



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

March 29, 2018

EA-14-008
EA-14-088
EA-16-124

Mr. Richard L. Anderson, Site Vice President
Entergy Operations, Inc.
Arkansas Nuclear One
1448 SR 333
Russellville, AR 72802-0967

SUBJECT: ARKANSAS NUCLEAR ONE – NRC CONFIRMATORY ACTION LETTER
(EA-16-124) FOLLOW-UP INSPECTION REPORT 05000313/2018012 AND
05000368/2018012

Dear Mr. Anderson:

From February 12, 2018, to March 8, 2018, the U.S. Nuclear Regulatory Commission (NRC) reviewed your progress in implementing the specific actions from the Arkansas Nuclear One (ANO) Comprehensive Recovery Plan that were committed to in a Confirmatory Action Letter (CAL) dated June 17, 2016, (NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML16169A193) (EA-16-124). On February 15, 2018, the NRC inspection team discussed the initial results of this inspection with you and other members of your staff. On March 8, 2018, the team discussed the final results of this inspection with Mr. J. Kirkpatrick, General Manager-Plant Operations, and other members of your staff. The team documented the results of this inspection in the enclosed inspection report.

The team reviewed ANO's progress in implementing the ANO Comprehensive Recovery Plan, focusing on 19 actions that ANO management had concluded were complete and effective. The team also reviewed progress made toward closing one action, and will continue to inspect this action during a future inspection. The attached report documents the basis for closing 18 CAL actions, as well as observations related to the station's progress in addressing the action that was not sufficiently complete and effective to close at this time.

On February 2, 2018, you notified the NRC by letter that the actions taken to address two inspection focus areas identified in the CAL were completed and effective, and requested the NRC to inspect these areas for possible closure (ML18040A918). Therefore, the team reviewed the Significant Performance Deficiencies (SPD) and the Identification, Assessment, and Correction of Performance Deficiencies (IACPD) inspection focus areas to determine whether the actions taken, in aggregate, achieved the safety performance improvement objectives stated in the ANO Comprehensive Recovery Plan. Based on this inspection, the NRC concluded that your actions were effective in achieving the stated objectives. Therefore, the SPD and IACPD inspection focus areas are closed. The remaining four areas will be inspected during a future inspection.

Your February 2, 2018, letter also notified the NRC of ANO's readiness for a final inspection of the actions taken to address the two findings of substantial safety significance (Yellow) for each unit. Therefore, this inspection included a review of the corrective actions to address the Yellow findings in each unit involving the failure to adequately approve the design and to load test a temporary lift assembly (EA-14-008) and the failure to maintain required flood mitigation design features (EA-14-088). The final significance determinations and Notices of Violation (NOVs) associated with these findings were documented in NRC Inspection Reports 05000313/2014008 and 05000368/2014008 (ML14174A832), and 05000313/2014010 and 05000368/2014010 (ML15023A076), respectively. These findings resulted in the station being placed into Column 4, the Multiple/Repetitive Degraded Cornerstone column, of the NRC's Reactor Oversight Process Action Matrix in the first quarter of 2015.

Starting in January 2016, the NRC used a phased approach to review your actions using Inspection Procedure 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area." Your identification of the problems, evaluations of causes, extent of condition and extent of causes, safety culture impacts, and corrective actions plans were documented in NRC Inspection Report 05000313/2016007 and 05000368/2016007 (ML16161B279). The corrective actions that were not yet complete were included in the SPD inspection focus area of the CAL, and have been inspected as they were completed during quarterly CAL follow-up inspections. In the current inspection, the team closed the remaining SPD actions, verified that all SPD actions were complete and effective, and concluded that your actions met the objectives of Inspection Procedure 95002. Therefore, the Yellow findings involving the failure to approve the design and to load test a temporary lift assembly (EA-14-008) and failure to maintain required flood mitigation design features (EA-14-088) are closed.

In accordance with the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," these Yellow findings will no longer be considered in assessing plant performance. However, ANO Units 1 and 2 will remain within the Multiple/Repetitive Degraded Cornerstone column of the NRC's Reactor Oversight Process Action Matrix pending completion of the actions needed to close the CAL. On March 19, 2018, you notified the NRC that ANO is ready for the NRC to inspect the final CAL actions and the remaining inspection focus areas (ML18078B153). Therefore, the NRC plans to inspect all remaining CAL actions and inspection focus areas beginning on April 2, 2018. The NRC will use the results of that inspection and the previous CAL follow-up inspections, and the NRC's Reactor Oversight Process Action Matrix to determine the appropriate changes to oversight of ANO. The NRC plans to communicate the results of this determination at a public meeting following the successful completion of these CAL closure activities.

The NRC team did not identify any findings or violations of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Neil F. O'Keefe, Branch Chief
Project Branch E
Division of Reactor Projects

Docket Nos. 50-313; 50-368
License Nos. DPR-51; NPF-6

Enclosure:
Inspection Report 05000313/2018012 and
05000368/2018012
w/ Attachments:
1. Supplemental Information
2. Confirmatory Action Letter Item Status

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Dockets: 05000313; 05000368

Licenses: DPR-51; NPF-6

Report: 05000313/2018012; 05000368/2018012

EPID: I-2018-012-0005

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Units 1 and 2

Location: Junction of Highway 64 West and Highway 333 South
Russellville, Arkansas

Dates: February 12 through March 8, 2018

Team Lead: G. George, Senior Reactor Inspector, Engineering Branch 1

Inspectors: W. Cullum, Reactor Inspector, Engineering Branch 1
J. Dixon, Senior Project Engineer, Project Branch D
C. Henderson, Senior Resident Inspector, Project Branch E
C. Smith, Reactor Inspector, Engineering Branch 1
C. Stott, Reactor Inspector, Engineering Branch 1

Approved By: N. O'Keefe
Chief, Project Branch E
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000313/2018012; 05000368/2018012; 2/12/2018 – 3/8/2018; Arkansas Nuclear One, Units 1 and 2; Confirmatory Action Letter (CAL) Follow-up Inspection (Inspection Procedure 92702), Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area (Inspection Procedure 95002).

The inspection activities described in this report were performed by a team of regional inspectors and the Senior Resident Inspector at Arkansas Nuclear One. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

On June 17, 2016, the NRC issued a Confirmatory Action Letter (CAL) (ML16169A193) (EA-16-124) confirming actions that Entergy committed to take in Arkansas Nuclear One (ANO) Comprehensive Recovery Plan (CRP). The team reviewed 19 actions from the CAL. The team concluded that 18 of the actions reviewed were complete and were effective in achieving the associated performance improvement objectives, so these actions are closed. The team reviewed six completed sub-actions for one action (PH-13), but will continue to review sub-actions as they are completed. The team also concluded that one action (DB-11) was not sufficiently complete to close during this inspection.

On February 2, 2018, the licensee notified the NRC by letter that the actions taken to address two inspection focus areas identified in the CAL were completed and effective, and requested the NRC to inspect these areas for possible closure (ML18040A918). The team reviewed the Significant Performance Deficiencies (SPD) and the Identification, Assessment, and Correction of Performance Deficiencies (IACPD) inspection focus areas concluded that the actions were effective in achieving the CRP objectives. Therefore, the SPD and IACPD inspection focus areas are closed.

The team used Inspection Procedure (IP) 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," to review the licensee's response to each of the two Yellow findings pertaining to each unit. The team reviewed the completed actions and determined that the inspection objectives of IP 95002 have been satisfied. Therefore, the Yellow findings are closed.

No findings were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Other Activities

.1 Review of Yellow Findings

Scope of Review

On February 26, 2016, the NRC completed the onsite portion of IP 95003, “Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input,” dated December 18, 2015. As part of the 95003 Inspection, the NRC team included an assessment of completed and planned actions for the two Yellow findings relating to each unit using IP 95002, “Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area,” dated February 9, 2011. IP 95002 has four objectives:

- Objective 1 – To provide assurance that the root and contributing causes of individual and collective risk-significant performance issues are understood.
- Objective 2 – To independently assess and provide assurance that the extent of condition and the extent of cause of individual and collective risk-significant performance issues are identified.
- Objective 3 – To independently determine if safety culture components caused or significantly contributed to the individual and collective risk-significant performance issues.
- Objective 4 – To provide assurance that a licensee’s corrective actions for risk-significant performance issues are sufficient to address the root and contributing causes and prevent recurrence.

a. Yellow Stator Drop Finding

Background

On March 31, 2013, a temporary lifting rig failed and caused the drop of the 525-ton Unit 1 main generator stator. The stator drop resulted in a loss of offsite power (LOOP) for Unit 1, which was in a refueling outage, and a reactor trip and partial LOOP for Unit 2, which had been operating at full power. There was structural damage to the turbine building and the fire protection system. The NRC performed inspections on both the stator drop event and the subsequent flooding event that followed. On August 1, 2014, the NRC documented preliminary Yellow findings in NRC Inspection Report 05000313/2014009 and 05000368/2014009 (ADAMS Accession No. ML14253A122). On June 23, 2014, the NRC issued the final Yellow safety significance determination and Notice of Violation (EA-14-008) in NRC Inspection Report 05000313/2014008 and 05000368/2014008 (ADAMS Accession No. ML14174A832). During the IP 95003 Inspection, the NRC team confirmed that ANO’s root cause evaluation (RCE) and planned and implemented corrective actions adequately addressed the stated violations. Subsequent CAL follow-up inspections reviewed all of the corrective actions following successful completion.

Objective 1 – To provide assurance that the root and contributing causes of individual and collective risk-significant performance issues are understood.

ANO initiated the first RCE, CR-ANO-C-2013-0888, in March 2013, to evaluate the collapse of the stator lifting rig. As discussed in NRC Inspection Report 05000313/2015008 and 05000368/2015008 (ADAMS Accession No. ML15180A399), ANO did not document the apparent violation and the subsequent Notice of Violation (NOV) in the corrective action program until September 2014. The NRC noted in NRC Inspection Report 05000313/2013012 and 05000368/2013012 (ADAMS Accession No. ML14083A409) that the first RCE did not evaluate ANO's failure to adequately review and approve work performed by a contractor. The 95003 inspection team determined that the second RCE, CR-ANO-C-2014-2318, adequately addressed the identification problems, risk consequences, and compliance concerns associated with the stator drop event.

The current team confirmed that the 95003 NRC team concluded that the licensee understood the root and contributing causes of individual and collective risk-significant performance issues associated with the Yellow stator drop finding for both units. Therefore, the team concluded that Objective 1 was satisfied.

Objective 2 – To independently assess and provide assurance that the extent of condition and the extent of cause of individual and collective risk-significant performance issues are identified.

The 95003 inspection team conducted an independent extent of condition and extent of cause review for the issues associated with the stator drop Yellow findings. The NRC team concluded that, at the time of that inspection, ANO's extent of condition review had not reviewed closed contracts and contracts involving nonsafety work or equipment. As a result, the NRC issued a non-cited violation for failure to complete two of the extent of condition reviews associated with the stator drop event specified in the licensee's corrective action plan.

The 95003 inspection team also found that the extent of cause review performed for RCE CR-ANO-C-2014-02318, Root Cause 2, which reviewed technical/administrative procedures to determine whether they provided sufficient guidance for the activity performed, did not provide objective evidence as to why additional corrective actions were not needed to address the area. However, the NRC team determined this issue was of minor safety significance since ANO was able to demonstrate that the problems identified were addressed by corrective actions in the Comprehensive Recovery Plan.

Based on the licensee's evaluations, corrective actions taken, and the results of the previous 95003 inspection, the inspection team concluded that the licensee identified the extent of condition and extent of cause of individual and collective risk-significant performance issues associated with the Yellow stator drop finding for both units. The team confirmed that Objective 2 was satisfied.

Objective 3 – To independently determine if safety culture components caused or significantly contributed to the individual and collective risk-significant performance issues.

