUA-2.4 also address deficiencies identified during the 95003 inspection.

PUA-5.9: The actions specified in PUA-1.6 also address deficiencies identified during the 95003 inspection.

## Effectiveness Measures

### Metrics

1. # of crew clock events meeting reset criteria due to PU&A or Work Instruction issues (over the last 3 rolling months).
2. # of department clock events meeting reset criteria due to PU&A or Work Instruction issues (over the last 3 rolling months).
3. # of site clock events meeting reset criteria due to PU&A or Work Instruction issues (over the last 6 rolling months).

### *Effectiveness Review*

4. Perform an Effectiveness Review for the corrective actions of PUA-1, 2, 3, 4 and 5.  
Perform a review of monthly human performance/industrial safety snapshot assessments based on the 95003 Human Performance WILL sheet data specific to procedure use and adherence for at least one year. Develop a report reflecting trends in procedure use and adherence, including Informational Use.

## **6.4 Operability Determinations/Functionality Assessments Area Action Plan Summary**

### **Vision**

PNPS understands and assesses equipment deficiencies in a timely manner with quality and accuracy without error.

### **Problem Description**

Operability determinations and/or functionality assessments do not always meet the procedural requirements of EN-OP-104, Operability Determination Process. This could result in equipment being considered operable and/or functional when it is not, misclassifications of condition reports, and delayed timeliness of corrective actions.

### **Key Actions to Achieve Improvement**

ODFA-1: Improve the knowledge level of the personnel involved in performing operability determinations and functionality assessments (OF/FA) using training and mentoring.

ODFA-1.1: Evaluate the need for and provide additional training as a result of a review of the Operability Training provided during LOCT 0-RQ-04-01-230 Rev 1 in response to the NRC violations discussed in CR PNP-2015-6313, CR PNP-2015-7787, CR PNP-2015-8073, and PNP-CR 2015-9218.

ODFA-1.2: Establish an OD/FA improvement action plan with the following attributes: The improvement plan is to outline the steps to improve operations performance of the operability and functionality determination process at Pilgrim Nuclear Station (PNPS).

ODFA-1.3: Establish an industry SME OD/FA mentor to provide daily oversight and one-on-one coaching on operability determinations and functionality assessments for shift SROs.

ODFA-1.4: Implement the revised Initial SRO training to include training on EN-OP-104, *Operability Determination/Functionality Assessment*, at level of detail sufficient for SROs to perform ODs/FAs upon completion of training.

ODFA-1.5: Implement the revised Continuing SRO Training to include EN-OP-104 at a level of detail sufficient for SROs to perform ODs/FAs upon completion of training.

ODFA-1.6: Provide Operability Determination/Functionality Assessment fundamentals training to all senior reactor operators.



ODFA-2: Validate that the quality of the operability determinations and functionality assessments that are performed is improved to desired levels.

ODFA-2.1: The OD/FA Mentor is to provide weekly documented performance feedback on completed ODs and FAs to all shift managers and senior reactor operators from 4/1/16 through 8/5/16.

ODFA-2.2: Increase Line Oversight by establishing an Operability Determination / Functional Assessment challenge review board [ODCB] function. Add a new section to 1.3.34, *Operations Administrative Policies and Processes*, that describes the Operability Determination Challenge Board (ODCB) process.

ODFA-3: Ensure that sufficient tools and resources are available to support quality implementation of the OD/FA process.

ODFA-3.1: Develop a simplified job aid/checklist to be used by individuals developing an immediate operability determination or functional assessment.

ODFA-3.2: Develop plan to reallocate resources supporting Control Room in implementation of ODs/FAs in accordance with EN-OP-104, *Operability Determination/Functionality Assessment*, during normal business hours.

ODFA-4: Strengthen the station's actions to improve implementation of the OD/FA process by incorporating actions to address NRC team observations.

ODFA-4.1: Review Operability Determination/Functionality Assessment subject-matter expert (SME) observations conducted before, during, and after RFO 21 for common gaps. Review actions being taken during the current high intensity training (HIT). Develop plans to address any additional gaps.

ODFA-5: Additional Actions

ODFA-5.1: Present Licensed Operator Continuing Training module #0-RQ-04-01-257 to all SROs who implement EN-OP-104, *Operability Determination/Functionality Assessment*, requirements.

ODFA-5.2: Evaluate actions currently in place to improve OD/FA product quality and implement any additional actions that are indicated.

ODFA-5.3: Implement an Operator Aid to provide guidance on implementation of EN-OP-104 to facilitate performance of operability determinations and functionality assessments.

ODFA-5.4: Develop a workshop based on the Operator Aid implemented in CR PNP-2016-1340, CA-78 to provide guidance on implementation of ODs/FAs.

ODFA-5.5: Verify that all CARB (PRG) comments are incorporated into the apparent cause evaluation (ACE), all CARB (PRG) directed actions are issued, and with the

assistance from PI the final approved version of the Report is attached to the disposition CA.

ODFA-5.6: The actions specified in ODFA-1.4 also address deficiencies identified during the 95003 inspection.

ODFA-5.7: Develop and deliver an ODFA Fundamentals Seminar during Licensed Operator Requalification Training (LORT).

ODFA-5.8: Design, develop, and implement training for engineers and engineering supervisors on the concepts of operable compensatory measure and operable but degraded or non-conforming (DNC). Following the initial training sessions, add this training to the Engineering Support Program (ESP) continuing training program.

## **Effectiveness Measures**

### *Metrics*

1. Grading of all operability determinations and functionality assessments that are reviewed by the operations operability determination functionality assessment challenge board (ODCB).

### *Effectiveness Reviews*

2. Perform Second Quarter 2016 snapshot assessments to determine the effectiveness of the corrective actions implemented by this improvement plan.
3. Perform periodic snapshot assessments to determine the effectiveness of the corrective actions implemented by this improvement plan. Scheduled end of: 3rd quarter 2016.
4. Perform periodic snapshot assessments to determine the effectiveness of the corrective actions implemented by this improvement plan. Scheduled end of: 4th quarter 2016.
5. Perform periodic snapshot assessments to determine the effectiveness of the corrective actions implemented by this improvement plan. Scheduled end of: 1<sup>st</sup> quarter 2017.
6. Perform final effectiveness review to determine the effectiveness of the corrective actions implemented by this improvement plan.

## **Operations Standards and Site Leadership Focus Area**

### **6.5 Operations Standards and Site Leadership Area Action Plan Summary**

#### **Vision**

PNPS operations department exhibits the highest standards of performance and demands high standards of station personnel.

