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OCAN051602

May 17, 2016

Mr. Marc L. Dapas
Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
1600 East Lamar Boulevard
Arlington, TX 76001-4511

SUBJECT: ANO Comprehensive Recovery Plan
Arkansas Nuclear One, Units 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6

Dear Mr. Dapas:

This letter transmits the Arkansas Nuclear One (ANO) Comprehensive Recovery Plan (CRP).

Purpose of the Comprehensive Recovery Plan

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

The purpose of the CRP is not only to address specific issues and deficiencies, but to correct the causes of the fundamental problems that led to the decline in ANO'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. In particular, the CRP is designed to ensure that ANO maintains a clear focus on nuclear safety as the top operational priority and primary goal of station activities.

Basis and Structure of the Comprehensive Recovery Plan

The actions included in the CRP have been developed based upon a comprehensive evaluation of site performance deficiencies to identify the fundamental problems associated with ANO's decline in performance, including 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 ANO Recovery Process and applicable techniques specified in the ANO

Corrective Action Program (CAP) to determine the causes of those fundamental problems and to develop corrective actions. Those actions have been entered into the CAP and will be tracked to completion under the CAP.

The CRP contains those actions upon which ANO is placing primary reliance in order to resolve issues and achieve sustainable performance improvement at ANO. Those actions are organized into fourteen Area Action Plans within the five Improvement Areas of the LEARN model, as follows:

LEARN Improvement Area	Area Action Plan
Leadership	Nuclear Safety Culture
	Leadership Fundamentals
	Organizational Capacity
	Procedure and Work Instruction Quality
Equipment Reliability	Preventive Maintenance
	Design and Licensing Basis
	Plant Health
	Flood Protection
Analysis and Correction	Corrective Action Program
	Corporate and Independent Oversight
	Training to Improve Organizational Performance
Risk and Decision Making	Decision Making and Risk Management
	Lift Rig Failure and Vendor Oversight
Nuclear Fundamentals	Nuclear Fundamentals

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. Approximately 80 percent of the actions have been or are scheduled to be completed before the end of 2016. The majority of the remaining actions will be completed in 2017. For those few long term actions extending beyond 2017, substantial progress is anticipated to be made in advance of their scheduled completion date. The schedule was prioritized based on risk and optimizing the development of the ANO work force.

Ensuring Quality Implementation and Effectiveness of the Comprehensive Recovery Plan

The effectiveness of the CRP 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 CRP 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 CRP 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 ANO Recovery Team and in the ANO CAP.
- Action Closure Review Boards (ARCBs) will provide review 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 CRP 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 CRP.

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

Prior to closure of an Area Action Plan, a formal final effectiveness review will be implemented, and a Closure Report will be prepared. That review and report will 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 ANO Site Vice President prior to closure of that Area Action Plan.

Potential Adjustment of Improvement Actions

Entergy is committed to rigorous implementation of the CRP, and to ensuring its effectiveness. As implementation 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 ANO CRP, broader improvement initiatives are anticipated for the Entergy nuclear fleet. These fleet initiatives may result in changes to actions in the ANO plan as improvements are made and standards defined for the Entergy fleet as a whole. Changes to

the ANO CRP will be controlled through the ANO CAP process and reviewed and approved in accordance with ANO Recovery Project procedures. Entergy will keep the NRC apprised in a timely manner of changes to CRP actions.

In conclusion, Entergy has developed a comprehensive plan to address the issues that have led to the decline in ANO 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 ANO 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, please contact me or Dale James, ANO Director of Regulatory and Performance Improvement, at (479) 858-4619.

Sincerely,

ORIGINAL SIGNED BY JEREMY G. BROWNING

JGB/dej

Attachment: ANO Comprehensive Recovery Plan, Rev. 0

cc: NRC Senior Resident Inspector
Arkansas Nuclear One
P. O. Box 310
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U. S. Nuclear Regulatory Commission
Attn: Mr. Stephen Koenick
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Attachment to

OCAN051602

ANO Comprehensive Recovery Plan, Rev. 0

ANO Comprehensive Recovery Plan, Rev. 0

1.0 PURPOSE

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

The purpose of the CRP is not only to address specific issues and deficiencies, but to correct the causes of the fundamental problems that led to the decline in ANO'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 CRP is designed to ensure that ANO maintains a clear focus on nuclear safety as the top operational priority and primary goal of station activities.

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

2.0 BASIS FOR THE COMPREHENSIVE RECOVERY PLAN

The actions included in the CRP have been developed based upon a comprehensive evaluation of site performance deficiencies to identify the fundamental problems associated with ANO's decline in performance, and the causes of those problems. The evaluation effort, and development of the CRP, 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 2007 to 2015, specifically including the stator drop and internal flood barrier issues that resulted in ANO's placement in Column IV of the NRC Reactor Oversight Program Action Matrix.
- A Third Party Safety Culture Assessment (TPSCA) as contemplated by NRC Inspection Manual Chapter 0305. The TPSCA 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 site performance issues identified during the historical review and TPSCA to determine the fundamental problems associated with performance decline.
- Cause evaluations of the fundamental problems identified through the comprehensive evaluation of site performance, including the safety culture issues identified through the TPSCA. These cause evaluations were conducted pursuant to the requirements of the ANO 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 ANO 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 CRP Area Action Plan structure. CRP actions are being tracked and implemented through the ANO CAP, and also tracked and monitored as described in Section 4.0 below.

3.0 STRUCTURE OF THE COMPREHENSIVE RECOVERY PLAN

The CRP 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 ANO. The CRP consists of fourteen Area Action Plans within the five Improvement Areas of the LEARN model, as follows:

LEARN Improvement Area	Area Action Plan
Leadership	Nuclear Safety Culture
	Leadership Fundamentals
	Organizational Capacity
	Procedure and Work Instruction Quality
Equipment Reliability	Preventive Maintenance
	Design and Licensing Basis
	Plant Health
	Flood Protection
Analysis and Correction	Corrective Action Program
	Corporate and Independent Oversight
	Training to Improve Organizational Performance
Risk and Decision Making	Decision Making and Risk Management
	Lift Rig Failure and Vendor Oversight
Nuclear Fundamentals	Nuclear Fundamentals

The actions in these plans include the following:

- CAPRs identified during the collective evaluation process, 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 ANO 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 CRP. Closure of CRP actions in the Area Action Plans is also being tracked in the ANO 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 CRP actions must also meet the requirements of the ANO 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 CRP.

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 ANO 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 CRP and effectiveness in achieving results, and provide feedback to ANO management regarding needed adjustments or supplementation of the CRP.

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 ANO 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 CRP 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 ANO CRP, broader improvement initiatives are anticipated for the Entergy nuclear fleet. These fleet initiatives may result in changes to actions in the ANO plan as improvements are made and standards defined for the Entergy fleet as a whole. Changes to the ANO CRP will be controlled through the ANO CAP and reviewed and approved in accordance with ANO Recovery Project procedures. Entergy will keep the NRC apprised in a timely manner of changes to CRP actions.

The Area Action Plan Summaries are presented in the following sections below:

Leadership

- Nuclear Safety Culture Section 6.1
- Leadership Fundamentals Section 6.2
- Organizational Capacity Section 6.3
- Procedure and Work Instruction Quality Section 6.4

Equipment Reliability

- Preventive Maintenance Section 6.5
- Design and Licensing Basis Section 6.6
- Plant Health Section 6.7
- Flood Protection Section 6.8

Analysis and Correction

- Corrective Action Program Section 6.9
- Corporate and Independent Oversight Section 6.10
- Training to Improve Organizational Performance Section 6.11

Risk and Decision Making

- Decision Making and Risk Management Section 6.12
- Lift Rig Failure and Vendor Oversight Section 6.13

Nuclear Fundamentals

- Nuclear Fundamentals Section 6.14

6.1 Nuclear Safety Culture Area Action Plan Summary

Vision

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

Problem Description

Some key Nuclear Safety Culture (NSC) attributes/behaviors have been associated with a number of the fundamental problems identified for ANO's decline in performance. These NSC attributes/behaviors, if not fully understood and corrected in aggregate, could impact ANO's return to a healthy NSC.