During the NRC’s independent safety culture review during the 95003 inspection, the NRC team concluded that ANO addressed the safety culture components identified in their RCEs that either caused or significantly contributed to the associated performance deficiencies. However, the NRC team determined that ANO did not adequately evaluate or develop corrective actions to address the collective impact of the remaining safety culture components that, while not relating specifically to a root or contributing cause, nonetheless contributed to the problems described in each of the RCE problem statements.

In response to the 95003 inspection team’s concerns, ANO performed a common cause analysis of all of the safety culture attributes identified in the recovery RCEs in order to assess the collective significance and causes. The 95003 inspection team reviewed the safety culture common cause assessment and nuclear safety culture area action plan and concluded that ANO’s evaluations adequately considered the full set of available safety culture data and identified the common causes associated with safety culture at ANO that had contributed to the problems identified.

The current team concluded that the licensee identified the safety culture components which caused or significantly contributed to the individual and collective risk-significant performance issues associated with the Yellow stator drop finding for both units, and that the licensee developed adequate corrective actions to address these safety culture components. The team concluded that Objective 3 was satisfied.

Objective 4 – To provide assurance that a licensee’s corrective actions for risk-significant performance issues are sufficient to address the root and contributing causes and prevent recurrence.

As part of their response to the stator drop event review, the licensee initiated 195 corrective actions. During the 95003 inspection, the NRC team reviewed a significant portion of these actions. However, there were multiple planned actions remaining open at the conclusion of the inspection. The licensee consolidated these actions into CAL actions for the NRC to review upon completion. The CAL actions are shown in the table below along with the respective NRC inspection report discussing or closing the item. For a description of each item, see Attachment 2.

CAL Action Items associated with the Yellow Stator Drop Finding		
Inspection Report	CAL Action Item	Status in Report
2016008	FP-13	Closed
	VO-15	Closed
	VO-23	Closed
	VO-24	Closed
2016010	VO-1	Closed
	VO-4	Closed

CAL Action Items associated with the Yellow Stator Drop Finding		
Inspection Report	CAL Action Item	Status in Report
2017010	VO-10 VO-14 VO-18 VO-20 VO-24	Closed Closed Discussed (Closed in 2017013) Discussed (Closed in 2017012) Additional information added after closure
2017011	DM-9 DM-10 VO-5 VO-6 VO-11 VO-21	Closed Closed Closed Closed Closed Closed
2017012	CO-5 DB-1 DB-2 DM-7 DM-8 OC-5 VO-7 VO-9 VO-20	Closed Closed Closed Closed Closed Closed Discussed (Closed in 2018012) Closed Closed
2017013	DM-1 DM-6 DM-11 VO-8 VO-18 VO-19	Closed Closed Closed Closed Closed Closed
2018012	VO-7	Closed (see below)

During the 95003 inspection, the NRC team concluded that corrective actions for lifting and rigging appeared appropriate and were being tracked in CR-ANO-C-2015-03996. In addition, the NRC team concluded that actions to improve contractor oversight had not yet been fully effective; further action was necessary because oversight plans for contract outage workers were inadequate, qualification requirements for contractors to act as supervisors did not have a consistent standard, and designated ANO oversight personnel lacked adequate guidance and training to perform their oversight role. ANO wrote CR-ANO-C-2015-03788 to enter all of these issues into the corrective action program.

ANO addressed these gaps on vendor oversight in the Vendor Oversight Area Action Plan. The NRC identified in the CAL which vendor oversight actions were considered the most significant contributors. As shown in the table above, the team confirmed that the NRC has reviewed and closed all of the vendor oversight actions in the CAL after determining that these actions were effective.

The NRC team concluded that the licensee's corrective actions for risk-significant performance issues were sufficient to address the root and contributing causes associated with the Yellow stator drop finding for both units and prevent recurrence. The team concluded that Objective 4 was satisfied.

Conclusion

The NRC has determined that all four inspection objectives stated above have been satisfied. Based on the results of this inspection, the two Yellow stator drop findings (EA-14-008) are closed for both units (NOV 05000313/2013012-04, NOV 05000368/2013012-05).

b. Yellow Flood Protection Finding

Background

On March 31, 2013, the failure of a temporary lifting rig caused the drop of the Unit 1 main generator stator. The dropped stator damaged fire protection system piping located in the turbine building train bay. Water from the fire protection system migrated to the Unit 1 auxiliary building, filling the auxiliary building sump. Water then leaked into the B decay heat vault, as documented in CR-ANO-1-2013-01286. The NRC performed inspections on both the stator drop event and the subsequent flooding event that followed. On August 1, 2014, the NRC documented preliminary Yellow findings in NRC Inspection Report 05000313/2014009 and 05000368/2014009. On January 22, 2015, the NRC issued the final significance determination and NOV (EA-14-088) in NRC Inspection Report 05000313/2014010 and 05000368/2014010 (ADAMS Accession No. ML15023A076).

Through their review, the 95003 team concluded that information regarding the reasons for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance was achieved, was addressed in Entergy's letter dated February 23, 2015, (ADAMS Accession No. ML15054A607). During the 95003 inspection, the NRC team confirmed that ANO's RCE and planned corrective actions adequately addressed the stated violations.

ANO documented their investigation into the causes in two RCEs:

Root Cause Evaluation CR-ANO-C-2013-1304

Root Cause: Inadequate PM strategy to maintain flood hatches and doors in accordance with plant design basis.

Contributing Cause 1: Failure to recognize the significance of passive flood hatches as credited flood barriers for a design basis flooding event.

Contributing Cause 2: Post maintenance testing of flood hatches is not required if the hatch is removed for scheduled or emergent maintenance other than the hatch PM.

Root Cause Evaluation CR-ANO-C-2014-0259

Root Cause 1: When previous opportunities for identification [of degraded flood protection features] occurred, ANO personnel did not sufficiently challenge and verify whether existing plant configuration met licensing basis requirements for mitigation of flooding events.

Root Cause 2: The detailed design requirements of flooding features were not documented.

Contributing Cause 1: Because reviews and responses were narrowly focused, the organization did not identify deficiencies after receiving previous internal and external OE related to flooding.

Contributing Cause 2: The PM strategy in place to maintain flood protection features was inadequate both in frequency and content.

Contributing Cause 3: Entergy personnel provided minimal oversight of ODA activities related to Fukushima walkdowns.

Objective 1 – To provide assurance that the root and contributing causes of individual and collective risk-significant performance issues are understood.

The 95003 inspection team concluded that ANO used appropriate processes in the development of their RCEs, and that ANO's evaluation team and analysis techniques were sufficient to identify the root and contributing causes of degraded flood protection barriers. The 95003 team determined that ANO had performed a comprehensive review and inspection of both units' flood protection program, including extensive walkdowns and assessments of the flood protection barriers, and identified multiple degraded flood barriers and flood protection program deficiencies. The 95003 team also concluded that the licensee understood the root and contributing causes of individual and collective risk-significant performance issues associated with the Yellow flood protection finding for both units. During this inspection, the team confirmed that Objective 1 was satisfied.

Objective 2 – To independently assess and provide assurance that the extent of condition and the extent of cause of individual and collective risk-significant performance issues are identified.

The 95003 inspection team conducted an independent extent of condition and extent of cause review of the issues associated with the degraded flood barriers Yellow findings. The NRC team's independent review focused on the root and contributing causes, and whether ANO's evaluations identified and bounded organizational issues.

Extent of Condition

The initial condition evaluated by ANO was external and internal flood protection deficiencies related to Updated Final Safety Analysis Report (UFSAR) requirements for Unit 1 and Unit 2 auxiliary and emergency diesel fuel storage buildings. This was later expanded to include the following passive structures and systems and other acts of nature:

- Reactor building, intake structure, emergency cooling pond, and post-accident sample building.
- Barriers used to protect against external and internal floods, high energy line breaks, fire, external events (tornado, icing, seismic, etc.), and radiation.
- Barriers required to support emergency operating procedure (EOP) actions.
- Drains, abandoned equipment, and openings that may pose a threat to flood protections.

The extent of condition evaluation included a review of the Security Plan, Technical Specifications, Quality Assurance Manual, Emergency Plan, Offsite Dose Calculation Manual, Core Operating Limits Report, National Pollution Discharge Elimination System Permit, Independent Spent Fuel Storage Installation Certificate of Conformance, and Fire Protection Program.

Extent of Cause

ANO's extent of cause review looked for potential deficiencies that went undetected by station personnel. The extent of cause review was subsequently expanded to look for other engineering activities that might be susceptible to causes identified by ANO during the review. This review included:

- Flood barriers in other Seismic Class 1 structures that could challenge the ability to maintain reactor core cooling.
- Deficiencies in SSCs that could result in an initiating event.
- Flood barriers in any structure that could result in an initiating event.
- Equipment/floor drains or roof drains that could result in challenging the ability to maintain reactor core cooling or result in an initiating event.
- Passive protection against other external events such as tornado, icing, seismic events, fire, security, etc. that could result in challenging the ability to maintain reactor core cooling or result in an initiating event.
- Passive barriers that offer radiation protection or air tightness.
- Equipment required to mitigate beyond design basis accidents or events.
- Barriers/drains that must function in order to be able to perform EOPs.
- The scope and content of procedure EN-LI-100, "Process Applicability Determination," Revision 16.

The 95003 team identified that ANO did not examine fire protection barriers during the extent of condition reviews, so the NRC team performed visual inspections of over 100 fire seals in safety-related areas and did not identify any discrepancies. The 95003 team also identified that ANO had modified numerous fire seals to perform the dual function of also being a flood seal; however, the modified seals had not been subjected

to required testing to demonstrate that the fire resistance was not negatively impacted. ANO documented this concern in CR-ANO-C-2016-0490 and initiated actions to conduct fire resistance testing. The NRC team identified an unresolved item because some of the actions to correct the degraded flood protection finding resulted in modifying existing fire seals in a way that created an untested configuration. ANO has scheduled fire resistance testing to determine whether there is an actual degraded condition. The NRC subsequently closed this URI because the fire testing demonstrated that fire resistance was not degraded.

The team reviewed the licensee's root cause reports, corrective actions, and self-assessments. Overall, the team found that the licensee's actions for extent of cause and extent of condition were broad and comprehensive. In particular, the team found that the flooding protection extent of condition was thorough and did not identify any problems.

Based on a review of the licensee's evaluations and actions taken, the team concluded that the licensee identified the extent of condition and extent of cause of individual and collective risk-significant performance issues associated with the Yellow flood protection finding for both units. The team concluded that Objective 2 was satisfied.

Objective 3 – To independently determine if safety culture components caused or significantly contributed to the individual and collective risk-significant performance issues.

During the NRC's independent safety culture review during the 95003 inspection, the team concluded that ANO conducted a comprehensive safety culture assessment that properly identified the safety culture components related to the problem and causes. However, the 95003 team determined that ANO did not adequately evaluate or develop corrective actions to address the collective impact of the remaining safety culture components that, while not relating specifically to a root or contributing cause, nonetheless contributed to the problems described in each of the RCE problem statements.

In response to the 95003 inspection team's concerns, ANO performed a common cause analysis of all of the safety culture attributes identified in the recovery RCEs in order to assess the collective significance and causes. The NRC team reviewed the safety culture common cause assessment and nuclear safety culture area action plan and concluded that ANO's evaluations considered the full set of available safety culture data and identified the common causes associated with safety culture at ANO that had contributed to the problems identified.

The NRC team concluded that safety culture components did cause or significantly contribute to the individual and collective risk-significant performance issues associated with the Yellow flood protection finding for both units, and that the licensee developed adequate corrective actions to address these safety culture components. Therefore, the team concluded that Objective 3 was satisfied.

Objective 4 – To provide assurance that a licensee’s corrective actions for risk-significant performance issues are sufficient to address the root and contributing causes and prevent recurrence.