#### **Problem Description**

Pilgrim Nuclear Power Station (PNPS) Operations Leadership has not reinforced consistent standards of high performance within the department and cross-functionally among station personnel.

#### **Key Actions to Achieve Improvement**

OPS-1: Strengthen the station's operational performance by the use of coaching and mentoring focused on operations standards and leadership.

OPS-1.1: Establish and institutionalize expectations for Operations Leadership (i.e., Senior Operations Manager, Assistant Operations Managers, and Shift Managers) to reinforce consistent application of operator fundamentals and to identify and correct performance gaps for the operating crews.

OPS-1.2: Implement a control room mentoring program utilizing industry subject matter experts (SME) to assess crew performance against the established operator fundamentals in EN-OP-120, *Operator Fundamentals Program*.

OPS-1.3: Develop and implement process controls to implement the performance monitoring "Bubble Chart" similar to the one developed at Grand Gulf Nuclear Station for Operations High Intensity Oversight Plan to monitor Operator Fundamentals.

OPS-1.4: Establish expectations to conduct operating crew performance reviews following plant startups, plant shutdowns, plant transients, reactor trips, and other plant evolutions as selected by the Shift Manager, Assistant Operations Manager, or Senior Operations Manager. The purpose of these operating crew performance reviews is to promote operator learning, self-criticality, and correction of identified gaps in operator fundamental behaviors and proficiency.

OPS-1.5: Establish and implement a schedule for Recovery SMEs to spend approximately 12 hours with each Shift Manager. Evaluate performance vs. standards of EN-OP-117, *Operations Assessment Resources*, and provide feedback to the Shift Manager.

OPS-1.6: Establish a process/policy for the Operations Manager - Shift to review the coaching performed by Shift Managers and provide direct feedback on the quality of the coaching.

OPS-1.7: Perform Focused crew assessment of each operating crew in accordance with EN-OP-117. Ensure the assessment team consists of at least one member from the Training Department and at least one member from another department outside of Operations.

OPS-2: Improve the operations department "Picture of Excellence" with regard to operations standards, ownership, and leadership.

OPS-2.1: Coordinate and execute a team trip to Brunswick to benchmark crew MRMs and simulator critiques. The team will include one Pilgrim Shift Manager, Reactor Operator and Operations Instructor.

OPS-2.2: Conduct Focused Self-Assessments of Operator Fundamentals for each shift crew using the position specific "Roles and Responsibilities" attachments in EN-OP-120, *Operator Fundamentals Program*. The assessment teams should include industry peers.

OPS-3: Improve operations crew oversight and teamwork using training to improve performance.

OPS-3.1: Conduct High Intensity Training (HIT) and evaluation including, initial simulator evaluation, training on SOER 96-1, *Control Room Supervision, Operational Decision-Making, and Teamwork*, simulator static exam, training on identified gaps, and final written and simulator exams.

OPS-3.2: Develop and present to each operating crew a case study of the Torus Water Level event. Present the case study in the context of SOER 96-01 and review how the principles in SOER 96-01 apply to the torus water level event.

OPS-4: Improve the guidance to operators regarding the requirements for making notifications to the NRC.

OPS-4.1: Revise PNPS 1.3.34 (and/or other applicable procedures) to incorporate the changes to the guidance for making NRC notifications developed in CR PNP-2017-3723, CAs 2&3.

OPS-4.2: Provide training to each qualified Shift Manager on new procedural guidance in 1.3.34 (and/or other applicable procedures) for making NRC notifications developed in CR PNP-2017-3723, CA 4.

## **Effectiveness Measures**

### *Metrics*

1. Operator Fundamentals Index - Composite of plant impacts associated with Operator performance. Inputs to the Operator Fundamental Index are Reactivity Management Events (RM) caused by or adversely impacted by Operator Fundamentals elements, Protective Tagging Errors (PTO), Component Misposition Events (CM) and Human

Performance Errors (HU). The index is calculated using the same weightings used in the individual PIs for Reactivity Management, Protective Tagging, and Component Mispositions. The HU input is assigned a weight of 10 for "Events" and 5 for "Consequential Errors"; unless captured under Reactivity Management, Protective Tagging, or Component Misposition.

#### *Effectiveness Reviews*

2. Perform three interim effectiveness reviews by performing quarterly assessments of the implementation of operator fundamentals.
3. Perform a final effectiveness review by performing a quarterly assessment of the implementation of operator fundamentals. (3Q18)

## **6.6 Risk Recognition and Decision-Making Area Action Plan Summary**

### **Vision**

PNPS consistently uses consistent processes to make conservative, consequence-biased decisions that minimize risk and support nuclear safety.

### **Problem Description**

In some cases, risk-significant decisions are made without recognizing and managing risk. Flawed risk-significant decisions have negatively impacted work processes, equipment reliability, and resulted in station events.

### **Key Actions to Achieve Improvement**

RRDM-1: Establish and reinforce clear and specific expectations for risk recognition and decision-making to which all station leaders will be held accountable.

RRDM-1.1: Perform observations of leadership performance against the leadership expectations established in CAPR-1 and provide feedback to that leader's Manager or Director. Provide a summary of the observations of leadership performance to the site vice president at a frequency agreed to by the site vice president and the subject-matter expert. This action will remain in place until the end of plant operating life or the effectiveness reviews determine that leadership behaviors are meeting established expectations and are self-sustaining.

RRDM-1.2: Augment the station staff with an external subject matter expert (SME) in the area of risk assessment as a full-time position to mentor and assess individual leadership behaviors and performance against the leadership expectations established in CAPR-1.

RRDM-1.3: CAPR-1: Establish and institutionalize expectations and accompanying accountability for station leadership regarding consequence-biased decision-making and effective risk management. This action will be accomplished by completion of the following activities:

- a. Incorporate expectations for station leadership into a new governing Pilgrim-specific procedure (e.g., Pilgrim Recovery Procedure), revise an existing procedure (e.g.,

- PNPS 1.3.142, or utilize a new or existing fleet procedure. These expectations are to reflect a consequence-biased decision-making culture and include the principles outlined in INPO 15-011, *Principles for Excellence in Integrated Risk Management*.
- b. Incorporate these expectations formally into the continuous performance monitoring and feedback process in accordance with EN-FAP-OM-016, *Performance Management Processes and Practices*, for station leadership with attendant accountability.
  - c. Establish metrics to monitor overall station performance against these established expectations regarding consequence-biased decision-making and effective risk management.
  - d. Use a High Risk / Complexity Level change management plan in accordance with EN-FAP-OM-023, *Entergy Nuclear Change Management*, to implement this Corrective Action to Preclude Repetition.