Key Actions to Achieve Improvement

- SC-1 Establish and fill a full time ANO NSC Manager position to be the site change agent for NSC.
- SC-2 Revise the procedure “Nuclear Safety Culture Monitoring” to define the role and responsibilities of the ANO NSC Manager.
- SC-3 Revise the procedure “Nuclear Safety Culture Monitoring” to add Nuclear Safety Culture Monitor Orientation training for Nuclear Safety Culture Monitoring Panel (NSCMP) and Safety Culture Leadership Team (SCLT) members.
- SC-4 Conduct a structured off-site meeting among the ANO Senior Leadership Team to align on what a Strategic Commitment to Safety looks like at ANO and the leader behaviors that will demonstrate that commitment.
- SC-5 Create an ANO Employee Handbook that includes NSC, Safety Conscious Work Environment (SCWE) and CAP standards and expectations, and provide orientation and expectations to ANO personnel on the contents and use of this handbook as a daily tool for communicating, reinforcing, and demonstrating NSC and CAP expectations.
- SC-6 Conduct meetings facilitated by members of the site management to rollout the ANO Employee Handbook to ANO personnel and expectations for its use.
- SC-7 Establish a small group meeting schedule to facilitate face-to-face interaction between ANO senior leadership and station employees. This activity should span a minimum period through the end of 2016 and include the following attributes: (1) purpose is open dialogue on safety performance with emphasis on employee questions and feedback, and (2) schedule should be coordinated to facilitate broad exposure, with emphasis on workers on shift rotation who can’t routinely participate in other communication forums.
- SC-8 Develop and implement a “field presence” initiative that promotes and measures leader field presence. Objective is to drive and verify field presence by leaders to engage with employees and reinforce high standards.
- SC-9 Develop and provide training to ANO leaders, including supervisory training on NSC and SCWE, constructive conversation skills, and how to foster a strong nuclear safety culture within their organizations.
- SC-10 Develop and present training to ANO workforce to include case studies that illustrate the “right picture” of Nuclear Safety Culture. Include what it means to be an engaged and thinking individual nuclear worker as per recommendation 3.a. of Significant Operating Event Report (SOER) 10-2, Engaged, Thinking Organizations.
- SC-11 Implement priority group specific action plans to address safety culture issues.
- SC-12 Determine the site staffing level for key departments based on experience, training needs, knowledge management needs, timing of expected retirements, resignations and reassignments, and the actual needs for a site with two dissimilar units.
- SC-13 Authorize and hire the Entergy personnel and/or contractor positions identified as immediate staffing requirements by the ANO People Health Committee (APHC) during Organizational Capacity Assessment reviews.

- SC-14 Establish and implement a Nuclear Safety Culture Observation process including elements of Leaders Behaviors, NSC, and SCWE. The observer monitors leader performance on a daily basis and provides feedback to correct adverse trends in behaviors.
- SC-15 Raise the priority and visibility of NSC at the fleet level by revising the Corporate Oversight Model to include station NSC output from the nuclear safety culture monitoring panel as input to fleet Oversight Analysis Meetings and Oversight Review Boards.
- SC-16 Develop and implement CAP initial and continuing training for station employees, Apparent Cause Evaluators / Root Cause Evaluators (ACE/RCE), Responsible Managers, Department Performance Improvement Coordinators, and Performance Improvement personnel.

Effectiveness Measures

Metrics

- 1. Engagement (OR) Survey Results, which is derived from quarterly survey data, measures survey responses in comparison to industry norms and provides trend results for the safety culture characteristics involving priorities and communications.
- 2. ECP Timeliness measures timeliness of response to items within the Employee Concerns Program (ECP).

Note - Multiple metrics associated with other Area Action Plans provide insights into the station's nuclear safety culture and will be used as part of the ongoing assessments of this area.

Assessments

- 3. Quarterly Organizational Effectiveness surveys will be conducted to measure trends in employee perceptions regarding nuclear safety culture.
- 4. NSCMP monitoring of safety culture aspects will be performed on a quarterly basis, including monitoring of progress in implementation and effectiveness of the nine Priority Group action plans.
- 5. Periodic pulsing and/or focus group interviews, which are reviewed on a quarterly basis, will collect information on whether employees understand their role in NSC and their views on the strength of selected aspects of NSC at ANO.
- 6. A Synergy survey will be performed for comparison to the 2014 Synergy survey results that were part of the ANO third party nuclear safety culture assessment, including results for each of the priority groups.
- 7. A Focused Assessment to evaluate progress in improving safety culture will be conducted using the results of the 2016 Synergy safety culture survey in comparison with results found in the 2014 Synergy safety culture survey and the 2015 TPSCA. The monthly NSCMP reviews of the nine Priority Group action plans progress will also be considered.

6.2 Leadership Fundamentals Area Action Plan Summary

Vision

ANO leaders consistently reinforce nuclear safety as the top priority through their words and actions. The ANO team is aligned to a vision of excellence and ANO is recognized as an industry benchmark for teamwork and employee engagement.

Problem Description

Leaders are not consistently demonstrating and reinforcing high standards of performance. As a result, the NSC at ANO has weakened over several years and the ANO team has not adequately addressed performance issues.

Key Actions to Achieve Improvement

Set/Communicate Standards/Expectations for Leader Behaviors

- LF-1 Conduct leadership assessments for the senior lead team, managers and superintendents and establish individual development plans to support closing identified gaps in leader behaviors.
- LF-2 Establish and roll out an ANO employee handbook with attributes and behaviors supporting nuclear safety and long term strategic improvement. The purpose of the handbook is to communicate and reinforce key values and behaviors.
- LF-3 Provide supervisory training on constructive conversation skills.
- LF-4 As an interim action, establish weekly leadership alignment meetings for supervisors and above to reinforce actions and behaviors needed to achieve recovery objectives.
- LF-5 Provide supervisory training on NSC and SCWE.
- LF-6 Benchmark an external organization for Leadership Fundamentals and develop improvement actions as warranted based upon the results.
- LF-7 Initiate quarterly All-Hands meetings to engage the workforce in recovery efforts.

Model/Reinforce Leader Behaviors

- LF-8 As an interim measure, establish and implement external coaching for a sample of department and station performance review meetings in the Trending and Performance Review process.
- LF-9 Establish a NSC Observer function to observe and provide feedback on leader behaviors in key forums and to provide observation data for review by the NSCMP.
- LF-10 Establish and implement an interim paired observations program for leaders to coach leaders on leadership behaviors.

Monitor Leader Behaviors

- LF-11 Create Trending and Performance Review performance windows and aspects to improve the review of leadership performance in the areas of:
- Leadership Fundamentals: (1) Vision and Values, (2) Teamwork, (3) Accountability, (4) Employee Engagement, and (5) Resource Allocation.
 - Performance Improvement: (1) Issue identification, evaluation and resolution, (2) Ownership of procedures and work processes, (3) Industry participation, (4) Self-assessments and benchmarking, and (5) Operating experience.
 - Nuclear Safety: (1) Decision-making, and (2) SCWE.
- LF-12 Review a sample of Monthly Performance Management Meeting results (1X1 meetings between leaders and their supervision which reviews observation of their group's and their personal performance) and provide results of this review to leadership and department results to respective managers for use in improving the conduct of these meetings.
- LF-13 Conduct quarterly surveys to measure employee perception of leader behaviors.
- LF-14 Create a simple tool to analyze externally identified performance issues both individually and in aggregate to present actionable data to the Aggregate Performance Review Meeting (APRM).