As part of their flood protection recovery efforts, the licensee initiated 388 corrective actions. During the 95003 inspection, the NRC team reviewed a significant portion of these actions. However, there were 52 actions remaining open at the conclusion of the inspection. The licensee consolidated these actions into Confirmatory Action Letter (CAL) actions for the NRC to review upon completion. The CAL Action Items are shown in the table below along with the respective NRC inspection report discussing or closing the item. For complete descriptions of each item, see Attachment 2.

CAL Action Items associated with the Yellow Flood Protection Finding		
Inspection Report	CAL Action Item	Status in Report
2016008	DB-3 FP-1 FP-2 FP-3 FP-6 FP-7 FP-13	Closed Closed Discussed (Closed in 2017011) Closed Closed Discussed (Closed in 2017011) Closed
2017010	FP-5 LF-1 LF-4 LF-8	Closed Closed Closed Closed
2017011	FP-2 FP-7 FP-9	Closed Closed Closed
2017012	DB-1 DB-2 DM-17 FP-4 NF-8 OC-3 PH-12 PM-18 SC-10	Closed Closed Closed Closed Closed Closed Information Added Closed Closed
2017013	FP-8 LF-11 PH-3 PH-4 PH-5 PH-6 PH-12	Discussed (Closed in 2018012) Closed Closed Closed Closed Closed Information Added
2018012	FP-8	Closed

The 95003 inspection team identified that ANO implemented corrective actions associated with flood protection barriers that may have reduced the resistance of fire seals by replacing existing seals with new, dual function fire/flood seals. The resident inspectors later inspected and closed this unresolved item in Inspection Report 05000313/2016004 and 05000368/2016004 (ADAMS Accession No. ML17041A376).

The NRC team concludes that the licensee's corrective actions for risk-significant performance issues were sufficient to address the root and contributing causes associated with the Yellow flood protection finding for both units and prevent recurrence. The team concluded that Objective 4 was satisfied.

Conclusion

The NRC has determined that the inspection objectives stated above have been met. Based on the results of this inspection, the two Yellow flood protection findings (EA-14-088) are closed (NOV 0500313/2014009-01 and 05000368/2014009-01).

.2 Confirmatory Action Letter (CAL) Inspection Focus Area Closures (IP 92702)

Background

On March 4, 2015, ANO Units 1 and 2 transitioned to the Multiple/Repetitive Degraded Cornerstone Column (Column 4) of the NRC's Reactor Oversight Process Action Matrix as a result of having two Yellow findings for each unit. In response, the NRC performed IP 95003, concluding the onsite portion of the inspection on February 26, 2016, and provided insights on ANO's performance weaknesses, their causes, and related safety culture issues. The 95003 team reviewed proposed corrective actions and identified the need for additional corrective actions to create prompt and sustained improvement. In a letter dated May 17, 2016, "ANO Comprehensive Recovery Plan," (ADAMS Accession No. ML16139A059), Entergy notified the NRC staff of its plan to perform specific actions to resolve the causes for declining performance at ANO, and provided a summary of that plan.

The NRC reviewed Entergy's Comprehensive Recovery Plan (CRP) and concluded that Entergy's planned corrective actions should correct significant performance deficiencies and result in sustained performance improvement at ANO. The CRP is comprised of 14 Area Action Plans (AAPs) that contain key improvement actions and scheduled completion dates. The NRC grouped the CRP actions into six inspection focus areas to support future inspection activities based on ANO performance concerns documented in NRC Inspection Report 05000313/2016007 and 05000368/2016007 (ADAMS Accession No. ML16161B279).

The NRC issued a Confirmatory Action Letter (CAL) on June 17, 2016, (ADAMS Accession No. ML16169A193) to confirm commitments made by Entergy Operations, Inc. (Entergy). This CAL identified 161 of the 200 commitments made by Entergy that the NRC planned to conduct inspections to verify the actions were completed and were effective in achieving the intended outcomes to improve safety performance at ANO. These intended outcomes were described in each of the 14 AAPs in specific Desired Behaviors and Outcomes (DB&Os). The CAL listed the 161 actions of interest in the following Inspection Focus Areas:

1. Significant Performance Deficiencies – actions intended to address the root and contributing causes for the Yellow findings for the stator drop and the flooding events, including plant deficiencies and problems with vendor oversight, change management, conservative decision making, and risk management
2. Identification, Assessment and Correction of Performance Deficiencies – actions intended to address the improvement in the implementation and oversight of the corrective action program, self-assessment, performance monitoring, the quality of problem evaluations, and the use of operating experience
3. Human Performance – actions intended to improve human performance, leadership behaviors, organizational capacity, procedure quality, standards, and accountability
4. Equipment Reliability and Engineering Programs – actions intended to improve implementation of processes and programs that ensure key plant equipment remains available, reliable, and capable of meeting the plant design and licensing bases, including resolving specific equipment conditions
5. Safety Culture – actions intended to improve nuclear safety culture values and behaviors to ensure commitment by leaders and individuals to emphasize safety over competing goals
6. Service Water Self-Assessment – actions intended to ensure conditions adverse to quality are identified and resolved by conducting a focused self-assessment of the Units 1 and 2 service water systems in accordance with station procedures and NRC Inspection Procedure 93810, “Service Water System Operational Performance Inspection”

Starting in August 2016, the NRC conducted quarterly CAL follow-up inspections to review CAL actions that the licensee had determined were complete and effective in achieving the DB&Os. However, many individual DB&Os were intended to be achieved by completing multiple related actions. Since it was desirable to provide prompt feedback after each action was completed, the NRC concluded that it was appropriate to perform a review of each Inspection Focus Area by selecting a sample of the key DB&Os to verify that the actions in aggregate were effective. This inspection performed this review for two of the six Inspection Focus Areas.

a. Review of Inspection Focus Area: Significant Performance Deficiencies

Background

Using the Reactor Oversight Process (ROP), the NRC reviews safety-significant findings and performance indicators to determine the appropriate regulatory response described in the ROP Action Matrix. ANO was placed into Column 4 oversight on March 4, 2015.

The 95003 inspection team determined that ANO had identified the relevant causes for the stator drop and flood protection issues. ANO determined that the root causes for the stator drop finding involved inadequate guidance and project management oversight of vendors’ design and testing of the temporary lift assembly. The root causes for the Yellow flood protection finding involved inadequate preventive maintenance strategies,

incomplete design documentation, and the failure to verify whether the existing plant configuration met licensing basis requirements for flood mitigation. The NRC team agreed with ANO's root cause evaluation results.

Scope of Review

To ensure the licensee adequately addressed the inspection focus area, the NRC team reviewed the focus area for key DB&Os to verify that the licensee showed sustained improvement. Specifically, the following DB&Os were reviewed:

- Flood Protection (FP) DB&O-1: Degraded or nonconforming flooding design features have been corrected. (Key Actions FP-6, FP-7, FP-8)
- FP DB&O-3: A Flooding Protection Program Owner is established and the Owner actively engages with plant personnel in helping them to understand and maintain the flood protection features. (Key Action FP-4, FP-9)
- FP DB&O-5: Flood Protection Program is functional and addresses the following key aspects:
 - Configuration control of flood protection features is maintained.
 - Flood barrier breaches are evaluated, tracked, and controlled by a barrier impairment process.
 - The material condition of flood protection features is monitored and maintained.
 - Operating experience is evaluated and addressed.

(Key Actions FP-1, FP-2, FP-4, FP-5, FP-9, FP-11, FP-12, FP-13)

- FP DB&O-6: The Flooding Upper Level Document is updated and maintained. An engineering report and flood protection drawings are developed and maintained to clearly document flooding design basis and credited flood protection features (credited internal and external flood protection features and credited operator actions). (Key Actions FP-1, FP-2, FP-5, FP-9, FP-11)
- Lift Rig Failure and Vendor Oversight (VO) DB&O-4: The roles and responsibilities of the supervisor, whether a station employee or a supplemental supervisor, are clearly defined and vigorously implemented for supervising supplemental personnel. (Key Actions VO-6, VO-7, VO-16, VO-20)
- VO DB&O-6: Contract/Project Managers support excellent performance of supplemental personnel by ensuring and being accountable for:
 - Standards and expectations are thoroughly communicated to and understood by supplemental personnel.
 - Contract/Project Managers are commonly seen in working areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly.

- Contract/Project Managers set the example for adherence to process administrative procedures.
- The responsibility for the monitoring and oversight of supplemental personnel is identified clearly and is performed effectively. Responsible managers ensure supervisory and management oversight of work activities, including contractors and supplemental personnel, such that nuclear safety is supported and ensured.
- Service organizations and station line managers clearly identify and reinforce accountabilities for supplemental personnel performance. Leaders foster an environment that promotes accountability and hold individuals accountable for their actions.
- An effective means of feedback exists that promotes continual improvement in supplemental personnel performance. Leaders actively solicit feedback, listen to concerns, and communicate openly with all individuals.

(Key Actions VO-2, VO-6, VO-13, VO-14, VO-15, VO-16, VO-20)

- VO DB&O-8: Administrative controls for project risk management are rigorously applied. Risk items with potential high consequences are identified and addressed. (Key Actions VO-6, VO-19, VO-21, VO-23, VO-24)
- Design and Licensing Basis (DB) DB&O-1: Leaders model and continually reinforce expectations that nuclear safety is the overriding priority in making decisions. Feedback and performance measures focus on nuclear safety. (Key Actions DB-1, DB-2)
- DB DB&O-2: Engineering staffing levels are adequate to sustain improved plant operations, maintain high levels of equipment performance, and support excellence in Engineering Program implementation. Changes to staffing levels, workload, skills, proficiency or knowledge level are addressed with nuclear safety as the overriding priority. Engineering backlogs are maintained such that latent risks are minimized. (Key Actions DB-4, DB-5, DB-6, OC-1, OC-2, OC-3 and OC-4)
- Decision Making and Risk Management (DM) DB&O-5: Decision makers ensure the problem statement driving a decision is well understood with complete facts and validated assumptions. The right people are involved in the decision making process to understand the problem, assess the impact, develop solutions, understand the risk, make a decision, and develop any needed mitigation strategies. (Key Actions DM-5, DM-14, DM-15, DM-16)

It should be noted that the licensee removed the original DM DB&O-5 based on the realization that it was captured in other DM DB&O. The new DM DB&O that encompass the original DB&O-5 are:

- DM DB&O-2: Senior leaders demonstrate accountability and a bias for action to correct deficiencies and challenges to safe and reliable operation for the long

term. Responsible managers present accurate information and thorough solutions that minimize threats to plant performance and safety.

- DM DB&O-4: The station uses well-defined decision-making processes and tools.
- DM DB&O-6: Decision makers consistently develop multiple alternatives for decisions that take into account Nuclear Risk, Industrial Risk, Dose Risk, Plant Transit Risk, Equipment Reliability Risk, Enterprise Risk.
- DM DB&O-8: Workers understand the potential risk impact of plant conditions and work activities. Mitigating actions are applied for identified risks.
- DM DB&O-9: Risk management processes are applied effectively to manage integrated risk for planned and unplanned activities and events.
- DM DB&O-10: Risk is minimized through an operational focus led by the Operations Shift Managers and supported by station management. Risk related equipment issues are well understood and addressed in a timely, effective manner.

To evaluate the licensee's corrective action effectiveness, the team reviewed:

- Focused Self-Assessment for Vendor Oversight (LO-ALO-2014-0001 CA-41)
- Flood Protection Area Action Plan Closure Report
- Lift Rig Failure and Vendor Oversight Area Action Plan Closure Report
- Closure Readiness Evaluation for Significant Performance Deficiencies
- Confirmatory Action Letter and Area Action Plan Actions Effectiveness (LO-ALO-2018-00014)
- Review of Entergy fleet procedures to verify CAL commitments were translated from ANO recovery procedures
- Interviewed a cross section of station employees and contractors

The team evaluated the corrective actions and effectiveness criteria established by the licensee in aggregate for the reviewed DB&O's. The team noted that the flooding protection program, preventive maintenance strategies, and the plant configuration were consistent with the ANO licensing basis requirements for flood mitigation. The team also found that ANO's processes and procedures would provide adequate flood protection if they are maintained. These processes and procedures include a Flood Protection Program with a primary and backup program engineer. The Flood Protection Program includes a series of flood protection drawings, preventive maintenance with appropriate maintenance intervals, and maintenance rule program monitoring. In the plant, ANO has staged flood protection features with contingency supplies and all plant for flood protection features are marked with placards. Additionally, the program has coordinated with the maintenance planning department to identify and track flood protection breach

permits. Overall, the team found that all the effectiveness measures and performance improvement indicators are positive.