RRDM-1.4: Track the completion of the weekly observations of in-plant activities by the Station Leadership Team (i.e., 4 Most Error-Likely Tasks (MELTs), 10 non-MELT activities, and 6 Paired Coaching observations). A monthly snapshot self-assessment will provide the tracking method to ensure that assigned observations were performed in accordance with procedure and that actions are assigned to address adverse trends.

RRDM-1.5: Perform observations of leadership performance against the leadership expectations established in CAPR-1 and provide feedback to that leader's Manager or Director. Provide a summary of the observations of leadership performance to the site vice president at a frequency agreed to by the site vice president and the subject-matter expert. This action will remain in place until the end of plant operating life or the effectiveness reviews determine that leadership behaviors are meeting established expectations and are self-sustaining.

RRDM-1.6: Review the approved "Entergy Nuclear Sustainability Plan" and determine if the following gaps related to corporate leadership support of Pilgrim Station are covered by the action plan:

- Not consistently exhibiting behaviors that set the requisite standards and expectations for consequence-biased decision making and effective operational, enterprise and project risk management, consistent with a strong nuclear safety culture.
- Not consistently exhibiting strong leadership behaviors that set the requisite standards and expectations in other nuclear safety culture traits and attributes.
- Inadequate standards, expectations, skills and knowledge regarding the performance of key management responsibilities.
- Insensitivity to regulatory risk.
- Insensitivity to non-regulatory (e.g., INPO, WANO, NIOS, and Safety Review Committee (SRC)) risk.

If any of these gaps are NOT covered in the approved "Entergy Nuclear Sustainability Plan" then take appropriate action to address the gap.

RRDM-2: Revise the risk assessment process to ensure a robust process is developed consistent with industry standards.

RRDM-2.1: Revise 1.3.142 or use a new or existing fleet procedure to include guidance from INPO 15-011, *Principles for Excellence in Integrated Risk Management*.

RRDM-3: Improve the knowledge of station personnel with regard to risk recognition and decision-making.

RRDM-3.1: Track WTPNP-2016-207 to ensure leadership training is completed for Pilgrim supervisors and above. The training will include a new case study on the root cause evaluation for CR PNP-2016-2054 using a similar format to that used for SOER 10-2. Additionally, the case study will reinforce the station leadership expectations established in CAPR-1.

RRDM-3.2: Incorporate the leadership training on Teamwork, Integrated Risk Management and Decision-Making into Supervisor Continuing Training.

RRDM-3.3: Conduct training on the revised Risk Review and Disposition process (See CR PNP-2016-2054, CA 38) in accordance with the systematic approach to training. The training should include recent industry OE related to evaluating risk and how risk related decisions were made. The focus of the training should be on the process changes.

RRDM-4: Additional Actions

RRDM-4.1: Schedule two mentor visits to Pilgrim prior to RFO 21 with former IPEC Operations Manager.

RRDM-4.2: Schedule three operations manager mentor visits to Pilgrim in 2017, following RFO21, with former Indian Point Energy Center (IPEC) Operations Manager.

RRDM-4.3: Issue additional actions based on the results and insights from the mentor visits conducted per CR PNP-2017-2003 CA-4 and CR PNP-2017-2003 CA-5.

RRDM-4.4: Complete the October assessment of Risk Recognition and Decision-Making corrective action effectiveness needed to support the first quarter 2017 interim effectiveness review.

RRDM-4.5: Provide a briefing to qualified Operators covering the requirements of EN-OP-115-03, *Shift Turnover and Relief*.

RRDM-4.6: Review all operations turnover documents and verify that no closed compensatory measures, Operational Decision-Making Instructions (ODMI), disabled annunciators, etc. are carried on forms.

RRDM-4.7: Update the Integrated Risk Summary form in the risk book in the Control Room to the current revision (15).

RRDM-4.8: The actions specified in RRDM-1.2 also address deficiencies identified during the 95003 inspection.

RTDM-4.9: The actions specified in RRDM-1.3 also address deficiencies identified during the 95003 inspection.

## Effectiveness Measures

### Metrics

1. 1 X 1 Effectiveness. Metric is based on a 20% sampling of the 1x1 forms, rated in each of the subsections of the form, adding the scores for a total 1x1 score and averaging the sampled population for a final metric expressed in percent. The rating used will be if the 1X1 form is acceptable or not. 1X1 performance management meetings are held monthly excluding the outage execution window and mid-year/end-of-year Success Factors/PP&R windows. Metric will be scored using the Fleet WILL sheet for 1X1 Meetings.
2. Online Risk Changes (Actual vs. Planned). Unexpected Change in EOOS Risk: The EOOS calculated T-2 work schedule risk is compared to the actual workweek risk as derived from the Operations logged equipment out of service times and entered into EOOS. Actual results include schedule changes w/o evaluation, equipment failures and other impacts (weather, etc.) impacting EOOS as identified in PCRS, WWM Post Work Week Critique and/or station logs.
3. Online Risk Predictability (Actual vs. Planned). Unexpected delays resulting in longer than scheduled elevated EOOS Risk. The EOOS calculated T-2 work schedule risk is compared to the actual workweek risk as derived from the Operations logged equipment out of service times and entered into EOOS. Actual results include schedule changes w/o evaluation, equipment failures and other impacts (weather, etc.) impacting EOOS as identified in PCRS, work week manager (WWM) Post Work Week Critique and/or station logs.
4. Percent Self-Identified Level A/B Condition Reports. The number of A/B level CRs initiated by Pilgrim and supplemental employees (Self-Identified) [RW01] and Internal Oversight Identified [RW02] compared to the total number of A/B level CRs that are identified from all sources: Self-Identified [RW01], Internal Oversight Identified [RW02], External Oversight Identified [RW03] and Self-Revealing [RW04], given in percent. Self-revealing events are reviewed against the metric. Legacy equipment failures or emergent issues not caused by inadequate risk recognition or lack of decision rigor may be excluded (see INPO 15-011 and Legacy of Excellence Handbook for guidance). A decision to defer maintenance without adequate justification and subsequent equipment failure would be reviewed against the metric. This metric is monitored over a rolling 3-month period.