Effectiveness Measures

Metrics

1. 1X1 Effectiveness measures the level of participation and quality of one-on-one performance review meetings between management personnel and their supervisor.
2. Field Presence measures field interactions between management and workers.
3. Errors measures leadership influence on worker behaviors based on error rates.
4. (NIOS) Resolution Times measures leadership responsiveness to issues raised by the Nuclear Independent Oversight (NIOS) organization.

Assessments

5. Pulsing interviews and survey data will be used to obtain the views of the workforce on whether improvement is occurring in leadership behaviors.
6. A focused self-assessment will evaluate overall effectiveness of the Leadership Fundamentals Area Action Plan, including verification of completion of key actions and examination of performance.

6.3 Organizational Capacity Area Action Plan Summary

Vision

The station has sufficient human resources with the required knowledge and skill to support Nuclear Safety and achieve excellence. Workers' effectiveness is maximized by prioritizing work, improving processes, and doing the job right the first time. Leaders apply a strategic approach to station staffing and applying sound change management for organizational and process changes.

Problem Description

Organizational Capacity (i.e., allocation of resources and process efficiencies) has been insufficient to maintain strong station performance. This condition has resulted in high levels of overtime in some areas, increased backlog levels, and teamwork issues.

Key Actions to Achieve Improvement

- OC-1 Perform Organizational Capacity Assessments to determine staffing requirements for key departments based on experience, training needs, knowledge management needs, timing of expected retirements, resignations and reassignments, and the needs for a site with two dissimilar units.
- OC-2 Authorize the hiring of Entergy personnel and/or contractor positions identified as immediate staffing requirements by the ANO Comprehensive Recovery Plan APHC during Organizational Capacity Assessment reviews.
- OC-3 Establish and implement an ANO Integrated Strategic Workforce Plan (ISWP) that provides a strategic long-term perspective of future staffing needs with an explicit focus on ensuring staffing is sufficient to support nuclear safety. The workforce planning process will look into the future at least five-years, be updated annually, and reviewed quarterly by the APHC.
- OC-4 Establish and implement an APHC to place priority on staffing and retention issues that are impacting ANO employees or could impact nuclear safety.
- OC-5 Develop and issue an Entergy change management procedure for planning, execution, and follow up of "high risk" changes. Procedure will include specific expectations for reviewing effectiveness of the "high risk" change.
- OC-6 Create and issue an ANO specific Recovery procedure to align with EN-LI-121, "Trending and Performance Review Process," and incorporate a simple tool to analyze externally identified performance issues both individually and in aggregate to present actionable data to the APRM.

Effectiveness Measures

Metrics

1. Overtime Rate Non-Outage measures whether work demands are met without high rates of overtime.
2. Station Staffing measures the effectiveness of hiring practices to minimize vacancies, including actions necessary to fill authorized positions identified in staffing assessments.
3. CR Backlog Management measures resolution of adverse conditions.
4. Maintenance Backlog measures whether equipment maintenance is being completed in a timely fashion.

Assessments

5. A focused self-assessment will be performed to evaluate corrective action implementation and overall effectiveness of this Area Action Plan in addressing organizational capacity issues.

6.4 Procedure and Work Instruction Quality Area Action Plan Summary

Vision

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

Problem Description

Station procedures and work instructions lack consistent human factoring and clarity to help ensure predictable, repeatable, and successful work performance. In some cases, procedures and work instructions have been technically inaccurate or incomplete.

Key Actions to Achieve Improvement

- PQ-1 Develop and implement a Site Procedure Writer Guide based on applicable Industry standards.
- PQ-2 Develop and implement a Work Order Instructions Guide based on applicable industry standards.
- PQ-3 Perform scoping reviews to assess extent of procedure and work instruction quality issues.
- PQ-4 Conduct a Procedure Professionals Association (PPA) Certification Course for selected plant personnel.
- PQ-5 Risk rank station procedures as safety significant, important, or normal to facilitate procedure upgrade project scoping.
- PQ-6 Upgrade procedures classified as "Safety Significant".
- PQ-7 Upgrade procedures classified as "Important".
- PQ-8 Upgrade procedures classified as "Normal".
- PQ-9 Upgrade Critical 1-4 Model Work Orders with a frequency of greater than or equal to 2 years or 2 refueling outages. Include associated procedures.
- PQ-10 Review and/or validate station procedures with respect to gaps in use of "notes and cautions," and ensure needed corrections are entered into the appropriate station processes for completion.
- PQ-11 Establish periodic review and validation of station procedures. This will also support a systematic approach to revising station procedures not included in other actions to the standards contained in the new writers' guide.

Effectiveness Measures

Metrics

1. Procedure and Work Instructions Work-Off Curves monitor the success and timeliness of the procedure and work order upgrade project.
2. Procedure and Work Instruction Backlogs measure whether procedure and work instruction issues are being addressed in a timely fashion.

Assessments

3. Procedure Improvement Forms will be monitored by the procedure group supervisor for feedback on revised procedures. Employees will be interviewed/surveyed for end user satisfaction on revised procedures as the project progresses. Additionally, station condition reports will be monitored for conditions involving revised procedures. Results will be reported on a quarterly basis.
4. A self-assessment will measure overall effectiveness in improving procedure and work instruction quality based on pre-selected objectives.

6.5 Preventive Maintenance Area Action Plan Summary

Vision

ANO is an Industry Leader in Equipment Reliability. The Preventive Maintenance Program is continuously optimized to ensure the plant operates reliably, with minimal operator challenges, and that equipment important to safety is capable of operating on demand and under all design conditions.

Problem Description

The ANO Preventive Maintenance (PM) Program has in some cases been deficient in preventing risk significant equipment failures.

Key Actions to Achieve Improvement

Improve Preventive Maintenance Program Procedures to Provide Additional Rigor in Evaluations

- PM-1 Create a site specific procedure for component classification that will ensure appropriate classification of equipment for PM based upon risk and safety.
- PM-2 Create a site specific preventive maintenance program procedure that includes lessons learned from the PM Fundamental Problem root cause related to critical input to PM changes.
- PM-3 Revise the PM change form justification documentation to clarify that 'Non-Critical' does not equate to 'Non-Important' or 'Run-to-Failure'.
- PM-4 Transfer responsibility for PM evaluations of all Maintenance Rule components and critical system redundancy components to Engineering to ensure that appropriate expertise is brought to bear on these evaluations.

Increase Management Oversight

- PM-5 The PM Oversight Group will review all PM change requests for a minimum of 12 months and initiate corrective action for any that do not meet management standards for quality.
- PM-6 The INPO Event Report (IER) Review Board will review all formal Operating Experience (OE) evaluations for 12 months and initiate corrective action for any that do not meet management standards for quality.
- PM-7 The Planning Quality Review Team (PQRT) will perform an enhanced review of critical Work Orders for a minimum of 12 months and feedback the results to the Planning staff.
- PM-8 Revise EN-PL-100, "Nuclear Excellence Model," and EN-PL-161, "Zero Tolerance for Unanticipated Equipment Failures," to state 'Non-Critical' does not mean 'Non-Important'.
- PM-9 Develop metrics for the number of open craft work order feedback requests.
- PM-10 Reestablish the PM Program Health Report for a period of at least 12 months.

Improve Qualification and Training

- PM-11 Implement a new qualification card for Maintenance personnel who perform PM Evaluations.
- PM-12 Implement training for all personnel who are qualified to establish PM requirements.

Evaluate PM Program Resources

- PM-13 Perform a resource allocation study of the PM program that identifies positions needed to maintain a continuously improving (living) PM Program.
- PM-14 Address gaps in the PM program baseline staffing level based on the current levels of experience in the departments and at the site.