The team noted the licensee has maintained ANO specific procedures for vendor oversight that are more stringent than the Entergy fleet procedure and that all available plant specific performance improvement data indicates that the station is continuing to improve. Performance improvement data for errors by contractors, greater supervisor field presence, work management process, work completion, etc. are all indicating continued station improvement in procedure and process compliance.

Based on the sampling of DB&Os, having closed all supporting actions taken by the licensee, reviews of performance data, and observations performed on site, the team concluded that the actions taken to address Significant Performances Deficiencies, in aggregate, were effective in achieving the Desired Behaviors and Outcomes. Therefore, Significant Performances Deficiencies inspection focus area is closed.

b. Closure of Inspection Focus Area: Identification, Assessment, and Correction of Performance Deficiencies (IACPD)

Background

In performing their RCEs for the stator drop and flood protection issues, the 95003 inspection team determined that ANO identified most of their performance problems. ANO concluded that leaders did not make corrective action program (CAP) implementation a priority, did not adequately oversee the CAP, and relied on unverified assumptions. ANO staff did not always assign the appropriate significance level to condition reports, resulting in problems not being sufficiently understood so that corrective actions would be effective. Cause evaluations tended to focus on addressing the most apparent problem (e.g., equipment issues) without examining organizational and programmatic elements.

The 95003 inspection team concluded that CAP procedures were adequate; however, ANO did not always implement the program as intended. Station personnel at all levels lacked a clear understanding of one or more elements of the CAP process and their roles and responsibilities. There were a number of instances where ANO did not adequately evaluate or use internal and external operating experience to prevent future problems. Some evaluations relied on unverified assumptions, and degraded conditions were accepted through evaluations, resulting in reduced safety margins or long-term compensatory actions. Limited resources led to CAP action backlogs, impacting timely corrective action. ANO was ineffective in using performance assessments and trending to identify declining performance.

Interim actions to improve CAP performance yielded positive results with respect to the quality of documentation; however, the 95003 team noted multiple examples where cause evaluations and extent of condition reviews were narrowly focused, condition reports were closed without completing specified actions, and problems requiring an evaluation for potential operability bypassed the on-shift licensed operator review function.

Scope of Review

To ensure the licensee adequately addressed the inspection focus area, the NRC team reviewed the focus area for key desired behaviors and outcomes to verify that the licensee showed sustained improvement. Specifically, the following DB&O were reviewed:

- CAP DB&O-7: The performance review group (PRG) members demonstrate and reinforce high standards of performance through consistent review, constructive feedback, and product grading of station cause evaluations to ensure quality analysis and actions prevent repetition of station events and issues. (Key Actions include CA4, CA5, CA7, and CA8)
- CAP DB&O-10: During Department Performance Improvement Meeting (DPRMs) and Aggregate Performance Improvement Meetings (APRMs) leaders critically review CAP and operating experience (OE) performance, and identify subtle declines in performance. Senior leaders demonstrate accountability and a bias for action to correct deficiencies and challenges to nuclear safety. Responsible managers present accurate information, present thorough solutions and do not minimize threats to plant performance and safety. Senior Leaders create an environment that is conducive to robust interaction and problem resolution. (Key Actions CA4, CA10, LF-8, LF-11, LF-14)
- CAP DB&O-11: The Nuclear Safety Culture Monitoring Panel (NSCMP) closely monitors CAP and OE trends and issues and periodically reviews CAP performance to detect indications of performance decline and issues that may affect nuclear safety. The NSCMP and the Senior Leadership Team take prompt action to correct negative trends. (Key Actions include CA-2, SC-02, SC-03, LF-01, LF-05, LF-09)
- DM DB&O-1: Individuals use decision-making practices that emphasize prudent choices over those that are simply allowable. Decision makers take into consideration the risk associated with short-term gains versus long-term solutions and consider potential nuclear, radiological and industrial safety consequences when making decisions. (Key Action DM1, DM3, DB1, DB2)

To evaluate the licensee's corrective action effectiveness, the team reviewed:

- Corrective Action Program Area Action Plan Closure Report
- Closure Readiness Evaluation for Identification, Assessment, and Correction Performance Area Action Plan Closure Report
- Training Improvement Organization Performance Area Action Plan Closure Report
- Corporate and Independent Oversight Area Action Plan Closure Report
- Self-Assessment for CAL and Area Action Plan Actions Effectiveness (LO-ALO-2018-00014)

- Entergy fleet procedures to verify CAL commitments were translated from ANO recovery procedures.
- CAP and OE performance indicators
- Interviewed PRG members and observed PRG meeting on February 12, 2018.
- A sample of APRM and DPRM meeting minutes, and observed the Security Department DPRM in December 2017. No adverse conditions identified during the review of APRMs, DPRMs, and during the observation of the Security Department DPRM.
- NSCMP meeting minutes and observed NSCMP meeting on February 14, 2018

The team evaluated the corrective actions and effectiveness criteria established by ANO in aggregate for the reviewed DB&O. The team noted from July 2017 to December 2017, the licensee reduced its adverse condition report backlog from approximately 500 to 361 (established goal was >450), and the corrective actions open greater than 365 days was below 60 for the entire period (established goal >60). It was also noted by the team that the licensee identified weaknesses during their most recent focused self-assessments conducted in 2017 and early 2018. The licensee initiated condition reports and implemented corrective actions for each identified weakness. The weaknesses were related to causal product quality and oversight provided by PRG. The team reviewed the implemented and planned corrective actions and determined that they were appropriate to the circumstances.

Based on the sampling of DB&Os, previous inspections that closed all supporting actions taken by the licensee, reviews of performance data, and observations performed on site, the team concluded that the actions taken to address Significant Performances Deficiencies, in aggregate, were effective in achieving the Desired Behaviors and Outcomes. Therefore, Significant Performances Deficiencies inspection focus area is closed.

.3 CAL Follow-up (IP 92702)

a. Actions to Address Significant Performance Deficiencies

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. (CR-ANO-C-2014-00259 CA-19, CA-58, CA-70, CA-73, CA-78, CA-93, CA-127, CA-250 through CA-252)

During the third quarter of 2012, ANO had an outside design agency (ODA) perform walkdowns of the flood protection features required by the licensing basis. These walkdowns were required by an NRC 10 CFR 50.54(f) request for information letter dated March 12, 2012 (ML12053A340). The walkdowns were part of the post-Fukushima flooding design basis verification effort that was intended to identify and address plant-specific vulnerabilities or performance deficiencies, and verify the adequacy of monitoring and maintenance procedures. A second ODA walkdown was conducted in the third quarter of 2013 as a result

of the self-revealing deficiencies from the flooding event. This second walkdown identified more than 100 additional deficiencies. Some of the deficiencies were from original construction, and some involved barriers that had ineffective preventive or corrective maintenance.

During the NRC's first review of FP-8 in Inspection Report 05000313/2017013 and 05000368/2017013 (ML18024A285), the team documented an issue with the procedure used to verify that auxiliary building hatches are watertight. Specifically, a smoke test was performed; however, the licensee did not record testing data that validated the auxiliary building was at a negative pressure when hatch 492 was tested. The test method relied on the auxiliary building side of the hatch being at a lower pressure than the turbine building side, then create smoke near the seal on the turbine building side. Seal leakage would become apparent because smoke would be drawn to the area of the leak by air being drawn through the area of the leak. In response to the concern, the licensee performed air pressure measurements while the team was onsite, which indicated a slightly positive pressure inside the auxiliary building, contrary to the basis for performing the testing. Therefore, the inspectors concluded that the test method was flawed because it would not have provided indication of seal leakage if it were present. This resulted in the team questioning the validity of smoke testing in general and the operability/functionality of all auxiliary building penetrations that have been tested using this method. The licensee documented the concerns in Condition Report CR-ANO-1-2017-03673.

For this inspection, the team reviewed corrective actions associated with this item to evaluate the licensee's corrective action effectiveness. After the NRC's first review of Procedure 1402.240, "Inspection of Watertight Hatches," the licensee revised the procedure to require verifying that the auxiliary building was at a negative pressure as an initial condition for performing the test. The team observed a performance of Revision 2 of Procedure 1402.240, "Inspection of Watertight Hatches," and did not identify any issues. In addition, the team reviewed the closure packages, flooding procedures, corrective action documents, interviewed station personnel, and performed walkdowns to determine that the internal flood gaps identified from the review of documentation for credible flood paths and the follow-up walk downs have been resolved.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address FP-8 were effective. Therefore, FP-8 is closed.

- 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. (CR-ANO-C-2015-02838 CA-14)

The licensee assigned a responsible manager for each project, and then implemented a qualification process to allow the use of supplemental supervisors to perform most vendor supervisory duties. During the 95003 supplemental inspection, the NRC team noted that Procedure EN-OM-126, "Management and Oversight of Supplemental Personnel," did not contain guidance to ensure that supervisors or oversight personnel had appropriate technical expertise to be fully capable of providing oversight for the specific project or work. Interviews with

ANO personnel assigned oversight roles for supplemental workers commented that they did not always have the technical expertise to provide oversight of supplemental employees assigned to them.

During the NRC's first review of VO-7 in Inspection Report 05000313/2017012 and 05000368/2017012 (ML17282A018), the team found that the licensee tested 20 plant personnel following training and 11 individuals scored below the required 80 percent required to pass the test. However, since the overall average of the 20 tests was an 83 percent, the licensee issued "read and sign" training modules to the 11 failures with no subsequent test as a corrective action. The team determined that the licensee did not have an adequate basis to conclude that the training was adequate for the intended purpose or that individuals qualified to conduct management and oversight of supplemental personnel possessed and demonstrated a sufficient level of technical knowledge to effectively perform their roles. This report stated that action VO-7 would be reviewed in a future inspection after the licensee: 1) reviews the adequacy of the training material and makes any appropriate modifications; 2) implements the training, if revised; and 3) concludes that sustained improvement has been demonstrated in individuals who have completed the training on Procedure EN-OM-126, "Management and Oversight of Supplemental Personnel."

For this inspection, the team reviewed corrective actions associated with these concern to evaluate the licensee's corrective action effectiveness. As a result of the NRC's first review of the training material, the licensee re-evaluated the procedures using a systematic approach to training concept to determine the appropriate level and testing of the concepts and objectives from the procedures. The licensee developed computer based training with a required test at the end of the training. In addition, the licensee developed a test question bank, determined the test to be required on an annual basis with a pass/fail of 80 percent, and determined that the current annual requirement was sufficient. At the time of this inspection, the licensee had trained and tested 76 of 195 contract and project managers; 63 passed on the first attempt, 10 passed on the allowed second attempt, 2 individuals were on a remediation plan, and the final person has not utilized the second attempt. The team reviewed the training material, procedures, corrective action documents, and interviewed station personnel to determine that the training for contract and project managers for management and oversight of supplemental personnel was adequate.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address VO-7 were effective. Therefore, VO-7 is closed.

b. Actions to Address Identifying, Assessing, and Correcting Performance Deficiencies

DM-12 Conduct benchmarking of a high performing station in the area of operations focus with a plan based on "Principles for Effective Operational Decision Making." (CR-ANO-C-2015-02832 CA-24). These principles included:

1. Conditions that potentially challenge safe, reliable operation are recognized and promptly reported for resolution.

2. Roles and responsibilities are established for making and implementing decisions and are thoroughly understood by plant personnel.
3. Potential consequences of operational challenges are clearly defined, and alternative solutions are rigorously evaluated.
4. Decisions are based on a full understanding of short and long-term risks and the aggregate impact of conditions associated with various options.
5. Implementation plans are developed to effectively communicate actions, responsibilities, compensatory measures, and contingencies to ensure successful outcomes.
6. Decisions and decision-making activities are periodically evaluated.