Numerically:  $[(RW01 + RW02) \div (RW01 + RW02 + RW03 + RW04)] \times 100$



*Effectiveness Reviews*

5. Perform the Interim Effectiveness Review for RRDM-1.3
6. Perform the final Effectiveness Review for RRDM-1.3.
7. Perform an Effectiveness Review for the non-CAPR corrective actions of RRDM-1, 2, 3, and 4.  
Perform an assessment to include both internal Entergy and external risk assessment subject matter experts. The risk assessment SME shall be a member of the assessment team. The assessment shall be reviewed by CARB (PRG) and delivered to the Site Vice President.  
SME observations and assessment of station leadership behaviors against expectations established in the corrective actions.  
Assessment to specifically include in the objectives:
  - Performance Monitoring
  - Document Reviews
  - Training Evaluations

**Attributes:**

1. SME assess station leadership behaviors against expectations established in CAPR and corrective actions. The SME provides independent industry expertise to judge improving standards and expectations through observations.
2. Change management plan review includes attributes of procedure changes, communication, training requirements, and others as described in Change Management procedure.
3. Corrective actions implementing training will use procedurally driven Post Training Evaluation process.
4. Review of regulatory tracking processes.

**Success:**

1. SME observations and assessment of behaviors for corrective actions are judged to meet expectations.
  2. Approved and implemented change management plan(s).
  3. Post training evaluation summaries satisfactory.
  4. Regulatory tracking processes are tracking open issues and evaluated for unacceptable consequences with mitigating actions.
  5. RCE corrective actions closed per procedure.
- Timeliness: Approximately 8 months after the corrective action plan is implemented.

## 6.7 Procedure Quality Area Action Plan Summary

### Vision

PNPS procedures and work instructions are technically accurate and are formatted to support strong safety performance by ensuring consistent use and limited consequential errors by station personnel.

### Problem Description

Some station procedures have technical errors and/or lack an appropriate level of detail and human factoring. Inadequate procedure quality increases the probability of procedure non-compliance, human performance errors and station events.

### Key Actions to Achieve Improvement

PQ-1: Improve the quality of key station procedures by reviewing and revising, as appropriate.

PQ-1.1: Identify those procedures that perform safety-related activities and perform "What It Looks Like" (WILL) sheet Procedure Quality reviews. Establish a priority for these WILL sheet Procedure Quality reviews based on frequency of the activity's performance and the work schedule.

PQ-2: Ensure that the station is writing procedures using guidance that reflects industry standards.

PQ-2.1: Revise NOP98A1, *Procedure Process*, to require new (revision 0) station procedures and station procedure revision changes be reviewed by qualified personnel (PPA certified).

PQ-2.2: Revise 1.3.4-1, *Procedure Writers Guide*, to incorporate key industry standard elements from the guidance prescribed in PPA AP-907-005, *Procedure Writer's Manual*.

PQ-3: Ensure that procedure writers and owners have the appropriate level of knowledge with regard to procedure quality.

PQ-3.1: Develop and implement procedure reviewer qualification training.

PQ-3.2: Develop and implement gap training for managers, superintendents and procedure reviewers in Operations, Maintenance, Chemistry, and Radiation Protection departments to address procedure quality.

PQ-3.3: Personnel who are assigned to review new station procedures or procedure changes scoped under PNPS 1.3.4-1, *Procedure Writers Guide*, shall be qualified to perform reviews. At least two workers from Operations, Chemistry, Radiation Protection, and I&C, Mechanical, and Electrical Maintenance will be trained and qualified.

PQ-4: Improve worker involvement in improving procedure quality by developing and implementing a procedure feedback process.

PQ-4.1: Create and distribute an expectations document for implementation of the procedure feedback process to maintenance personnel.

PQ-4.2: See attached Expectations and process document attached to CR PNP-2017-0295, CA 1, and set up a Procedure Feedback drop off box within your department

(Instrument and Controls Maintenance) and communicate requirements to necessary staff members as described in the Expectations document.

PQ-4.3: See attached Expectations and process document attached to CR PNP-2017-0295, CA 1, and set up a Procedure Feedback drop off box within your department (Mechanical Maintenance) and communicate requirements to necessary staff members as described in the Expectations document.

PQ-4.4: See attached Expectations and process document attached to CR PNP-2017-0295, CA 1, and set up a Procedure Feedback drop off box within your department (Electrical Maintenance) and communicate requirements to necessary staff members as described in the Expectations document.

#### PQ-5: Additional Actions

PQ-5.1: Revise the effectiveness review for CR PNP-2016-2058 to address the 95003 team comments on the scope of the interview population and on the criterion related to the number of qualified procedure reviewers.

PQ-5.2: Assign qualified personnel to review procedures used for activities that place the station in an integrated risk above normal.  
Review procedures and ensure they are workable as written and in compliance with 1.3.4-1, *Procedure Writers Guide*.

PQ-5.3: Verify that Effectiveness Review on Operations procedure quality that is documented in PNPLO-2015-208, CA-4 was completed.

PQ-5.4: Perform vendor re-contact to update the vendor manuals documented in CR PNP-2016-5115, as required.

### **Effectiveness Measures**

#### *Metrics*

1. Trend monthly the condition reporting system for PNPS procedure quality issues that were identified after the T-11 procedure review and prior to work execution. This includes all levels of PNPS procedures including "information use" procedure level processed under the requirements of NOP98A1.
2. CRs written for PNPS Procedures having technical errors such that procedure cannot be performed as written because of a technical change that could have led to an adverse outcome at time of work execution.

#### *Effectiveness Review*

3. Perform an Effectiveness Review for the corrective actions PQ-2.2, PQ-3.1, PQ-3.2 and PQ-3.3. Closure of this corrective action requires CARB (PRG) approval of the Effectiveness Review.
  1. Perform a Snapshot Assessment in accordance with procedure.

2. Identify procedures with previously identified issues that impact work execution. (Work Execution Procedure Readiness - Reference PPA AP 907 001 001, *Procedure Performance Metrics*)
3. Identify workers who are qualified to review new procedures and procedure changes in Operations, Maintenance, Radiation Protection and Chemistry.
4. Personnel interviews.

## 6.8 Safety Relief Valve (SRV) White Finding Area Action Plan Summary

### Vision

PNPS personnel promptly identify, thoroughly evaluate, and effectively correct significant conditions adverse to quality.

### Problem Description

In February 2013, Pilgrim Station personnel failed to identify, evaluate, and correct a significant condition adverse to quality associated with safety-relief valve (SRV). As a result, SRV A was inoperable for an extended period of time and a similar failure of SRV C, in January 2015, was not prevented.