Preventive Maintenance Program Reconciliation

- PM-15 Review a sample of component criticality classifications to validate that risk significant equipment is classified correctly.
- PM-16 Review the last nine years of Critical PM deferrals to identify non-conservative decisions and develop any needed recovery actions to be implemented in the next system outage.
- PM-17 Re-evaluate the PM strategies for Maintenance Rule low risk significant components and components required for critical system redundancy.
- PM-18 Develop mitigation strategies to address cancelled projects in the Site Integrated Planning Database (SIPD) including embedded sub-component projects.

Reduce PM Change Request Backlogs

- PM-19 Revise the PM procedure to require that craft work order feedback is resolved prior to the next occurrence of the PM.

Strategic Review of Performance Standards and Staffing Issues

- PM-20 Improve the performance review process for leadership fundamentals supportive of long term strategic improvement.
- PM-21 Implement an APHC to place priority on staffing and retention issues that are impacting ANO employees.
- PM-22 Establish an ANO ISWP to provide a long-term perspective of future staffing needs.

Effectiveness Measures

Metrics

1. Critical Equipment Failures measures the rate of equipment failures related to Preventive Maintenance for each ANO unit.
2. Preventative Maintenance Oversight Group (PMOG) PM Scoring evaluates whether PM change requests are of high quality based on approval rates and quality scores.
3. Open PMCR [Preventive Maintenance Change Requests] measures whether PM issues and changes to work orders are addressed in a timely fashion.
4. Open Craft Feedback Requests monitors performance in meeting the expected outcome of timely incorporation of PM Work Order Feedback from Craft personnel.

Assessments

5. The effectiveness review for the PM program RCE will be documented in independent assessments of preventive maintenance strategies. The ANO PM Program will be compared to industry standards and plant specific conditions to draw a conclusion on whether adequate resources and technical rigor are being applied, and whether the program will be effective at promoting appropriate levels of reliability.
6. A focused self-assessment will evaluate effectiveness of PM improvements based on completion of specified actions and assessment against preselected objectives.
7. An independent assessment will review the effectiveness of the ISWP and the APHC.

6.6 Design and Licensing Basis Area Action Plan Summary

Vision

ANO will maintain its Safety Related and Risk Significant Systems, Structures and Components (SSCs) to support safe and reliable performance consistent with the design and licensing basis. Supporting this, important calculations, drawings, and Upper Level Documents will be maintained to high standards with low backlogs.

Problem Description

The license and design basis has not been rigorously maintained in some areas, including some Safety Related and Risk Significant SSCs important documentation. In some instances, this has resulted in degraded safety margins and plant vulnerability to significant self-revealing events.

Key Actions to Achieve Improvement

Improve Organizational Performance

- DB-1 Establish metrics to monitor performance that would indicate whether leadership focus on minimizing risk and nuclear safety is resulting in improvement to the health of Maintenance Rule systems.
- DB-2 Facilitate behavior change by rewarding performance that indicates leadership behaviors are focused on minimizing risk and nuclear safety by incorporating Maintenance Rule Monitoring goals into the Supervisor and above Incentive Plan (SMIP).
- DB-3 Provide training to Engineering, Operations, and Planners to increase the knowledge and skills of those groups regarding passive barriers and other Design Basis Features.
- DB-4 Determine the appropriate level of staffing for safe and reliable operation of ANO given experience, training needs, knowledge management needs, projected attrition, and the workload of the current level of staffing.
- DB-5 Implement a staffing plan developed in response to staffing studies. Include baseline organizational changes and staffing for Recovery efforts.
- DB-6 Implement a workforce planning process to include a long-term ANO ISWP that will provide the necessary level of detail to ensure a sustained staffing plan that accounts for talent needs, knowledge management, and training.
- DB-7 Design Engineering will perform a minimum of one Self-Assessment and one Benchmark in areas directly related to the Core Business of the Design Engineering Department, e.g. Modifications, Engineering analysis, Design and Licensing Basis knowledge.
- DB-8 System Engineering will perform a minimum of one Self-Assessment and one Benchmark in areas directly related to the Core Business of the System Engineering Department (e.g., Performance Monitoring, Aging Management, troubleshooting, Long Range Planning).

Address Engineering Programs

- DB-9 Experienced Mentors will be assigned to the Component and Programs areas from 7/1/2016 through 7/1/2017. This Mentoring effort will focus on behaviors, qualification and standards of the ANO Component and Programs areas to ensure full compliance and to build the knowledge and proficiency in these areas.
- DB-10 Resolve Standards Performance Deficiencies (SPD) from the Engineering Program assessments completed during the Preventive Maintenance Program Extent of Condition review.
- DB-11 One Benchmark or one Self-Assessment will be conducted in the following Program and Component areas:

Code Programs	Plant Programs	Component Programs	Other Programs
In-service Inspection (ISI)	Environmental Qualification (EQ)	Air Operated Valve (AOV)	Maintenance Rule
Appendix J	Probabilistic Risk Assessment (PRA)	Motor Operated Valve (MOV)	
Boric Acid Corrosion Control Program (BACCP)	Fire Protection	Motors	
In-service Testing (IST)	High Energy Line Break (HELB)	Microbial Induced Corrosion (MIC)	
Flow Accelerated Corrosion (FAC)		Generic Letter (GL) 89-13	
Repair and Replacement (R&R)		Cable Reliability	
Steam Generator		Relief Valves	
Snubbers		Check Valves	
Welding			
Buried Pipe/Tanks			

- DB-12 Training and industry exposure will also be used to build the knowledge, proficiency and standards within the Program and Component areas as the owners of each program listed in DB-11 will participate in at least one industry meeting or specialized training course focused in their Program.

Update and Maintain Design Documentation

- DB-13 Not used.
- DB-14 Not used.
- DB-15 Upper Level Documents (ULDs) and critical drawings will be revised and upgraded to incorporate Mark-ups, OE, and industry best practices to ensure that these documents are easy to use and support decision making regarding maintenance of the Design and Licensing Basis.
- DB-16 Key Calculations and Reports will be revised and upgraded to incorporate Mark-ups, OE, and industry best practices to ensure that these documents are easy to use and support decision making regarding maintenance of the Design and Licensing Basis.
- DB-17 An Engineering Standard will be produced to provide sustainable, consistent guidance to station engineers in the performance of their duties. This standard will incorporate best practices for developing Engineering products beyond simple procedural compliance and ensure that standards and expectations for performance of Engineering duties are clearly articulated to the workforce.

Improve License Submittal Quality

- DB-18 Re-baseline expectations for supporting information for NRC License Amendment Requests or Relief Requests based on past Requests for Information (RAIs).
- DB-19 Provide Regulatory Assurance departmental training on development of NRC License Amendment Requests.

Effectiveness Measures

Metrics

1. Engineering Programs Health indicates action plan effectiveness based on a composite rollup of engineering program health reports.

Assessments

2. Focused self-assessment(s) will be performed to assess overall Design and Licensing Basis Area Action Plan effectiveness based on preselected objectives.

6.7 Plant Health Area Action Plan Summary

Vision

The Plant Health Committee functions as the senior oversight authority for Equipment Reliability to ensure safety systems and equipment important to safety function properly. ANO employees are confident in the Plant Health Committee process as an effective and efficient means of strategically addressing equipment problems and vulnerabilities.

Problem Description

Some equipment issues have not been addressed in a timely manner to preserve safety and operating margins. This challenges the staff with additional burdens and compensatory actions. The long term strategies to replace some safety-related and other important equipment vulnerable to age-related failures were found to have been ineffective.