During the 95003 inspection, the NRC team found that benchmarking was not a common practice at ANO. If benchmarking occurred, it was typically within the Entergy fleet. Plant personnel commented that if benchmarking resulted in suggestions for improvements, improvement items typically had not received priority due to limited resources.

The team evaluated the corrective actions and effectiveness criteria established by the licensee for implementing benchmarking of a high performing station in the area of Operations Focus. The team concluded that benchmarking plan was focused on industry principles for effective operational decision-making. From this benchmarking, the licensee developed improvement actions. The team confirmed that a high performing plant that was not part of the Entergy organization was benchmarked. The benchmarking identified the licensee did not consistently ensure senior leadership ownership of emergent plant issues. The licensee implemented actions to influence the behaviors of senior leaders within the organization to ensure engagement and responsibility for key operational issues is obtained. They modified existing platforms such as the plant health committee, the plant status report, and operational focus meeting to achieve sustainability. The licensee also implemented an issues response team that incorporates the objectives of existing corporate platforms such as a duty roster, ODMIs, outage control center, and failure modes analysis with the objective of making a centralized process to establish a consistent and reliable response to emergent plant needs.

The team observed that licensee implemented these key actions during recent emergent equipment issues. Additionally, the team reviewed three key performance indicators associated with operational focus. These key indicators are operator aggregate index for non-outage issues (goal less than or equal to 1); on-line risk deviation with planned and actual on-line risk (goal of less than or equal to -0.5); and unplanned limited condition of operations (LCO) entries (goal of less than or equal 1). The team observed improvement in each indicator and met the established goal, demonstrating that the licensee has improved its operational focus.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-12 were effective. Therefore, DM-12 is closed.

DM-15 Perform a benchmark on a high performing station outside the Entergy Fleet on Operational Decision Making Instruction (ODMI) development, implementation

and effectiveness reviews, and develop improvement actions based upon the results. (CR-ANO-2016-01348 CA-3)

During the 95003 supplemental inspection, the NRC team reviewed several long-term degraded conditions that were the subject of ODMIs to assess whether the process was implemented and maintained effectively. The team found that operators, including shift managers and control room supervisors, did not always have a clear understanding of the decisions, action thresholds, and compensatory measures established in existing ODMIs. The team also identified one violation caused by the incompatible actions created from two concurrent ODMIs affecting the Unit 2 safety injection system.

For this inspection, the team evaluated the licensee's corrective action effectiveness. The team reviewed procedures governing the ODMI process.

The team evaluated the corrective actions and effectiveness criteria established by the licensee for implementing benchmarking of a high performing station outside the Entergy fleet and reviewed other nuclear fleet and station procedures on ODMI development, implementation and effectiveness reviews. From this benchmarking the licensee identified improvement actions, including implementing changes to procedure EN-OP-111, "Operational Decision-Making Issue Process," to add an ODMI quality review checklist in order to ensure that all the elements necessary for the ODMI were incorporated and the requirement for responsible individual should use this attachment. The team noted that these key actions from the benchmarking were incorporated into the licensee's procedures and improved the quality of ODMI. Additionally, the licensee implemented a team approach for developing ODMI, incorporated risk considerations based from the benchmarking conducted at other non-Entergy sites.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-15 were effective. Therefore, DM-15 is closed.

c. Actions to Address Human Performance Issues

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. (CR-ANO-C-2015-02833 CA-20)

During the 95003 supplemental inspection, the NRC team identified that losses of experienced personnel resulted in engineering having 48 percent of staff having less than 5 years of nuclear power plant experience. Engineers assigned responsibility for multiple systems or programs had difficulty performing all assigned duties. In some cases, engineering program owners had not completed all the required qualifications, and ANO relied on additional oversight and mentoring as bridging strategies.

For this inspection, the team reviewed procedure EN-MS-S-051-A, “ANO Engineering Standard for Engineering Change Package Development,” which was established as supplemental guidance to maintain a consistent use of the standard design change process using fleet procedures. The licensee created Engineering Standard EN-MS-S-051-A by compiling supplemental desk guides and checklists developed by ANO and Entergy engineers on how to perform their duties using fleet procedures. The licensee solicited the supplemental guidance through a survey, which the team reviewed. The engineering standard also combined guidance for identifying design inputs, expectations for use, and additional guidance on the appropriate procedural forms used in the engineering change procedures. The team reviewed the management briefings, which communicated the expectations for use of this new engineering standard to the engineering staff. The briefing records shows that 106 out of 108 engineers acknowledge attendance at the briefings.

To evaluate the effectiveness and sustainability of this action, the team interviewed two staff engineers and one engineering supervisor. The supervisor and engineers all stated they refer back to the standard when creating an engineering change. Additionally, they stated that the information presented in the standard is useful. They also stated that the licensee reinforced the use of the standard extensively during team discussions and during mentoring sessions with new engineers.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DB-17 were effective. Therefore, DB-17 is closed.

DM-14 Assign a mentor to review all Operational Decision Making Instructions until proficiency is demonstrated. (CR-ANO-C-2016-01348 CA-2)

During the 95003 supplemental inspection, the NRC team reviewed several long-term degraded conditions that were the subject of ODMIs to assess whether the process was implemented and maintained effectively. The team found that operators, including shift managers and control room supervisors, did not always have a clear understanding of the decisions, action thresholds, and compensatory measures established in existing ODMIs. The team also identified one violation caused by the incompatible actions created from two different ODMIs affecting the Unit 2 safety injection system.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this action. Additionally, the team reviewed procedures governing the operation decision-making issue process. The team independently reviewed seven active operational decision-making issue products. The team discussed these products, training requirements, effectiveness reviews, and implementation with the ANO subject matter expert for the operation decision-making issue process.

The team evaluated the corrective actions and effectiveness criteria established by the licensee for assigning a mentor to review and improve current ODMIs. The mentors reviewed all new ODMIs until such time proficiency was demonstrated based on the following criteria:

- No long standing ODMI precursors open longer than 60 days.
- A review of open ODMIs to determine the triggers and actions are clear and executable.
- Effectiveness reviews where being performed.

The team observed no long standing ODMI precursors, each open ODMI had clearly defined and executable triggers and actions, and effectiveness where performed and assigned as reoccurring corrective actions. Additionally, the ODMIs where of high quality, corrective actions assigned to correct the condition described in the ODMI, and repairs were scheduled.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-14 were effective. Therefore, DM-14 is closed.

DM-16 Develop and implement training for key personnel on ODMI development, implementation, and effectiveness reviews. (CR-ANO-C-2016-01348 CA-4)

During the 95003 supplemental inspection, the NRC team reviewed several long-term degraded conditions that were the subject of ODMIs to assess whether the process was implemented and maintained effectively. The team found that operators, including shift managers and control room supervisors, did not always have a clear understanding of the decisions, action thresholds, and compensatory measures established in existing ODMIs. The team also identified one violation caused by the incompatible actions created from two different ODMIs affecting the Unit 2 safety injection system.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. Additionally, the team reviewed training material developed and discussed the training with a sample of personnel who completed the training.

The team evaluated the corrective actions and effectiveness criteria established by the licensee for implementing training for key personnel on ODMI development, implementation, and effectiveness reviews. The training was administered to operations and engineering personnel on a single occasion. The licensee determined that the training would be added to initial senior reactor operator and shift technical advisor required training. Additionally, procedure COPD-035, "ANO Emergent Issue Response" was revised to assign roles and responsibilities of the ODMI subject matter expert. The licensee has developed knowledge management plan for the subject matter expert to maintain the improved standards for the ODMI process. The team concluded that the training material reflected new standards for ODMIs, appropriate personnel were provided the training, and that trainees felt that the training was helpful in improving the quality and usability of ODMI documents.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-16 were effective. Therefore, DM-16 is closed.

- LF-3 Provide supervisory training on constructive conversation skills. (CR-ANO-C-2015-02829 CA-30)

During the licensee's second root cause evaluation following the stator drop event, ANO concluded that there were weaknesses in leaders' ability to provide effective communications, build trust with employees, create a vision to arrest the performance decline, reinforce high standards and expectations, foster a learning organization and culture of continuous improvement, and make sound decisions that manage risk. During the 95003 supplemental inspection, the NRC team found that, while communication methods and frequency had improved, most communication came from the supervisor level and that messages from senior management were not communicated consistently to the organization.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. The licensee updated their initial supervisory development and fleet leadership programs to include required training courses focusing on constructive conversation skills. The licensee administered this training as mandatory for existing supervisors and managers. The team reviewed the training plans, training presentations, and training completion records, noting that 209 of 233 supervisors and managers completed the training in a classroom setting. (The remaining 24 leaders were excepted because of pending retirements or exit from the company.) Additionally, the team interviewed two managers and one supervisor to assess the effectiveness of the training. Based on the interviews and performance metrics on post-effectiveness evaluations, the team concluded that the constructive conversation skills were improved by the training.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address LF-3 were effective. Therefore, LF-3 is closed.

- PM-14 Address gaps in the Preventive Maintenance Program baseline staffing level based on the current levels of experience in the departments and at the site. (CR-ANO-C-2015-02834 CA-116)

During the licensee's second root cause evaluation following the stator drop event, the licensee found that insufficient organizational capacity contributed to high levels of overtime in maintenance, backlogs, teamwork issues, and uncertainty and stress among the workforce. The resulting high workloads and limited staffing made it challenging to train a workforce with over 40 percent of the workers having less than 5 years of experience at ANO. During the 95003 supplemental inspection, the NRC team noted that ANO had experienced difficulty recruiting experienced people in key technical areas, and that ANO had not addressed the challenge of recruiting experienced workers within the Organizational Capacity Area Action Plan.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. The licensee has had their organizational capacity plan in place, staffed preventive maintenance program positions they deemed necessary, and monitor metrics to ensure their staff is able to keep up with their workload while still producing quality work. The metrics the licensee is monitoring are:

- 3 month Rolling Sum High Critical Component Failures for Units 1 and 2
- Open Preventive Maintenance Change Requests
- Open Craft Feedback Requests

The licensee picked the 3-month rolling sum metric for high critical component failures to better depict the current performance. The licensee has set a standard of how many failures will result in “green,” “yellow,” and “red” performance. The licensee’s goal is to stay below “red” performance at any time. If the metric goes to “yellow,” the licensee will put in place a recovery plan to restore performance.

The “Open Preventive Maintenance Change Requests” and “Open Craft Feedback Requests” have metrics to monitor how long it is taking for the staff to respond to change and feedback requests from staff. The metric does not measure how many requests there are, only how many exceed a response time of 90 days. The licensee uses this information to ensure they are at an appropriate staffing level.

The team noted that ANO also put in place the ANO People Health Committee process, which monitors the staffing levels, experience and training needs to support the workload in each work group on a quarterly basis. This process serves as both the assessment tool and the corrective action mechanism for the site.

The licensee selected these metrics in order to provide objective evidence that their Preventive Maintenance Program baseline staff levels are sufficient to keep up with the needed work levels and still produce quality procedures and work orders to maintain an acceptable failure rate for high critical components. The metrics show that feedback from the maintenance and craft staff was being incorporated into procedures and work orders in a timely manner. It also keeps track of high critical component failures to ensure that staff were not pressured to complete inadequate work quality. The team concluded that the metrics adequately reflect the effectiveness of the PM program staffing, and that these metrics were being met.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address PM-14 were effective. Therefore, PM-14 is closed.