### Key Actions to Achieve Improvement

SRV-1: Ensure Operations Management Personnel, Senior Reactor Operators (SRO) (Shift Managers, Control Room Supervisors, Field Support Supervisors/SCRE) and reactor operators (RO) understand their Conduct of Operations roles, responsibilities and expectations as they apply during plant transient conditions.

SRV-1.1: Present a case study on the root cause evaluation of CR PNP-2016-1621 to all Operations Management Personnel, SROs (Shift Managers, Control Room Supervisors, Field Support Supervisors/SCRE) and ROs. The purpose of the case study will be to reinforce the standards and expectations for the conduct of operations that apply during plant transient conditions.

SRV-1.2: Present a simulator-based exercise to all SROs (SRO Licensed Operations Managers, Shift Managers, Control Room Supervisors, Field Support Supervisors/SCRE) and ROs that reinforces the responsibilities from EN-OP-115, *Conduct of Operations*, and Procedure 1.3.34, *Operations Administrative Policies and Processes*.

SRV-1.3: Revise the Licensed Operator Requalification Long-Range Training Plan to include delivery of a Case Study and simulator-based exercise in Operations continuing training (on a 2-year frequency to reinforce the standards and expectations for the conduct of operations that apply during plant transient conditions).

SRV-1.4: Perform assessments of each operating crew to assess application and implementation of the responsibilities from EN-OP-115, *Conduct of Operations*, and 1.3.34, *Operations Administrative Policies and Processes*.

SRV-2: Strengthen the Post-Trip Review (PTR) process by instituting a technical pre-job briefing (member expectations) before beginning the process, assigning a "devil's advocate" during the PTR effort, and instituting a challenge meeting prior to restart authorization.

SRV-2.1: Revise Post-Trip Review procedure to include the following:

- Challenge meeting to occur prior to restart authorization.
- Assign one member to assume role of "devil's advocate" during the PTR.
- Perform a technical prejob briefing with the team before the review.
- Add discussion of operating experience from this root cause evaluation.

SRV-3: Use training and improved guidance to address performance deficiencies in Shift Manager (SM) rigor in the Operability Determination and Functionality Assessment (ODFA) process.

SRV-3.1: Revise procedure 1.3.34, *Operations Administrative Policies and Processes*, to include the following:

Add a step to reinforce that the Shift Manager's approval of Operability Determinations indicates a thorough review and challenge of the data and results to the extent necessary to validate the accuracy of the Operability Determination.

SRV-3.2: Operations managers will conduct face-to-face sessions with all shift managers to reinforce their role in accuracy and rigor in performing operability and functionality determinations. This reinforcement will be repeated and acknowledged semi-annually or until the effectiveness review determines performance is acceptable.

SRV-3.3: Conduct a performance review analysis of SM-qualified individuals' knowledge of their responsibility for operability and functionality determination accuracy and rigor.

SRV-3.4: Present LOCT material #0-RQ-04-01-257 to all SROs who implement EN-OP-104 requirements.

SRV-4: Strengthen the root cause evaluation of the SRV white finding by evaluating and addressing the NRC team comments.

SRV-4.1: Revise the Safety Relief Valve White Finding root cause evaluation (CR PNP-2016-1621) to address the comments provided by the NRC team.

SRV-5: Additional Actions

SRV-5.1: Develop and deliver an ODFA Fundamentals Seminar during LORT.

SRV-5.2: Perform a briefing to the SROs on lessons learned from four identified instances where PNPS potentially failed to either (1) enter a Technical Specification Action Statement or (2) enter the Technical Specification Action Statement in a timely manner.

SRV-5.3: Replace safety-relief valve components such that all four SRVs are of the two-stage Ion Beam Assisted Deposition (IBAD) coated pilot design.

## Effectiveness Measures

### Metrics

1. The percent of CRs initiated by non-Entergy & non-supplemental employees. Data is reported monthly by the PNPS CAP organization and displayed on the Entergy Corrective Action Performance Index.
2. Grading of all operability determinations and functionality assessments that are reviewed by the operations operability determination functionality assessment challenge board (ODCB).

### Effectiveness Reviews

3. Perform an Effectiveness Review for SRV-1.3.

#### METHOD:

1. Perform a document review of the Licensed Operator Requalification Long-Range Training Plan.
  2. Perform a formal Simulator Evaluation of each operating crew on the standards and expectations for the conduct of operations that apply during plant transient conditions (the content to be similar to that developed for SRV-1.2).
4. Perform the Effectiveness Review for SRV-2.1.

METHOD: Perform post-trip review after completing a training simulator scenario during cycle 1 2017-2018 LOR training.

## Engineering Programs and Equipment Performance Focus Area

### 6.9 Engineering Programs Area Action Plan Summary

#### Vision

Station personnel collaborate to ensure that all PNPS engineering programs are rigorously implemented to support excellent safety system performance and reliable plant operation and to ensure compliance with all applicable regulations.

#### Problem Description

Some engineering programs such as Maintenance Rule, Flow-Accelerated Corrosion (FAC), and Preventive Maintenance are not adequately implemented. This has resulted in long-standing and unacceptable material condition deficiencies, equipment failures, system unavailability, and regulatory non-compliance.

#### Key Actions to Achieve Improvement

EP-1: Improve accountability for program health from Directors, Managers and Supervisors by factoring the health of the programs under their cognizance into the performance management process.

EP-1.1: Add an annual requirement to Plateau for the engineering department to read and sign Conduct of Design and Programs Engineering (EN-MS-S-016-MULTI) or Conduct of

Systems and Components Engineering (EN-MS-S-011-MULTI) for their respective department.

EP-1.2: Add an element to the yearly performance review (Success Factors) to require that supervisors, managers and directors are held accountable for the health of the programs under their cognizance.

EP-2: Evaluate the person-hour loading on the engineering staff and provide supplemental support such that the workloads, including oversight, are able to be accomplished through end of plant life.

EP-2.1: Design and implement a resource-loading plan for programs and systems engineers based on the workload expectations for the remainder of plant life.

EP-2.2: Based upon the results of CR PNP-2016-2061, CA-24, reapportion the workload of the System Engineering Supervisors such that they have an adequate amount of time (25% is required by EN-FAP-OM-016) of their time available for mentoring and supervising their staff, excluding PCRS time.

EP-2.3: Engineering Director to issue a directive that requires that corrective actions be assigned to the supervisor with the sub-response to the individual contributor and not directly to the individual contributor.

EP-2.4: Develop a new strategy for the Preventive Maintenance Improvement Plan consistent with the May 2019 plant shut down date. Consider applying the Nuclear Sustainability Plan revised component criticality criteria.