Key Actions to Achieve Improvement

- PH-1 For open SIPD items, ensure Management Sponsors and Project Managers are assigned to verify database content is updated. This action supports effective decision making by ensuring the accuracy and completeness of existing SIPD records
- PH-2 Perform a review of the SIPD database from 2007 to present to identify Preventive Maintenance or Equipment Reliability Projects related to Critical Equipment that have been cancelled without mitigation strategies.
- PH-3 Review and update the current Aging/Obsolescence list, Critical Spares list, and Equipment Reliability Issues to identify equipment items that should be addressed during the 2017 and 2018 business cycles.
- PH-4 Review and update the current site Unit Commitment List to identify Operations and Maintenance (O&M) and Capital Projects which are required to be resolved by completion of refueling outages 1R27 and 2R26.
- PH-5 Develop and Implement a Comprehensive Site Plan for Equipment Reliability that identifies the implementing resources (people, materials, funding, and time) needed to support on-line and outage Unit Commitment List items that require resolution by completion of 1R27 and 2R26.
- PH-6 Obtain an independent third party review of the selection of SIPD items that are targeted on the Comprehensive Site Plan for Equipment Reliability to ensure the decisions for inclusion and exclusion are aligned with industry standards and expectations associated with timely resolution of degraded equipment and design margins.
- PH-7 Add an APHC meeting agenda topic for quarterly review of progress in implementing the Comprehensive Site Plan for Equipment Reliability.
- PH-8 Review the current assigned Key System Health Work Orders to ensure that the Work Orders (WOs) are coded properly.

- PH-9 Conduct a benchmark of the Plant Health Committee and Plant Health Working Group (PHWG) at a recognized industry leader in identifying and addressing equipment reliability issues.
- PH-10 Develop educational materials for the Plant Health process including SIPD processing. Include a detailed flowchart, workbook, and detailed presentation materials. Deliver / present the presentation to systems, components, and program engineers and to selected supervisory personnel. Have the workbook completed by personnel following the presentation.
- PH-11 Develop a Job Familiarization Guide for PHWG and Plant Health Committee members and alternates. Have all members and alternates complete the guide.
- PH-12 The following list contains equipment reliability issues in systems or components necessary for the safe and reliable operation of the unit(s) that will be resolved over the next two unit operating cycles. The intent of this action is to demonstrate improved equipment reliability by resolving long-standing equipment issues.
- Unit 1 Reactor Building Coatings Margin improvement
 - Unit 1 NI-501 Detector Replacement
 - Unit 2 Shutdown Cooling Heat Exchanger replacement
 - Unit 2 Instrument Air Compressor replacement
 - Unit 2 Main Chillers refurbishment or replacement
 - Fire Suppression System Reliability improvement
 - K-5 Diesel Fire Pump Engine overhaul
 - Radiation Monitor reliability will be improved
 - Unit 2 Component Cooling Water (CCW) System performance Improvements
 - 2P-33C CCW pump overhaul
 - 2P-33B CCW pump overhaul
 - 2E-28B CCW Heat Exchanger replacement
 - Service Water and Circulating Water Chemical Treatment System upgrade
 - Cooling Tower Crane replacement
 - Unit 2 2P-2A Condensate Pump rebuild
 - Unit 1 Letdown Heat Exchanger replacement
 - DH-17 and DH-18, Decay Heat check valves replacement
 - Unit 1 Reactor Vessel Head O-ring leakage resolution
 - Unit 1 Polisher Flow transmitter replacement
 - Perform Startup Transformer #2 Inspections
 - Perform Startup Transformer #3 Inspections
 - Complete design of Unit 1 Integrated Control System (ICS) system reverse engineered modules
 - Implement planned single point vulnerability (SPV) mitigation and elimination efforts

PH-13 The following list contains equipment reliability issues that are being evaluated by the Plant Health Committee for resolution commensurate with their potential impact on safe and reliable operation of the unit(s) by December 20, 2018. For any items not resolved by that date, the Plant Health Committee will provide the safety basis for the extension.

- Resolution of Unit 1 Emergency Diesel Generator (EDG) Exhaust Stack Thinning
- Resolution of Unit 2 EDG Exhaust Stack Thinning
- Unit 2 Spent Fuel Pool Cooling System performance
- Continue Service Water piping replacement
- Replacement of CA-74 to correct back-leakage into the Unit 1 Boric Acid system
- Unit 1 Reactor Vessel Head Leak-off Line replacement [Davis Bessie OE]
- Unit 2 Emergency Feedwater (EFW) Terry Turbine Governor replacement
- Resolution of Unit 2 spare Service Water Motor issue
- Unit 1 High Pressure Injection (HPI) pump P-36B motor refurbishment
- Implement adequate Tornado/missile protection for EFW piping
- Unit 1 and Unit 2 Super Particulate and Noble Gas System (SPINGS) replacement

PH-14 Track and audit the completion of the following equipment reliability issues related to the White Finding and the potential for additional unplanned plant trips.

- Audit completion of repair of 161 kW Russellville East Transmission Line Lightning Protection System
- Audit completion of Entergy Transmission inspection of static line grounds on Transmission lines that end in ANO switchyard and insure the acceptance criteria per Entergy Transmission Standards. Includes 1) Pleasant Hill (500 kV), 2) Fort Smith (500 kV), 3) Mabelvale (500 kV), and 4) Pleasant Hill (161 kV).
- Replace damaged Unit 2 Unit Auxiliary Transformer 6900 V and 4160 V buses and ducting.
- Audit completion of Startup Transformer #3 non-segmented bus inspections, to include visual confirmation of filler material under taped, bolted connections.
- Verify that all medium voltage connections have adequate fill and air gap.
 1. Issue work requests to inspect all ANO-1 and ANO-2 medium voltage connections for the existence of corona effects.
 2. Issue work requests to re-tape all ANO-1 and ANO-2 medium voltage connections in accordance with OP-6030.110, and ensure adequate fill is installed.
 3. Either track completions of the resulting work orders listed above or close this corrective action to the associated work orders with concurrence by the Condition Review Group (CRG) and /or Corrective Action Review Board (CARB), as required.

Effectiveness Measures

Metrics

1. Equipment Reliability Index (ERI) for each unit indicates Plant Health process effectiveness through an index which uses a composite of 18 key inputs. This Metric 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.
2. Age of Red and Yellow Systems for each unit indicates Plant Health process effectiveness based on the age of Red and Yellow systems. Metric is reported on a per unit basis.

Assessments

3. A focused self-assessment will be performed to assess overall effectiveness of this Area Action Plan in improving plant health based upon preselected objectives.

6.8 Flood Protection Area Action Plan Summary

Vision

ANO is an industry leader in Flood Protection program design basis documentation and flood barrier documentation and control. Industry peers view the Flood Protection program as a strength at ANO.

Problem Description

Since March 31, 2013, plant personnel, NRC inspectors, and a self-revealing event have identified deficient flood protection features in the ANO-1 and ANO-2 Auxiliary and Emergency Diesel Fuel Storage Buildings contrary to the Safety Analysis Reports' (SAR) description of internal and external flood barriers. These left some safety-related equipment vulnerable to flooding thus challenging the ability to maintain reactor core cooling.

Key Actions to Achieve Improvement

- FP-1 Develop external flooding design basis documentation so configuration control is defined and maintained.
- Develop an engineering report and flood protection drawings similar to Fire Protection drawings to clearly document the flooding design basis and credited flood protection features (credited external flood protection features and credited operator actions)
 - Assign unique equipment identification to each flood protection feature and boundary.
- FP-2 Develop internal flooding design basis documentation so configuration control is defined and maintained.
- Develop an engineering report and flood protection drawings similar to the Fire Protection drawings to clearly document the flooding design basis and credited flood protection features (credited internal flood protection features and credited operator actions).
 - Update the Flooding ULD.
 - Assign unique equipment identification to each flood protection feature and boundary.
- FP-3 Label external flood barriers in the plant to provide in-field awareness of flood protection features.
- FP-4 Establish an Engineering Barrier program to include external and internal flood protection in accordance with the requirements of procedure EN-DC-329.
- Assign program owner and backup – Site Engineer.
 - Establish the preventive maintenance of external and internal flood protection features including scope, frequency, testing criteria, and acceptance criteria.