PQ-8 Upgrade procedures classified as “normal.” (CR-ANO-C-2015-03033 CA-26)

During the 95003 supplemental inspection, the NRC team agreed with ANO’s assessment that the leadership team had not consistently provided the organizational structure, staff priorities, or dedicated resources to support high

quality procedures and work instructions, and had not consistently applied current industry guidance for procedure content, structure, and human factoring.

For this inspection, the team reviewed corrective actions associated with this item to evaluate the licensee's corrective action effectiveness. The licensee has previously completed rewriting all of the stations safety-related procedures and is now working on rewriting the "normal" procedures for the chemistry and operations departments. The NRC previously concluded that the licensee successfully incorporated an industry standard for procedure writing and grading and trained procedure writers to use the new standards. The standard requires all procedures to have a passing grade of 85 percent or greater. All of the rewritten procedures currently have a passing grade above 85 percent.

The licensee has also combined the procedure writing groups for both the chemistry and operations departments into one centralized organization to reduce the differences between procedure writing styles between organizational groups.

The licensee has not completed the rewriting process for all of the "normal" procedures within the chemistry and operations departments. They developed a project plan that will be complete by the middle of year 2020, which was consistent with Entergy's commitment reflected in the ANO CAL. The team determined that the licensee is currently ahead of this schedule with passing grades for all the applicable procedures being higher than the 85 percent minimum.

Based on the actions taken and scheduled by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address PQ-8 were effective. Therefore, PQ-8 is closed.

PQ-9 Upgrade Critical 1-4 Model Work Orders with a frequency of greater than or equal to two years or two refueling outages. (CR-ANO-C-2015-03033 CA-27)

During the licensee's second root cause evaluation following the stator drop event, the licensee identified the following:

- the level of detail in work orders was not sufficient to prevent plant events
- the backlog of work order and PM feedback increased
- PM documents were not updated until the PMs were entering the work scheduling process
- and sufficient resources were not available to support work planning.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. The licensee incorporated an industry standard for procedure writing and grading which they have applied to rewriting the Critical 1-4 model work orders. The standard requires all work orders to have a passing grade of 85 percent or greater. All of the rewritten work orders currently have a passing grade above 85 percent.

The licensee has not currently rewritten all Critical 1-4 model work orders. The licensee has a project plan to complete rewriting the last of the targeted work orders by the middle of 2020, which was consistent with Entergy's commitment reflected in the ANO CAL. The team determined that the licensee was ahead of this schedule and achieving passing grades for all the applicable work orders (i.e., scoring higher than the 85 percent minimum).

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address PQ-9 were effective. Therefore, PQ-9 is closed.

d. Actions to Address Equipment Reliability and Engineering Program Deficiencies

DB-10 Resolve standards performance deficiencies from the engineering program assessments completed during the Preventive Maintenance (PM) Program extent of condition review. (CR-ANO-C-2015-02834 CA-157, CA-160, CA-161, CA-164, CA-165, and CA-168)

ANO completed extent of condition reviews as part of their PM root cause evaluation which included 30 snapshot assessments of engineering programs. The 95003 supplemental inspection team reviewed 12 of the snapshot assessments, resulting in two violations and one finding. The NRC team also noted issues within the Repair and Replacement, Welding, and Large Motor Programs.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item related to the following programs:

- Air Operated Valves Program
- Heat Exchanger Program
- Service Water Program
- Obsolescence/Long-term Asset Management Program
- Microbiologically Influenced Corrosion Program

The team reviewed engineering program procedures and documents associated with the standards performance deficiencies identified by the snapshot self-assessments (standards performance deficiency is an Entergy term used to identify a self-assessment finding that may involve failures to meet a requirement or commitment). In addition, the team conducted interviews with engineering program owners and the applicable program health reports were reviewed. The team verified that corrective actions were taken to address the standards performance deficiencies and that resources are being allocated to ensure that engineering programs are effective.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions to address DB-10 were effective. Therefore, DB-10 is closed.

DB-11 Perform one benchmark or one self-assessment between March 1, 2016, and March 1, 2020, for each of 23 selected engineering programs. (CR-ANO-C-2015-02833 CA-28, and CR-ANO-C-2016-00614 CA-8, CA-22 and CA-25)

During the 95003 supplemental inspection, the NRC team found that the ANO snapshot assessments of engineering programs were conducted in a systematic manner, some used industry experts, and identified program deficiencies. However, the NRC team concluded that ANO's snapshot assessments were not fully effective in assessing whether some programs addressed longstanding equipment performance trends or whether plant components were appropriately included in programs. In response to the NRC team's observations, ANO initiated actions (CR-ANO-C-2016-00614) to conduct benchmarking of engineering programs and assign experienced mentors.

The NRC had been tracking the corrective action to review the High Energy Line Break (HELB) program assessment and completion of the ANO HELB Design Documentation Project Plan (CR-ANO-C-2015-02833 CA-28) as an extent of cause review associated with CAL action FP-2. However, ANO requested that the NRC track and close it under DB-11 since that was how ANO was tracking it. The NRC agreed and documented the decision in Inspection Report 05000313/2017011 and 05000368/2017011 (ML17195A478) in the section closing FP-2.

For DB-11, the CAL reflects that the licensee committed to complete 23 engineering program benchmarks or self-assessments by mid-2020, and specifically complete these actions for the following five programs listed below by mid-2018, in accordance with procedure EN-LI-104, "Self-Assessment and Benchmark Process:

- ASME Repair and Replacement Program
- Microbiologically Influenced Corrosion Program
- Large Motor Program
- Probabilistic Risk Assessment Program
- High Energy Line Break Program

For this inspection, the team concluded that these benchmark and self-assessments applied a systematic approach to the review of each program. Each assessment identified standards performance deficiencies, enhancements, and negative observations. These deficiencies and issues were entered into the corrective action program. The team concluded that these deficiencies were corrected or corrective action plans were initiated and will be completed in period commensurate with safety.

The team reviewed the corrective actions associated with the ANO HELB Design Documentation Project Plan, which included the licensee's High Energy Line Break Self-Assessment/Effectiveness Review. The team concluded that the self-assessments applied a systematic approach to the review of the program. The licensee specifically identified standards performance deficiencies associated with Entergy's fleet procedures for temporary modification and work order planning. These procedures had not included the consideration of the potential

impact of design changes to HELB program. The team verified that these conditions were in the Entergy corrective action program and plans are in place to correct the conditions.

The team concluded that the licensee completed a thorough review of the HELB Program through the ANO HELB Design Documentation Project Plan and self-assessment. However, the team identified that the licensee had failed to initiate condition reports or corrective actions for missing design bases calculations or licensing documents identified in CALC-ANOC-CS-16-00004, "HELB Program Design Basis Consolidation Report," Table 9-1. Corrective actions were not initiated for the following original design information that could not be located:

- (Unit 1) No analytical method for identifying the break locations exists for the Unit 1 high energy piping within containment.
- (Unit 1) No design bases information could be located that records jet impingement forces or pipe whip restraint design or locations for the high energy piping in the Unit 1 containment.
- (Unit 1) No justification for the adequacy of impingement barriers that protect service water headers could be located.
- (Unit 2) Documentation to support break locations and thrust loads detailed in FSAR Tables 3.6-2 and 3.6-3 could not be located.
- (Unit 2) Documentation to support the adequacy of pipe whip restraints and jet impingement barriers for the auxiliary building steam generator piping.
- (Unit 2) No mass or energy release information in any design and licensing documents.
- (Unit 2) No basis for the jet impingement effects for safety injection system breaks outside of containment.
- (Unit 2) No detailed design bases information could be located for pressurizer low temperature overpressure protection line breaks.
- (Unit 2) No design bases records were located that recorded the environmental effects due to rupture of the steam supply to concentrator lines.
- (Unit 2) No design bases records were located that recorded pipe whip and jet impingement effects due to a rupture of the steam supply to emergency feedwater (EFW) pump turbine.
- (Unit 2) No design bases records were located that recorded the environmental effects of breaks in the reactor coolant letdown and make-up system.

Following discussion with the team, the licensee entered these conditions into corrective action program as CR-ANO-C-2018-00643. At the end of the inspection, the licensee had not completed the corrective action project plan to locate or reconstitute the missing design information.

Because no corrective action project plan was available to review, the team could not assess the corrective actions. Therefore, DB-11 will remain open pending the licensee's completion of the project plan and the NRC review.

DM-18 Develop and implement work management training for senior managers, managers, and each of the identified work management positions with respect to their roles and responsibilities. (CR-ANO-C-2015-03034 CA-13, CA-14, CA-16, CA-18)

During the 95003 supplemental inspection, the NRC team identified that ANO planned work assuming that all maintenance workers would be available to support work. This necessitated that any emergent work be addressed by the Fix-It-Now (FIN) team, or else some planned work had to be rescheduled. The team noted that planned work was often delayed or removed from the schedule because preparations were not completed prior to equipment being taken out of service. Examples included unavailable workers, missing parts not being available, and incomplete maintenance risk evaluations.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. The licensee developed several different training presentations for the different roles and responsibilities. For example, the licensee developed a formal lesson plan training for the work management roles and responsibilities of Production personnel. The team reviewed the licensee's training plans, training completion records, work management metrics. The team also interviewed workweek planners, schedulers, operations work liaisons, and other station personnel to assess the station's effectiveness in communicating each person's role and responsibility in the work management process. Based on the interviews and work management metrics on work planning, scheduling, and execution, the team concluded that the work management process roles and responsibilities were improved by the training.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-18 were effective. Therefore, DM-18 is closed.

DM-20 Develop and implement supply versus demand model and metrics to determine and monitor resource needs to meet work load demand. (CR-ANO-C-2015-03034 CA-22 and CA-28)

During the 95003 supplemental inspection, the NRC team identified that ANO planned work assuming that all maintenance workers would be available to support work. This necessitated that any emergent work be addressed by the FIN team, or else some planned work had to be rescheduled. As a result, emergent maintenance frequently disrupted planned work. Work was frequently delayed or removed from the schedule because preparations were not completed prior to equipment being taken out of service. Examples included unavailable

workers, required parts were not available, or incomplete maintenance risk evaluations. The FIN team was expected to work off minor maintenance and backlog work, but because a work plan did not exist, workers often pursued other activities.

During the NRC's first review of DM-20 in Inspection Report 05000313/2016010 and 05000368/2016010 (ML16314C483), the team determined that the new maintenance worker supply vs. demand model did not provide an easily interpretable comparison of the supply of qualified maintenance workers on a given work week and the demand based on the scheduled work activities. The team concluded that the estimates of available work hours relied on unrealistic assumptions and did not account for vacations. The work hours scheduled for planned work frequently exceeded the available work hours with the existing maintenance personnel, necessitating scheduling overtime into weekly plans, or relying on the sharing of resources. The team concluded that DM-20 would be reviewed in a future inspection pending a determination by the licensee that the new tool effectively represents the resources available to perform scheduled work and is being effectively used to match work and available resources.

Based on the results of the first review of the supply and demand model, the licensee implemented multiple changes to better estimate and monitor supply and demand in the work management process. These improvements included: improving the staffing of the FIN team to improve its capacity to accomplish work; developed a schedule to work down backlogs; implementing work process procedure improvements; ensuring that pre-job walkdowns occurred to improve the accuracy of work scope; implementing the training discussed in DM-18; and implementing work management performance indicators to gage the effectiveness of the new supply versus demand model.