EP-3: Ensure that the current status of engineering programs is acceptable and in line with industry standards.

EP-3.1: Use a subject-matter expert who is an industry expert in the areas of Maintenance Rule to provide mentorship and coaching to station maintenance rule coordinator.

EP-3.2: Perform an assessment of each engineering program. For the deficiencies identified in the assessment ensure corrective actions have been created.

EP-3.3: Perform a Maintenance Rule (a)(1) evaluation (for the components in systems 1, 10, 11, 18, 23, 24, 28, 31, 61, 46, 46B, 46E, 46G identified in the attached lists) in accordance with EN-DC-206, *Maintenance Rule (A)(1) Process*, and obtain Maintenance Rule (MRule) Expert Panel approval. If evaluation determines that an (a)(1) action plan is required then initiate a new action to develop the action plan and obtain MRule Expert Panel approval of the action plan.

EP-4: Additional Actions

EP-4.1: Roll out of new NRC Safety Culture Trait Talk (attached) as a weekly discussion at the engineering morning meeting.

EP-4.2: Develop and issue an Engineering Evaluation, of the use of the leak repair method as a permanent repair approach (per EN-DC-173, *Leak Repair Evaluations*, section 5.5).

As part of the Engineering Evaluation, establish new limits for acceptable leakage from closed loop extensions of containment and revise applicable station procedures.

EP-4.3: Create a repetitive task to perform a vendor re-contact in accordance with EN-DC-148, *Vendor Manuals and the Vendor Re-Contact Process*, for the vendor manuals documented in CR PNP-2016-5115.

The frequency for this rep task should be every 2 years with a one-year grace period. If a re-contact has not been completed within the last 3 years, then a re-contact should be performed within the next 90 days.

## **Effectiveness Measures**

### *Metrics*

1. Pilgrim Engineering Staffing. The Budgeted / Open Positions Engineering indicator measures the average number of open or vacant positions approved for staffing (budgeted) but not filled in the Engineering department divided by the average of number of positions approved for staffing (budgeted - filled and unfilled) for the Engineering department.
  - The data measured by this indicator includes both exempt and non-exempt positions.
  - All positions, including managers and executives are counted.
  - Data is reported for the status on the last day of the month.
2. Engineering Program Health. This indicator provides a status roll-up of the Program Health Report for each of the covered Engineering Programs. Roll-up status is determined based on the number of colored windows associated with the program health of each program.
3. Program Health for Preventative Maintenance Program. This is a composite metric of the following sub-indicators:
  - First Time High Critical PMs (As of Jan-2016)
  - PMs with Discovery Codes
  - Open PMCRs > 60 Days
  - Late Critical PM's
  - Critical PM in Deep Grace
  - Critical PM's Deferred
  - Engineering Input
  - T-28 Scorecard
  - Resource Load Maintenance for all Disciplines
  - % Essential PM feedback reviewed
4. Systems that are Red or Yellow for greater than one fuel cycle.

### *Effectiveness Reviews*

5. Perform an Effectiveness Review for the corrective actions of EP-1, EP-2, EP-3 and EP-4.  
Perform Effectiveness Review of PNPS Engineering Department for the items listed below.



Attributes: Subjective Criteria

1. Management has provided oversight to ensure implementation of required engineering programs at PNPS.
2. Management implemented the resource allocation plan.
3. Corrective action plans for deficient programs are on track and current.
4. Engineering is in compliance with Level 1 IER 14-20, *Integrated Risk - Healthy Technical Conscience*, Recommendation Implementation Plan

Objective criteria

5. Equipment failures as the result of inadequate implementation of preventive maintenance work orders on critical plant components and systems.
6. Component Failures of critical components included in the FAC monitoring program.
7. Incorrect maintenance rule functional failure determinations or incorrect unavailability hour determinations by maintenance rule program personnel.

## 6.10 Equipment Reliability Area Action Plan Summary

### Vision

Station equipment is maintained in a manner that ensures reliable performance, minimal operator challenges, and safety-related equipment that operates on demand under all design conditions.

### Problem Description

Station equipment performance and material condition do not meet fleet and industry standards. These weaknesses have resulted in long-standing equipment problems and less than adequate equipment reliability which have led to station challenges and events.

### Key Actions to Achieve Improvement

ER-1: Outline and communicate renewed management expectations, then observe and influence behaviors with a mentoring team to ensure station leadership is consistently exhibiting and supporting the fundamental concepts of a zero tolerance for unanticipated equipment failure.

ER-1.1: Develop and incorporate into a PNPS recovery procedure the actions to be implemented by the Equipment Reliability (ER) mentor team. The procedure guidance will outline mentor team expectations to monitor and influence leadership behaviors primarily for Operations, System Engineering, Production, and Maintenance leaders, focusing leadership attention to the specific needs of driving acceptable Equipment Reliability results.

ER-1.2: Establish a mentor team of 1 team lead and at least 3 independent experienced professionals to monitor and provide timely coaching on leadership behaviors regarding the implementation of equipment reliability programs and processes during day-to-day Equipment Reliability activities at Pilgrim.

ER-1.3: Using the guidance contained in EN-FAP-HR-006, *Fleet Approach to Leadership Development & Organizational Effectiveness*, and EN-PL-100, *Nuclear Excellence Model*; the directors will ensure Individual Targeted Performance Improvement Plans (TPIPs) are

developed for all leaders (Supervisors and up) who report up to them with objectives that address identified leadership behavior gaps.

ER-1.4: Identify Equipment Reliability-specific behavioral expectations for inclusion in the PNPS employee handbook (CR PNP-2016-2052, CA-43).

ER-2: Provide additional resources in Engineering, Maintenance, and Work planning to ensure unexpected equipment failures are prevented with strong station teamwork and adequate staffing.

ER-2.1: Reassess the additional resources brought in under CR PNP-2016-2057, CA-41. As part of that assessment, perform the following:

Design and implement a resource-loading plan for maintenance shops based on the workload expectations for the remaining 2 years of plant life.

ER-2.2: Determine the estimated man-hours required to reduce backlogs and maintain fleet performance goals using the CFAM work management supply and demand model.

ER-2.3: Provide supplemental support for the systems, components, and engineering supervision functions. At a minimum, assign the following staff augmentation:

- Four (4) to six (6) engineering staff for staff augmentation
- One (1) engineering supervisor to augment systems and/or component health oversight

ER-2.4: Track action CR PNP-2016-2057, CA-41 (supplement Maintenance Department staff) to completion and verify closure.