- FP-5 Complete the following procedure revisions as ANO specific or fleet procedures:
- Revise procedure EN-DC-329, "Engineering Programs Control and Oversight," to include external and internal flood protection in the Engineering Program list for ANO.
 - Revise the flooding programmatic aspects of EN-DC-150, "Condition Monitoring of Maintenance Rule Structures."
 - Revise EN-DC-136, "Temporary Modifications," to incorporate external flood considerations.
- FP-6 Validate that all external flood gaps identified from the review of documentation for credible flood paths and the follow-up walk downs have been resolved.
- FP-7 Perform walk downs of all credited internal flood protection features and document the results in an engineering report.
- FP-8 Validate that all internal flood gaps identified from the review of documentation for credible flood paths and the follow-up walk downs have been resolved.
- FP-9 Establish the Program Notebook and initial Program Health Report for flood protection in accordance with EN-DC-143 (Engineering Health Reports) to identify, communicate, prioritize and drive resolution of issues that challenge an effective flood protection strategy including performance indicators, initial color rating (Red or Yellow), and action plan.
- FP-10 Label internal flood barriers in the plant to provide in-field awareness of flood protection features.
- FP-11 Revise Engineering and Work Management procedures to ensure internal and external flooding is properly considered in the work planning process.
- FP-12 Provide site communication to reinforce the significance of passive flood barriers.
- FP-13 Develop and conduct initial and continuing training essential to understanding and maintaining the license basis for flood barrier features. Address Operations, Engineering, and Work Planning groups.

Effectiveness Measures

Metrics

None

Assessments

1. A focused self-assessment, with expertise from outside Entergy, will assess effectiveness of the actions in this plan in achieving plan goals, using preselected objectives.

6.9 Corrective Action Program Area Action Plan Summary

Vision

ANO uses the Corrective Action Program to solve problems right the first time. Issues impacting plant performance are identified at a low threshold and entered into the corrective action program. Items impacting safety are rigorously evaluated and timely, effective actions are taken to resolve identified issues commensurate with their safety significance.

Problem Description

The implementation and management oversight of the CAP at ANO has been ineffective. As a result, ANO has been challenged in operating and maintaining safe and reliable plant performance. Potential and actual adverse conditions do not always get properly identified, categorized, evaluated, and resolved.

Key Actions to Achieve Improvement

Corrective Action Program Performance

- CA-1 Establish CAP content in the ANO Employee Handbook to include behaviors for prompt identification of conditions into CAP.
- CA-2 Establish a NSC Observer function and expectations to observe and provide feedback on leader behaviors (NSC and SCWE) in key forums and provide trends for review by the NSCMP for review.
- CA-3 Conduct an organizational capacity study to determine and correct staffing and proficiency needs, including needs to support CAP implementation. Establish a People Health Committee to support ongoing monitoring and adjustments.
- CA-4 Develop and implement initial CAP training and develop continuing CAP training for station employees, ACE/RCE Evaluators, Responsible Managers (including CARB and CRG), Department Performance Improvement Coordinators, OE Specialists and Points of Contact, and Performance Improvement personnel.
- CA-5 Train investigators, managers and Performance Improvement (PI) Staff on proper causal techniques, manager oversight expectations and engagement, and conducting quality reviews of completed cause evaluations and corrective actions. Establish initial and refresher training requirements in these areas.
- CA-6 Implement training, benchmarking, process improvements, and monitoring/feedback to improve the rigor, attention to detail, and overall quality of Operability Determinations and Functionality Assessments.
- CA-7 Establish/refine key CAP station and group level performance indicators.
- CA-8 Implement CAP performance goals to be included in station leaders' performance reviews.

- CA-9 Revise the CARB process to require the Performance Improvement Manager to present the status of the condition reporting process using established metrics to the CARB.
- CA-10 Improve the periodic performance reviews and oversight of CAP and OE performance in Department Performance Review Meetings (DPRMs) and APRMs.
- CA-11 Revise EN-LI-102, "Corrective Action Program," to require a focused self-assessment every 2 years focused primarily on whether staffing levels support effective CAP implementation and oversight.

Operating Experience

- CA-12 Develop metrics to evaluate and monitor the health of the OE program.
- CA-13 Establish an OE mentor to review OE responses and provide critical feedback.
- CA-14 For a period of one year, establish CARB oversight of selected OE responses to verify program implementation meets CARB standards.
- CA-15 Revise the OE actions for selected responses to require a pre-job brief from the OE specialist. This brief should include examples of missed opportunities from past OE responses and a review of the procedure requirements for a satisfactory OE written response.
- CA-16 Train each OE Point of Contact (POC) at ANO on their responsibilities and skills needed to recognize the applicability of OE, elevate OE and use search tools to locate OE for evaluation.
- CA-17 Revise OE Program procedure to include an annual review of the list of vendors providing safety-related products/services to ensure new suppliers are added.

Effectiveness Measures

Metrics

1. Percent Externally Identified CRs measures the rate of conditions identified by external parties that should have been identified by ANO personnel.
2. Corrective Action Closure Quality indicates whether corrective actions are implemented as intended and properly documented.
3. Condition Reports Closed to Open Work Orders and Condition Report Backlog Management measure backlogs associated with the CAP.
4. Operating Experience Program Health is an index that examines performance and trends in attributes of the Operating Experience Program.

Assessments

5. Nuclear safety culture observations of CRG, CARB, and other station meetings will be reviewed on a quarterly basis relative to desired CAP behaviors.
6. Pre-Problem Identification and Resolution (PI&R) inspection focused self-assessment will evaluate interim effectiveness by examining performance based on preselected objectives.
7. Focused self-assessment(s) will evaluate overall effectiveness of this plan by verifying completion of key actions and examining performance based on preselected objectives.

6.10 Corporate and Independent Oversight Area Action Plan Summary

Vision

The Entergy nuclear fleet organization and independent oversight groups provide effective oversight to ensure safe and reliable operation of ANO.

Problem Description

Oversight of ANO performance by corporate and independent organizations did not serve as an effective barrier to prevent a significant decline in ANO safety performance over an extended period of time.

Key Actions to Achieve Improvement

- CO-1 Revise EN-FAP-OM-011, "Corporate Oversight Model," to include station Nuclear Safety Culture output from the nuclear safety culture monitoring panel as inputs to the Oversight Analysis Meeting (OAM) and Oversight Review Board (ORB).
- CO-2 Revise EN-FAP-OM-002, "Management Review Meetings," to prioritize review of Nuclear Safety Culture status and Regulatory performance on the Operational Excellence Management Review Meeting (MRM) agenda.
- CO-3 Align ANO and fleet key performance indicators with the industry and establish goals that are challenging and consistent with industry practices.
- CO-4 Revise procedures that govern Nuclear Oversight Performance Assessments to include nuclear safety culture trend codes. Apply relevant safety culture trend code(s) during the trending process. Based on report frequency, roll up codes to provide a perspective on nuclear safety culture and include in established reporting processes.
- CO-5 Develop and issue an Entergy change management procedure for planning, execution, and follow up of "high risk" changes. Procedure will include specific expectations for reviewing effectiveness of the "high risk" change. Perform snapshot benchmarking to check approach for change management against industry practices.

Effectiveness Measures

Metrics

1. NIOS Issue Resolution Time measures timely response to NIOS identified issues.
2. Corporate Functional Area Manager (CFAM) Elevations/Escalations measures timely response to CFAM identified issues.