The team reviewed the actions associated with this item and interviewed workweek planners, schedulers, operations work liaisons, and other station personnel to assess the station's effectiveness in implementing the supply vs. demand model. The team determined that ANO made a number of changes including:

- Personnel changes, added individuals where appropriate to be able to account for emergent work, advanced training, vacations, sick leave, etc.
- Establishing a 90 day goal to update a work management document from the date of the identified concern
- Implementing the use of additional computer software to be able to track work load projections with available resources on a daily basis
- Holding the station accountable to ensuring completion of the work schedule at all levels through twice-daily work management meetings that identified immediate changes when problems were identified

Based on the interviews, work management performance indicators, and roughly 6 months using the current supply versus demand program, the team concluded

that the licensee's implementation of the supply versus demand model was improved. The team noted that the model goal was not exceeding 110 percent utilization, and the performance improvement metric allowed the indicator to be green up to 115 percent utilization, although the procedure states that work is normally loaded to 100 percent of the available resources. The team determined that this inconsistency was minor and that the actual practice was to ensure available resources before planning or scheduling above 100 percent. The team's review of the work management process and performance indicators demonstrated that the current supply versus demand model and performance indicators were effective in allow the station to determine and monitor resource needs to meet work load demand.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address DM-20 were effective. Therefore, DM-20 is closed.

PH-13 The following list contains equipment reliability issues that are being evaluated by the Plant Health Committee for resolution commensurate with the potential impact on safe and reliable operation of the units by December 20, 2018. For items not resolved by the due date, the Plant Health Committee will provide the safety basis for the extension. (CR-ANO-C-2015-02832 CA-38, and CR-ANO-C-2015-03029 CA-34)

- Resolution of Unit 1 EDG exhaust stack thinning
- Resolution of Unit 2 EDG exhaust stack thinning
- Unit 2 spent fuel pool cooling system performance improvement
- Continue service water (SW) piping replacement
- Correct back-leakage into the Unit 1 boric acid system
- Unit 2 EFW Terry turbine governor replacement
- Unit 2 spare SW motor issue resolution
- Unit 1 high pressure injection pump P-36B motor refurbishment
- Tornado/missile protection for EFW piping resolution
- Unit 1 reactor vessel head leak-off line replacement
- Unit 1 and 2 super particulate iodine and noble gas (SPING) monitor replacement

For this inspection, the team reviewed the licensee's progress in resolving equipment reliability issues by evaluating the actions taken to address the following:

- Unit 2 SFP cooling system performance improvement
- Continued SW piping replacement

The team reviewed the work orders and modifications associated with correcting these equipment issues. The team did not identify any issues with the corrective actions taken. However, the service water piping replacement is an ongoing project. The licensee is prioritizing sections of piping that need to be replaced and this will continue for several refueling cycles.

The team also reviewed the safety basis the plant health committee used in deferring the following items to a later date:

- Unit 2 EFW Terry turbine governor replacement
- Unit 1 high pressure injection pump P-36B motor refurbishment
- Tornado/missile protection for EFW piping resolution
- Unit 1 reactor vessel head leak-off line replacement

The team did not identify any issues with the safety basis for extending the repairs to this plant equipment. The licensee has a plan to work all of the items at a later date based on scheduling and prioritization.

Inspectors reviewed the corrective actions taken to date on the equipment and noted that further work on this system will be performed in the future. No issues were identified in the review of this documentation. The addition of this item to the Equipment Reliability Issue List demonstrates commitment to resolving equipment reliability issues.

The team also noted that the only remaining action that the NRC plans to inspect is the Unit 1 and Unit 2 Super Particulate Iodine and Noble Gaseous Monitor (SPINGS) replacement.

This action will remain open pending licensee action on the SPING replacement item. This action will be reviewed during a future inspection to verify the licensee is resolving the equipment reliability issues listed.

PM-7 The Planning Quality Review Team (PQRT) will perform an enhanced review of critical work orders for a minimum of 12 months and feed back the results to the planning staff. (CR-ANO-C-2015-02834 CA-119 and CA-120)

During the Preventive Maintenance root cause evaluation, the licensee identified that work order instructions lacked sufficient detail, including details needed to ensure that the work scope was fully accomplished, steps provided and verified critical attributes, and critical steps were identified.

For this inspection, the team reviewed the effectiveness of corrective actions associated with this item. The licensee established a quorum to hold enhanced Planning Quality Review Team (PQRT) meetings for a minimum of 12 months. The enhanced PQRT meeting consisted, in part, of the required quorum to grade a percentage of critical or essential online preventive maintenance work orders scheduled to be performed in the upcoming month along with a percentage of critical or essential outage preventive maintenance work orders prior to the outage.

The licensee performed more than the required minimum 12 months of enhanced PQRT meetings. The licensee continues to use PQRT meetings on a monthly basis, although the quorum and sample sizes have been reduced.

The team reviewed the licensee's enhanced PQRT grading sheets from these meetings along with all condition reports written for work orders graded as

unsatisfactory. The team concluded that the licensee gave feed back to the planning staff with enough detail to adequately address this item.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address PM-7 were effective. Therefore, PM-7 is closed.

PM-15 Review a sample of component criticality classifications to validate that the station's risk significant equipment is classified correctly.
(CR-ANO-C-2015-02834 CA-137)

During the 95003 supplemental inspection, the NRC team identified multiple instances of incorrect PM classifications and supporting basis information. While there was a documented basis for the classification entered into the PM Optimization Software (PMOS), many components in critical systems had little or no description of the component functions, associated maintenance rule functions, credible failure modes, and consequences of failure in the PMOS entry description, contrary to procedure EN-DC-153, "Preventive Maintenance Component Classification."

The team reviewed the actions associated with this item. The licensee initially performed a review of a sample of components against current industry guidance for classifying plant components, but found a significant deviation between ANO classifications and the industry norm. Therefore, ANO expanded their review and performed a complete review of all risk significant components for both Units 1 and 2. The licensee reviewed the data in their PMOS database included the required information for each component.

The team reviewed the criticality classification and the associated data within PMOS for a sample of components within containment spray system. The team verified that components for the containment spray system were properly classified, matched the guidance per the appropriate procedure, and correctly entered into PMOS. The team did not find any missing data for the selected components.

Based on the actions taken by the licensee, information evaluated by the team, and observations performed on site, the team concluded that the actions taken to address PM-15 were effective. Therefore, PM-15 is closed.

e. Actions to Address Safety Culture Issues

SC-9 Develop and provide training to ANO leaders, including supervisory training on
NF-7 nuclear safety culture and safety conscious work environment, constructive conversation skills, and how to foster a strong nuclear safety culture within their organizations. (CR-ANO-C-2015-01445 CA-120, and CR-ANO-C-2015-02829 CA-30)

During the 95003 supplemental inspection, the NRC team reviewed the seven individual root cause evaluations performed by the ANO recovery team and evaluated the safety culture attributes of each. The NRC team noted that ANO identified that some safety culture attributes were contributors to several of the

root cause evaluation problem statements, but ANO did not consider the collective significance. The licensee performed a common cause analysis of all identified safety culture attributes and found that ANO did not have an adequate explicit management focus on safety culture and the associated infrastructure to support a healthy nuclear safety culture. The 95003 team also identified that many station personnel did not understand the difference between nuclear safety culture and safety conscious work environment.

The team reviewed the training curriculum, training presentations, training records, and post-training surveys associated with nuclear safety culture and safety conscious work environment training modules. The team verified that 97percent (227 of 234) of the on-site leaders attended classroom training sessions conducted by an external industry experts. Corrective actions to track completion of training for the final seven leaders were in place. The team verified that the training objectives incorporated examples of a positive safety conscious work environment and all nine "Traits of Positive Safety Culture," defined in the NRC's Safety Culture Policy Statement. In addition, the team determined the case studies developed were appropriate to reinforce the principles of a positive safety culture.

To evaluate the effectiveness and sustainability of this action, the team interviewed two managers and one supervisor. In addition to the interviews, the team verified that nuclear safety culture and safety conscious work environment training for supervisors is required annually. Based on the interviews and performance metrics on post-effectiveness evaluations, the team concluded that the awareness of safety culture principles, supervisor's handling of employee concerns, and constructive conversation skills were improved by the training.

Based on the actions taken by the licensee, data evaluated by the team, and observations performed on site, the team concluded that the actions taken to address SC-9 and NF-7 were effective. Therefore, SC-9 and NF-7 are closed.

40A6 Meetings, Including Exit

Exit Meeting Summary

On February 15, 2018, the team presented the preliminary inspection results to Mr. Richard Anderson, Site Vice President, and other members of the licensee staff. On March 8, 2018, the team discussed the final results of this inspection with Mr. J. Kirkpatrick, General Manager-Plant Operations, and other members of your staff. The licensee acknowledged the issues presented. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the team had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Anderson, Site Vice President
T. Arnold, Recovery Manager
L. Blocker, Recovery Director
P. Butler, Design Engineering Manager
B. Daiber, Engineering Programs and Components Manager
D. Edgell, Recovery Manager
A. Martin, Unit 2 Shift Manager
P. McCray, Senior Manager Site Projects
N. Mosher, Regulatory Assurance
E. Nicholson, Performance Improvement Manager
B. Patrick, Maintenance Manager
S. Pyle, Regulatory Assurance Manager
F. Shewmake, Unit 2 Operations Manager
M. Skartvedt, System Engineering Manager
G. Stephenson, Acting Corrective Action Program Manager
G. Sullins, Recovery Manager
J. Toben, Nuclear Safety Culture Manager
D. Vogt, Operations Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000313/2013012-04	NOV	EA 14-008	Unit 1-Failure to Follow the Materials Handling Program during the Unit 1 Generator Stator Move (Section 4OA5.1.a)
05000368/2013012-05	NOV	EA 14-008	Unit 2-Failure to Follow the Materials Handling Program during the Unit 1 Generator Stator Move (Section 4OA5.1.a)
05000313/ 05000368/2014009-01	NOV	EA 14-088	Inadequate Flood Protection for Auxiliary and Emergency Diesel Fuel Storage Buildings (Section 4OA5.1.b)

LIST OF CONFIRMATORY ACTION LETTER FOCUS AREAS CLOSED

Closed

Significant Performance Deficiencies	(Section 4OA5.2.a)
Identification, Assessment, and Correction of Performance Deficiencies	(Section 4OA5.2.b)

LIST OF CONFIRMATORY ACTION LETTER ITEMS CLOSED AND DISCUSSED

Closed

Significant Performance Deficiencies

FP-8 (Section 40A5.3.a)

VO-7 (Section 40A5.3.a)

Identifying, Assessing and Correcting Performance Deficiencies

DM-12 (Section 40A5.3.b)

DM-15 (Section 40A5.3.b)

Human Performance Issues

DB-17 (Section 40A5.3.c)

DM-14 (Section 40A5.3.c)

DM-16 (Section 40A5.3.c)

LF-3 (Section 40A5.3.c)

PM-14 (Section 40A5.3.c)

PQ-8 (Section 40A5.3.c)

PQ-9 (Section 40A5.3.c)

Equipment Reliability and Engineering Program Deficiencies

DB-10 (Section 40A5.3.d)

DM-18 (Section 40A5.3.d)

DM-20 (Section 40A5.3.d)

PM-7 (Section 40A5.3.d)

PM-15 (Section 40A5.3.d)

Safety Culture Issues

NF-7 (Section 40A5.3.e)

SC-9 (Section 40A5.3.e)

Discussed

Equipment Reliability and Engineering Program Deficiencies

DB-11 (Section 40A5.3.d)

PH-13 (Section 40A5.3.d)

LIST OF DOCUMENTS REVIEWED

Audits/Self Assessments

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	Corrective Action Program Area Action Plan Closure Report	02/02/2018
	Closure Readiness Evaluation for Identification, Assessment, and Correction Performance Area Action Plan Closure Report	0
	Training Improvement Organization Performance Area Action Plan Closure Report	02/01/2018
	Corporate and Independent Oversight Area Action Plan Closure Report	02/01/2018
	Arkansas Nuclear One Power Plant MIC Assessment Independent Review	0
	Lift Rig Failure and Vendor Oversight Area Action Plan Closure Report	02/05/2018
	Closure Readiness Evaluation for Significant Performance Deficiencies (SPD) Focus Area	0
LO-ALO-2014-0001 CA-41	Focused Self-Assessment for CR-ANO-C-2014-02318	
LO-ALO-2015-0096	Entergy EN-DC-174 Engineering Program Section – ASME Section XI Repair and Replacement and Containment Repair and Replacement	12/14/2015
LO-ALO-2016-00002	Final Effectiveness Review for Microbiologically Induced Corrosion Monitoring Program Self-Assessment Resolutions	12/15/2017
LO-ALO-2016-00089 CA-3	Confirmatory Action Letter PRA Self-Assessment	08/24/2017
LO-ALO-2016-00106	Benchmark of Electric Power Research Institute Large Electric Motor Users Group Utility Members Motor Program Best Practices	07/28/2017
LO-ALO-2016-0084	Repair and Replacement Program Assessment	12/19/2017
LO-ALO-2017-00057	VO-8 Effectiveness Assessment	10/18/2017
LO-ALO-2017-00065	Effectiveness of VO7 - 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. Reference: CR-ANO-C-2015-02838 CA-014	06/29/2017