ER-3: Identify and correct, as required, latent unmitigated component aging vulnerabilities that could challenge plant operations before end of operating plant life. Review high risk significant components in the Probabilistic Safety Analysis (PSA) Risk Significant systems.

ER-3.1: Evaluate the scope of risk-significant components in the identified Systems to identify any unmitigated component aging vulnerabilities that could challenge plant operations before end of operating plant life.

ER-3.2: Track the completion of the mitigation strategies for the 4 open unmitigated Single Point Vulnerabilities at PNPS. These are scheduled to be completed during RFO21 and include the following:

- \* Replace Feedwater Level A/B Channel Selector Switch (604-301), if required based on scheduled testing
- \* Replace Feedwater Level Control Single Element / Three Element Selector Switch (604-302), if required based on scheduled testing
- \* Perform Motor Rewind on Sea Water Pump B (P-105B)
- \* Perform Startup Transformer CCVT Inspections and Testing (X4)

ER-3.3: Identify what on-line maintenance or surveillance activities scheduled from July 14, 2016 to December 31, 2017 could create a condition where a single failure can result in a scram or could result in a plant trip becoming a complicated scram.

#### ER-4: Additional Actions

ER-4.1: Capture analytical and testing work done by MPR to assist in significance determination and cause elimination for Emergency Diesel Generator gearbox relief valve.

ER-4.2: Perform a root cause evaluation of the loss of oil in the Emergency Diesel Generator A radiator gear box in accordance with EN-LI-118, including PRG approval.

ER-4.3: Determine whether the loss of the capability to assess the existence of deflagration concentrations in the Primary Containment impacts the ability of Operations to assess a Loss or Potential Loss of the Primary Containment Fission Product Barrier for Emergency Action Levels.

ER-4.4: Revise the existing reportability tab for CR PNP-2016-0941 to reflect current understanding.

ER-4.5: Implement Maintenance Rule Program Actions to restore Post-Accident Sampling System and Hydrogen/Oxygen Monitoring System to A2 status.

ER-4.6: Update the (a)(1) plan for the Hydrogen/Oxygen Monitoring System and present it to the expert panel. Obtain expert panel approval to return the system to (a)(2) status.

#### Effectiveness Measures

##### *Metrics*

1. Equipment Reliability Index (ERI). An indicator for equipment reliability which uses a composite of 18 key indicators which have a weighted value to add up to 100 as the highest score. This indicator reflects key areas of performance beyond those typically used for generation and system health alone. The ERI is focused on measuring the longer-term trend of improvements.

##### *Effectiveness Review*

2. Perform an Effectiveness Review for ER-2.1, ER-2.3 and ER-2.4.

#### 6.11 Work Management Area Action Plan Summary

##### **Vision**

PNPS uses the Work Management (WM) process to improve equipment reliability by effectively utilizing station resources. Station personnel collaborate to ensure that equipment reliability is maximized and risk is minimized.

##### **Problem Description**

Preparation, control and execution of work activities are not rigorously implemented such that equipment reliability is the overriding priority. This has resulted in high maintenance backlogs, long-standing equipment reliability issues and deferred corrective actions.

## Key Actions to Achieve Improvement

WM-1: Ensure management and supervision are aware of their roles and responsibilities within the work management process.

WM-1.1: Management T-week sponsors to provide management oversight and coaching for work week preparation meetings. The sponsors/designees attendance and coaching will be documented using the meeting WILL sheets.

WM-1.2: The Production Manager will outline roles, responsibilities, and expectations as defined by EN-WM-101, *On-line Work Management Process*, for conducting the work management process. This will be disseminated to the following managers:

- System Engineering
- Operations
- Maintenance
- Chemistry
- Radiation Protection
- Projects

The Managers will communicate the expectations to their direct reports.

WM-1.3: For the time period of 11/01/16 through 4/30/17 the T-week meeting management sponsors or designees will be required quorum members for the meeting. This will be documented using the meeting WILL sheets.

WM-2: Ensure that all involved personnel have the knowledge and skills necessary to perform their roles within the work management process.

WM-2.1: Using the Systematic Approach to Training, design, develop and implement training for Work Management Coordinators (including the Unit Coordinator) and WM representatives regarding their responsibilities and expectations for milestone adherence when developing and implementing the work production schedule.

WM-2.2: Develop and provide training to qualified PNPS planners on EN-FAP-WM-011, *Work Planning Standard*.

WM-3: Ensure that the work order backlog is well understood and that sufficient resources are available to address it.

WM-3.1: Perform an initial on-line backlog validation/reduction effort with a cross-disciplinary team to include Operations, Production, Maintenance and Engineering.

WM-3.2: Based being able to protect the schedule and gain on backlog reduction, the Maintenance Manager determined that Maintenance resources must be increased in order to reduce work orders backlogs to meet fleet goals.

Add the following additional personnel:

- 2 - Mechanics
- 1 - Electrician
- 1 - Instrument and Control
- 1 - Planner
- 1 - Supervisor

WM-3.3: Reassess the additional resources brought in under CR PNP-2016-2057, CA-41. As part of that assessment, perform the following:

Design and implement a resource-loading plan for maintenance shops based on the workload expectations for the remaining 2 years of plant life.

Determine the estimated man-hours required to reduce backlogs and maintain fleet performance goals using the CFAM work management supply and demand model.

WM-3.4: Using established burn down curve; monitor the work order backlog reduction monthly until September 2017.

For any month not within 5% of the burn down curve, write a CR to document and develop a recovery plan.

WM-3.5: Implement the Work Management Improvement Plan developed in CR PNP-2016-8099, CA-21.

#### WM-4: Additional Actions

WM-4.1: Interim Action: Using established burn down curve; monitor the backlog reduction monthly until December 2016 (when the fleet goals will be met.) (CC, CN, DC, DN)

For any month, not within 5% of the burn down curve, write a CR to document and develop a recovery plan.

WM-4.2: Establish controls to ensure seasonal equipment preparations are completed with margin to the start of challenging weather conditions.