Assessments

3. An interim assessment will be performed to determine whether the new change management procedure is understood and being applied by station and corporate personnel.
4. An assessment will be performed on application of the new change management procedure to a minimum of three (3) high risk changes.
5. An assessment will be performed to determine whether information pertaining to Nuclear Safety Culture and Regulatory performance at OAM, ORB, and ANO Operational Excellence MRM is being effectively used. Assessment will review a minimum two meetings of each type.
6. A focused self-assessment will examine whether corporate oversight and monitoring are being effectively used to strengthen safety and improve performance.

6.11 Training to Improve Organizational Performance Area Action Plan Summary

Vision

ANO uses Training to drive organizational and individual performance improvement.

Problem Description

Station leadership has not effectively used training processes to improve organizational performance. As a result, the station has experienced weaknesses in demonstrating and reinforcing some nuclear safety culture behaviors.

Key Actions to Achieve Improvement

NOTE – The actions in this Area Action Plan are designed to ensure that, going forward, ANO makes better use of training to address organizational weaknesses and ensure that personnel are well-prepared to perform their assigned functions. Areas of weakness in existing training were also identified. The specific additional training to be performed and training program improvements to address those weaknesses are listed in the Area Action Plans to which the topic of the training pertains.

- TR-1 Include content in the ANO Employee Handbook that reinforces the use of training to improve organizational performance.
- TR-2 Define and incorporate guidance in the Condition Report screening and review process to prompt discussion and/or action for conditions potentially warranting a training solution.
- TR-3 Define and incorporate practical guidance in EN-LI-121, "Trending and Performance Review," to support consideration of training as a potential solution for organizational performance issues.
- TR-4 Training Manager provides presentation(s) to Managers and Department Performance Improvement Coordinators (DPICs) on the use of training to support organizational performance improvement.
- TR-5 Factor training needs into resources for key departments, including the training department, to ensure that resources support training for organizational performance improvement (this action refers to staffing to support training beyond that necessary for accredited programs).

Effectiveness Measures

Metrics

None

Assessments

1. A Self-Assessment, using preselected objectives, will assess whether training is considered as a solution to organizational performance issues and the appropriate focus on the use of training to improve performance has been achieved.

6.12 Decision Making and Risk Management Area Action Plan Summary

Vision

ANO consistently demonstrates excellence in Decision Making and Managing Risk. Decisions are made with a long term view so that both current and long term safe operation of the facility are supported. Informed decisions are made where assumptions are validated and the right people are involved. The risk associated with decisions and work activities is thoroughly understood. If risk cannot be eliminated it is mitigated to an acceptable level.

Problem Description

Decision making at all levels in the ANO organization has at times failed to recognize, mitigate and manage risk. As a result, the station has experienced significant events and operational challenges. Additionally, execution of the Work Management process has not consistently supported predictable, well-prepared implementation of work. This has challenged the station's ability to manage risk and use resources effectively to maintain the plant.

Key Actions to Achieve Improvement

Improve Decision Making Behaviors

DM-1 Establish a decision making tool for station personnel that includes expectations for use at ANO. The intent of this action is to establish a "Minimum Risk Option" behavior that drives the decision maker to develop multiple solutions and drive the decision that has the least risk by considering the following factors:

- Nuclear Safety
- Industrial Safety
- Dose
- Plant Transients
- Equipment Reliability
- Generation Loss
- Financial

The Minimum Risk Option concept is a risk management technique designed to minimize the potential risk to as low as reasonably achievable. The concept involves identifying potential options for performing an activity, and assessing how to effectively manage and mitigate the risk for each of the potential options.

- DM-2 Establish a decision making Nuclear Safety Culture Observation form to include the top Leader Behaviors to be demonstrated and reinforced at ANO meetings. The form should include decision making practices that emphasize prudent choices over those that are simply allowable.
- DM-3 Establish Decision Making and Risk Management content in the ANO Employee Handbook to include behaviors for making effective decisions and appropriately managing risk with the expectation for both employees and leaders to use the book in communicating, demonstrating and reinforcing appropriate behaviors.
- DM-4 Revise EN-LI-121, "Trending and Performance Review Process," to include guidance for the "Leadership Fundamentals" DPRM/APRM window and the aspects of Decision-Making.

Strengthen Risk Recognition

- DM-5 Benchmark a nuclear facility outside the Entergy fleet for its ability to recognize risk. Incorporate the learnings and develop a risk recognition training plan to be delivered at ANO.
- DM-6 Deliver Risk Recognition training and develop an ANO curriculum for all site personnel with unescorted access.
- DM-7 Develop and implement training on procedures governing risk assessments. The training is for Work Management Senior Reactor Operators (SROs), Work Week Managers, Shift Managers, and Unit Coordinators.
- DM-8 Develop and implement a Familiarization Guide for the function of Work Management SRO which will ensure clear understanding of job function.
- DM-9 Establish recurring training for Project Management personnel on risk recognition and conservative decision making.
- DM-10 Revise On Line Risk Assessment Procedure EN-WM-104 to include guidance for classifying as high risk those work activities involving a credible risk concern with unacceptable consequences and first-of-a-kind or first-in-a-while activities.
- DM-11 Revise Project Management Procedures to ensure high consequence risks are properly identified and eliminated/mitigated through a structured risk management process.

Improve Operational Focus

- DM-12 Conduct benchmarking of a high performing station in the area of Operations Focus with a plan based on INPO's Principles for Effective Operational Decision-Making, and develop improvement actions based upon the results.
- DM-13 Assign a mentor (outside of the Entergy Fleet) to coach and mentor each Shift Manager, emphasizing the aspect of leadership in Operational Focus.
- DM-14 Assign a mentor to review and improve Operations Decision Making Instructions (ODMI) until such time as proficiency is demonstrated.

- DM-15 Perform a benchmark on a high performing station outside the Entergy Fleet on ODML development, implementation, and effectiveness reviews.
- DM-16 Develop and Implement training for key personnel on ODML development, implementation, and effectiveness reviews.

Improve Work Management

- DM-17 Develop Roles & Responsibilities for the quorum line participants in the work management process.
- DM-18 Develop and Implement Work Management Training for Senior Management, Managers, and each of identified Work Management positions with respect to roles and responsibilities.
- DM-19 Select Manager level mentors/owners for T-week meetings to observe and coach T-weeks for behavior modifications.
- DM-20 Develop and Implement Supply vs Demand model and metrics to determine and monitor resource needs to meet work load demand. The metrics will be used to measure resource demand and supply so that scheduled work has the correct resources assigned to complete the work scope.
- DM-21 Develop a quarterly roll-up process for work week critiques.
- DM-22 Benchmark outside the Entergy fleet to capture best practices in the Work Management process and develop improvement actions based upon the results.
- DM-23 Have a peer group from another plant perform a peer assist visit in Work Management.

Effectiveness Measures

Metrics

1. On-Line Risk ANO1 and ANO2 compares planned risk profiles to actual risk profiles as an indicator of risk management and decision making effectiveness.
2. Unplanned Limiting Condition for Operation (LCO) Entry ANO1 and ANO2 reflects decision making and risk management performance based on Unplanned LCO / Allowable Outage Time (AOT) events.
3. Fire Impairments measure the backlog of issues affecting fire detection and suppression systems as an indicator of decision making and risk management performance for each ANO unit.

Assessments

4. Focused self-assessment(s) will examine the overall effectiveness of this action plan in improving decision making and risk management against preselected objectives.

6.13 Lift Rig Failure and Vendor Oversight Area Action Plan Summary

Vision

ANO is an industry leader in Vendor Oversight with teamwork between supplemental and station personnel that drives a spirit of cooperation and high performance. The weaknesses associated with the 2013 lift rig failure have been fully addressed to correct underlying causes and prevent recurrence.