### Effectiveness Measures

#### *Metrics*

1. DC Backlog. The number of DC backlog work orders for the unit at the end of the quarter (reporting period). Any work on a plant component that has a potential or actual deficiency that does not threaten the component's design function or performance criteria. (Reported per Unit).
2. PHC Effectiveness. Select the Plant Health Committee (PHC) Effectiveness as the percent of PHC identified commitments completed per station as scheduled.
3. Critical Scope Survival. From the original scope freeze (as defined by AP-928), some work does not survive the process up to execution, for a variety of reasons. This indicator will measure the percentage of critical component work orders identified for inclusion in the workweek at the scope freeze that are completed in execution week (T-0). This indicator will also measure the ability of the station to deliver all work preparation milestones and material availability of critical components compared to what was originally selected into the workweek.
4. Weekly Schedule Adherence. This indicator measures the timely completion of all work activities that are adherence levels 1, 2 and 3 on a daily basis. The indicator will count work activities with adherence levels 1, 2 and 3 that are completed on same calendar day as their finish time.

5. Critical Component PM's open in 2nd half of grace, per unit, at the end of the reporting period.

*Effectiveness Reviews*

6. Evaluate the effectiveness of the backlog validation reduction by performing a snapshot self-assessment using the following attributes:  
Using established burn down curve; monitor the backlog reduction monthly until February 2017. (CC, CN, DC, DN) (December 2016 is when the fleet goals will be met.) For any month, not within 5% of the burn down curve, write a CR to document and develop a recovery plan.  
Success will be measured by:  
Fleet Goals are met for last 2 months  
All are within 5% of the burn down curve for 2 months.
7. Evaluate the effectiveness of the training that was provided using the T-week Meeting WILL sheets.  
Monitor for each T-Week Meeting to be graded at  $\geq 85\%$ .  
Success: 90% of WILL sheets will be at  $\geq 85\%$  effectiveness with a minimum of 30 WILL sheets included in the population.
8. Evaluate the effectiveness of the backlog validation reduction by performing a snapshot self-assessment using the following attributes:  
Using established burn down curve; monitor the backlog reduction monthly until February 2017. (CC, CN, DC, DN) (December 2016 is when the fleet goals will be met.) For any month, not within 5% of the burn down curve, write a CR to document and develop a recovery plan.  
Success will be measured by:  
Fleet Goals are met for last 2 months  
All are within 5% of the burn down curve for 2 months.
9. Evaluate the effectiveness of the training that was provided using the T-week Meeting WILL sheets.  
Monitor for each T-Week Meeting to be graded at  $\geq 85\%$ .  
Success: 90% of WILL sheets will be at  $\geq 85\%$  effectiveness with a minimum of 30 WILL sheets included in the population.

**List of Inspection Focus Areas to Assess Sustained Performance Improvement at Pilgrim<sup>1</sup>**

- 1) Nuclear Safety Culture. To address issues associated with the nuclear safety culture fundamental problem, Pilgrim will implement the following actions by May 31, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Nuclear Safety Culture	NSC-1.1 <sup>2</sup> , -1.2, -1.3, -1.4, -1.5 <sup>2</sup> , -1.6, -1.7, -1.8, -1.10, -2.2, -2.3, -3.1, -3.2, -3.3, -3.4, -3.5, -3.6, -3.7, -3.8, -4.1, -4.2, -5.1, -5.2, -5.3, -5.4, -6.1, -7.1, -8.1, -8.6, -8.8, -8.9, -8.10, -8.21, -8.22, -8.25, -8.26, -8.27, -8.28, -8.29

- 2) Corrective Action Program. To address issues associated with the corrective action program fundamental problem, Pilgrim will implement the following by March 30, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Corrective Action Program	CAP-1.1, -1.2, -1.3, -1.4, -1.5, -1.7, -1.8, -1.9, -1.10, -1.11, -2.1, -2.2, -2.3, -3.1, -3.2, -4.2, -4.3

- 3) Human Performance. To address issues associated with the human performance key attribute of the reactor safety strategic performance area, Pilgrim will implement the following actions by February 28, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Procedure Use and Adherence	PUA-1.1, -1.2 <sup>3</sup> , -1.3 <sup>3</sup> , -1.4, -1.6, -2.2, -2.3, -2.4, -2.5, -3.1, -3.2, -3.3, -3.4, -4.1, -4.2, -4.3, -5.1, -5.2, -5.7, -5.8, -5.9
Operability Determinations and Functionality Assessments	ODFA-1.1, -1.2, -1.3, -1.4, -1.5, -1.6, -2.2, -3.1, -5.1, -5.2, -5.3, -5.4, -5.5, -5.6, -5.7, -5.8

- 4) Operational Standards and Leadership. To address issues associated with Operations Department standards and leadership, Pilgrim will implement the following actions by May 31, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Operations Department Standards and Leadership	OPS-1.1, -1.2, -1.4, -1.6, -1.7, -2.2, -3.1, -3.2, -4.1, -4.2
Risk Recognition and Decision Making	RRDM-1.1, -1.2, -1.3, -2.1, -3.1, -3.2, -3.3, -4.3, -4.8, -4.9

<sup>1</sup> The Area Action Plans and Corrective Action Nos. provided in this enclosure are defined in Enclosure 1, Pilgrim Nuclear Power Station Recovery Plan.

<sup>2</sup> NSC-1.1 and NSC-1.5 as described in the Recovery Plan are the same action directed at different levels of the organization

<sup>3</sup> PUA-1.2 and PUA-1.3 as described in the Recovery Plan are the same action repeated for reinforcement

- 5) Procedure Quality. To address issues associated with the procedure quality key attribute of the reactor safety strategic performance area, Pilgrim will implement the following actions by November 30, 2017:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Procedure Quality	PQ-1.1, -2.1, -2.2, -3.1, -3.2, -3.3, -5.1, -5.2

- 6) Safety Relief Valve (SRV) White Finding. To fully address root and contributing causes in response to the White finding associated with the failure to identify, evaluate, and correct a significant condition adverse to quality associated with the 'A' SRV failure to open (ML15147A412), including corrective actions to preclude repetition, Pilgrim will implement the following actions by March 30, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
SRV White Finding	SRV-1.1, -1.2, -1.3, -2.1, -3.1, -3.2, -3.3, -3.4, -4.1, -5.1, -5.2

- 7) Engineering Programs and Equipment Performance. To address issues associated with the engineering programs, equipment performance, and work management problem areas, Pilgrim will implement the following actions by June 28, 2018:

<u>Area Action Plan</u>	<u>Corrective Action No.</u>
Engineering Programs	EP-1.1, -1.2, -2.1, -2.2, -2.3, -2.4, -3.1, -4.1
Equipment Reliability	ER-1.1, -1.2, -1.3, -2.1, -2.2, -3.1, -3.2, -3.3
Work Management	WM-1.1, -1.2, -1.3, -2.1, -2.2, -3.1, -3.3, -4.2