Problem Description

Oversight and review of vendor products and services have in some cases failed to detect consequential, safety-significant deficiencies. This resulted in failure to detect deficiencies in the design and testing of the stator lift rig assembly and failure to initially detect inferior flood barriers during walk downs following the Fukushima flooding event.

Key Actions to Achieve Improvement

Vendor Oversight

- VO-1 Designate a Subject Matter Expert (SME) to oversee implementation of the procedure for Management and Oversight of Supplemental Personnel and contractor oversight for ANO.
- VO-2 Perform a review/audit of a sampling of recent Supplemental Oversight Plans for quality and implementation.
- VO-3 Staff a temporary mentor position with responsibility to review contracts and coach staff in contract/task development.
- VO-4 Establish a Vendor Oversight Team to drive continuous improvement in Vendor Oversight.
- VO-5 Develop and implement a process for monitoring of Supplemental Oversight Plan compliance.
- VO-6 Establish specific template guidance to support consistent development of Supplemental Oversight Plans.
- VO-7 Develop and implement initial and continuing training on the procedure for "Management and Oversight of Supplemental Personnel." Training is for site contract managers and project managers.
- VO-8 Develop and implement a contract management "Familiarization Guide" to include determination and documentation of work scope, risk assessment, incentives and penalties, and performance monitoring. Include review of OE, such as the contractual aspects of the stator lift rig failure and other related industry events in the Familiarization Guide.
- VO-9 Perform an organizational capacity assessment for Vendor Oversight, including Contract Management and Administration, Critical Procurements, and department-specific resource impacts.
- VO-10 Evaluate span of control with regard to Responsible Oversight of Vendors and place actions to address identified weaknesses in the CAP.

- VO-11 Revise the "Supplemental Personnel Expectations Brief Checklist" to include supplemental personnel receiving a Site employee handbook and a discussion by responsible management on the Site employee handbook and expectations for use.
- VO-12 Develop a survey strategy to measure/trend knowledge and perceptions of supplemental personnel.
- VO-13 Perform an ANO specific Snapshot Assessment of critical procurements (purchases and repairs of components).
- VO-14 Establish a Fleet Charter Team or ANO Team to address weaknesses in the procedures for contractor oversight. Specifically, identify gaps in the procedures to align with Industry Guide AP-930 (Supplemental Personnel Process Description). Assign additional actions as warranted to address any gaps identified.
- VO-15 Review current processes in Engineering related to Vendor Oversight Fundamental Problem. Determine if additional actions are required to address less formal interfaces with suppliers of contract services. Assign additional actions as warranted to address any gaps identified.
- VO-16 Benchmark an industry leader outside the Entergy Fleet to capture best practices in vendor oversight.
- VO-17 Revise procedure for Trending and Performance Review Process (DPRM/APRM) to include vendor oversight.

Lift Rig Failure

- VO-18 Revise Project Management procedures to ensure projects are organized and managed with 1) effective support by subject matter experts and 2) effective vendor and technical oversight.
- VO-19 Revise Project Management Procedures to ensure high consequence risks are properly identified and eliminated/mitigated through a structured risk management process.
- VO-20 Issue procedure for Management and Oversight of Supplemental Personnel including improvements to 1) defined responsibilities, 2) assessment of risk, and 3) vendor oversight plans.
- VO-21 Develop and implement recurring training for Project Management personnel on risk recognition and conservative decision making.
- VO-22 Conduct lessons learned sessions, reinforcements of expectations, communications, and a case study on the stator drop event.
- VO-23 Revise EN-DC-114, "Project Management," to provide guidance in specifying language which will ensure detailed engineering calculations, quality requirements and standards are provided for internal and third party review, in accordance with revised EN-MA-119, "Material Handling Program," when specially designed temporary lift assemblies are to be used.
- VO-24 Revise EN-MA-119 to require a documented engineering response to evaluation critical lifts if using any specially designed temporary lifting device, any lifting device that cannot be load tested per EN-MA-119 criteria, or any lifting device without a certified load rating name plate rating affixed to it.

Effectiveness Measures

Metrics

1. Field Presence measures field interactions between management and workers.
2. Vendor Errors measures vendor oversight effectiveness based on human performance error rates among contractor personnel.

Assessments

3. An interim effectiveness review will assess effectiveness of the revision to Project Management Procedures for Project Organization.
4. An interim effectiveness review will assess effectiveness of procedure revisions for Risk/Consequences in Project Management.
5. A focused self-assessment will assess overall effectiveness by verifying completion of key actions and examining performance in the area of vendor oversight using preselected objectives.

6.14 Nuclear Fundamentals Area Action Plan Summary

Vision

ANO and supplemental employees take personal responsibility for safety and act as Nuclear Professionals in daily activities. Team members are focused on nuclear safety as the top priority and are engaged and work together to ensure high standards are maintained.

Problem Description

Worker performance has been inconsistent in fundamental behaviors including procedure adherence, risk awareness, decision making, and questioning attitude.

Key Actions to Achieve Improvement

Resetting Nuclear Professional Standards

- NF-1 Implement a What It Looks Like (WILL) sheet for Nuclear Professional behaviors based on objectives in INPO 12-013, "Performance Objectives and Criteria." Include a continued focus on the four Primary Performance Issues identified in the Nuclear Fundamentals Area Action Plan.
- Procedure Use and Adherence
 - Challenging Assumptions and Decision Making
 - Conservative Bias and Risk Recognition
 - Low Threshold for Reporting Issues
- WILL sheets provide listings of the characteristics expected to be found during observation of plant activities.
- NF-2 Include INPO 12-013 (NP.1) Nuclear Professionals Performance Criteria in the ANO Employee Handbook.
- NF-3 Develop content for the ANO Employee Handbook that addresses Procedure Use and Adherence.
- NF-4 Develop content for the NSC observation process that addresses Procedure Use and Adherence.
- NF-5 Develop content for the ANO supervisor training that addresses Procedure Use and Adherence.
- NF-6 Revise EN-OM-126, "Management and Oversight of Supplemental Personnel," to ensure that supplemental employees receive the ANO Employee Handbook and are provided a expectations for its use in a discussion by their manager.
- NF-7 Develop and provide training to ANO leaders, including supervisory training on NSC and SCWE, constructive conversation skills, and how to foster a strong nuclear safety culture within their organizations.
- NF-8 Develop and present training to ANO workforce to include case studies that illustrate the "right picture" of NSC Include what it means to be an engaged and thinking individual nuclear worker as per recommendation 3.a. of SOER 10-2, "Engaged, Thinking Organizations."

Reinforce Nuclear Professional Standards through Improved Field Presence and Coaching Quality

- NF-9 Develop and implement a “field presence” initiative that promotes and measures leader field presence. Objective is to drive and verify field presence by leaders to engage with employees and reinforce high standards.
- NF-10 Establish and implement a paired observation program. This is a “coach the coach” program to improve the quality of interactions between supervisors and those they supervise.
- NF-11 Develop and implement a Behavior Based Safety (BBS) program that includes Nuclear Professional attributes. Establish guidance in a site level procedure for Nuclear Professional attributes contained in INPO 12-013, “Performance Objectives and Criteria.” BBS is based on the science of behavior, which teaches that the most effective way to help people develop safe habits is through a system of measurement, feedback and positive re-enforcement.

Effectiveness Measures

Metrics

- 1. Errors metric indicates plan effectiveness based on rate of errors overall identified within the CAP and those specifically related to Procedure Adherence.
- 2. Rework Occurrences indicates application of fundamental behaviors to prevent the unexpected and unplanned re-performance of work to repair or maintain a component or system.
- 3. Recordable Injury Rate reflects fundamental worker behaviors based on the number of recordable injuries (employees and supplemental personnel) per 200,000 person-hours worked.

Assessments

- 4. A focused self-assessment will assess overall effectiveness of this area action plan in improving nuclear fundamentals based on preselected objectives.