Audits/Self Assessments

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
LO-ALO-2017-00069	Benchmark of Wolf Creek's SW Guided Wave Inspection Report	08/1/2017
LO-ALO-2018-00025	High Energy Line Break (HELB) Self-Assessment/Effectiveness Review	02/08/2018
NQ-2017-014	Nuclear Independent Oversight (NIOS) Third Follow-up of Quality Assurance Finding (QAF) CR-ANO-C-2014-00437 and the Comprehensive Recovery Plan (CRP) Lift Rig Failure and Vendor Oversight Area Action Plan (AAP) Escalation	08/08/2017

Condition Reports (CR-ANO-)

1-2015-03261	1-2015-03853	1-2016-00808	1-2016-04446	1-2016-05330
1-2017-00925	1-2017-01645	1-2017-01691	1-2017-02261	1-2017-02767
1-2017-02878	1-2017-02979	1-2017-03177	1-2017-03266	1-2017-03520
1-2018-00048	2-2015-02201	2-2015-05154	2-2015-05202	2-2015-05204
2-2017-03067	2-2017-03067	2-2017-03797	2-2017-04493	2-2017-04667
2-2017-04689	2-2017-04961	2-2017-05278	2-2017-05320	2-2017-05498
2-2017-05520	2-2017-05521	2-2017-05522	2-2017-05523	2-2017-05524
2-2017-05525	2-2017-05714	2-2017-05753	2-2017-05972	2-2017-04892
2-2018-00129	C-2011-01849	C-2014-00259	C-2014-02318	C-2015-00614
C-2015-01445	C-2015-01709	C-2015-02829	C-2015-02832	C-2015-02833
C-2015-02834	C-2015-02838	C-2015-02879	C-2015-03034	C-2015-04876
C-2015-04877	C-2016-00435	C-2016-00479	C-2016-00480	C-2016-00482
C-2016-00524	C-2016-00546	C-2016-00614	C-2016-00614	C-2016-01013
C-2016-01141	C-2016-04231	C-2016-04267	C-2016-05316	C-2017-00526
C-2017-00649	C-2017-01771	C-2017-02624	C-2017-02924	C-2017-02925
C-2017-02926	C-2017-02927	C-2017-03289	C-2017-03717	C-2017-04098
C-2017-04231	C-2017-04458	C-2017-04478	C-2017-04554	C-2017-04555
C-2018-00038	C-2018-00061	C-2018-00333	C-2018-00419	C-2018-00427
C-2018-00479	C-2018-00507	C-2018-00583	C-2018-00628	

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-LI-121-ANO-RC	Trending and Performance Review Process	6
EN-QV-136-ANO-RC	Nuclear Safety Culture Monitoring	2
EN-LI-102-ANO-RC	Corrective Action Program	5
EN-MS-S-051-A	ANO Engineering Standard for Engineering Change Package Development	0
EN-DC-340	Microbiologically Influenced Corrosion (MIC) Monitoring Program	5
EN-DC-324	Preventive Maintenance Program	19
EN-DC-310	Predictive Maintenance Program	8
EN-DC-204	Maintenance Rule Scope and Basis	4
EN-DC-153	Preventive Maintenance Component Classification	15
EN-DC-148	Vendor Manuals and the Vendor Re-Contact Process	7
EN-MA-141	Limatorque Valve Operator Model SMB/SB/SBD-000 Through 5 MOV and HBC Periodic Inspection	10
EN-QV-136	Nuclear Safety Culture Monitoring	12
EN-OM-126-03	Qualification of Supplemental Supervisors	6
EN-OM-126-02	Qualification of Responsible Oversight for Supplemental Personnel	3
EN-OM-126-01	New to Nuclear Workforce Orientation	2
EN-OM-126	Management and Oversight of Supplemental Personnel	6
EN-OP-122	Operational Decision-Making Issue Precursor Process	0
EN-LI-121	Trending and Performance Review Process	24
EN-DC-115	Engineering Change Process	23
EN-OP-111	Operational Decision-Making Issue (ODMI) Process	13, 14, 15
EN-WM-109	Scheduling	10
EN-QV-109	Audit Process	34
EN-WM-105	Planning	19
EN-MA-101-03	Maintenance Work Preparation Process	8
EN-LI-104	Self Assessment and Benchmark Process	13

Procedures

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<u>Number</u>	<u>Title</u>	<u>Revision</u> <u>Date</u>
	Position Paper on Vendor Manual Update Processes at ANO	
	ANO Engineering Department Change Management Communication	09/27/2017
CALC-17-E- 0200-02	CR-ANO-2-2017-04493	0

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
EC 57218	Update Unit 1 External Flooding Protection Design Basis Document	0
EC 61840	Update Unit 2 External Flooding Protection Design Basis Document	0
EC 73309	Evaluation of MIC Leak for CR-ANO-2-2017-04493	0
ER 01-0481 E301	Evaluate Proposal for MOV PM Extension to 36 Months	0
M-2236, Sheet 1	Piping & Instrumentation Diagram Containment Spray System	95
TD F019.0030	Installation, Operation and Maintenance Instructions for Fairbanks Morse Vertical Turbine Pumps 7000	1
TD F019.0050	Installation, Operation and Maintenance for Fairbanks Morse Vertical Turbine Pumps 6M Thru 17H-7000	3
TD L200.0030	Instruction and Maintenance Manual, Limitorque, Type SMB	0
TD W127.0040	Operation and Maintenance, Instructions, Manually-Operated Globe Valve Assembly	0
TDC470 0140	Installation, Operation & Maintenance for Fairbanks Morse Pump Corporation Service Water System Pumps Model 24HH 7000	3
TDG080 0020	Instructions GEK-7320F Magne-Blast Circuit Breakers Types: AM-4.16-350-2C & AM-4.16-350-2H	6
WO 475831-03	Replacement of P-55 Flued Head	0
WO 481821	Repair/Replace Degraded Service Water Piping	0
WO 52721934	2A-209 Overhaul Circuit Breaker	0
WO 52726519	A-404 (RB Spray Pump P-35B Breaker) Thermography	0
WO 52750950	T-250 ECP Vegetation Control	0
WO 52757625	Perform Quarterly Test of OPS Portable Flood Equipment	0
WO-52747147	P-4A Perform Packing Adjustment / Replacement	0
PMCR 233004		
PMCR 254663		
PMCR 268870		
PMCR 270841		
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Miscellaneous

Number

Title

Revision
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PMCR 271737

PMCR 272721

PMCR 277679

PMCR 280476

PMCR 283009

PMCR 283010

CONFIRMATORY ACTION LETTER ITEM STATUS

Significant Performance Deficiencies

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
CO-5 OC-5	Develop and issue an Entergy change management procedure for planning, execution, and follow up of "high risk" changes. The procedure will include specific expectations for reviewing the effectiveness of "high risk" changes. Perform a snapshot benchmarking to check the approach for change management against industry practices.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
DB-1	Establish metrics to monitor performance that would indicate that leadership focus on minimizing risk and nuclear safety results in improvement to the health of maintenance rule systems.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
DB-3	Provide training to Engineering, Operations, and Planners to increase the knowledge and skills regarding passive barriers and other Design Basis Features.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
DM-6	Deliver risk recognition training and develop curriculum for all site personnel with unescorted access.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
DM-7	Develop and implement training on procedures governing risk assessment for work management SROs, work week managers, shift managers, and unit coordinators.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
DM-8	Develop and implement a familiarization (FAM) guide for the function of work management SRO that will ensure clear understanding of job functions.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
DM-10	Revise procedure EN-WM-104, "On-Line Risk Assessment," 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.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
DM-11 VO-19	Revise project management procedures to ensure high consequence risks are properly identified and eliminated/mitigated through a structured risk management process.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
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), and assign unique equipment ID to each flood protection feature and boundary.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
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 Upper Level Document. Assign unique equipment identification to each flood protection feature and boundary.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Discussed, awaiting licensee action
		5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
FP-3	Label external flood barriers in the plant to provide in-field awareness of flood protection features.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
FP-4	Establish an Engineering Barrier Program to include external and internal flood protection in accordance with the requirements of procedure EN-DC-329, "Engineering Programs Control and Oversight." Assign program owner and backup. Establish PMs for external and internal flood protection features including scope, frequency, testing criteria, and acceptance criteria.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
FP-5	Revise procedure EN-DC-329, "Engineering Programs Control and Oversight," to include external and internal flood protection in the Engineering Program List. Revise the flooding programmatic aspects of procedure EN-DC-150, "Condition Monitoring of Maintenance Rule Structures." Revise EN-DC-136, "Temporary Modifications," to incorporate external flood considerations.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
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.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
FP-7	Perform walk downs of all credited internal flood protection features and document the results in an engineering report.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Discussed, awaiting licensee action
		5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Discussed, awaiting licensee action
		2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
FP-9	Establish the Program Notebook and initial Program Health Report for flood protection in accordance with procedure 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.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
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.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
VO-4	Establish a Vendor Oversight Team to drive continuous improvement in Vendor Oversight.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
VO-5	Develop and implement a process for monitoring of supplemental oversight plan compliance.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
VO-6	Establish specific templates/guidance/examples to support consistent development of supplemental oversight plans.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Discussed, awaiting licensee action
		2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
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 operating experience, such as the contractual aspects of the stator lift rig failure and other related industry events in the familiarization guide.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
VO-9	Perform an organizational capacity assessment for vendor oversight, including contract management and administration, critical procurements, and department-specific resource impacts.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
VO-10	Evaluate span of control with regard to responsible oversight of vendors, and place actions to address identified weaknesses in the Corrective Action Program.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
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.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
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.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
VO-18	Revise Project Management procedures to ensure projects are organized and managed with (1) effective support by subject experts and (2) effective vendor and technical oversight.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting licensee action
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
VO-20	Issue a procedure for management and oversight of supplemental personnel including improvements to (1) defined responsibilities, (2) assessment of risk, and (3) vendor oversight plans.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Discussed, awaiting licensee action
		8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
VO-21 DM-9	Develop and implement recurring training for project management personnel on risk recognition and conservative decision-making.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number(s)	Status
VO-23	Revise EN-DC-114, Project Management, to provide guidance in specifying contract 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.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
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 nameplate rating affixed to it.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
		2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Additional information added

Identifying, Assessing and Correcting Performance Deficiencies

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
CA-1	Establish Corrective Action Program (CAP) content in the ANO Employee Handbook to include behaviors for prompt identification of conditions into CAP.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
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 (APHC) to support ongoing monitoring and adjustments.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
CA-4	Develop and implement initial and continuing CAP training for station employees, ACE/RCE evaluators, responsible managers (including CARB and CRG), DPICs, OE specialists and points of contact, and performance improvement personnel.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
CA-6 *SII*	Implement training, benchmarking, process improvements, and monitoring/feedback to improve the rigor, attention to detail, and overall quality of operability determinations and functionality assessments.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Discussed, awaiting licensee action
		8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
CA-7	Establish/refine key corrective action program station and group-level performance indicators.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting licensee action
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting CA-7 closure and further inspection
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
CA-10	Improve the periodic performance reviews and oversight of corrective action program and operating experience performance in Department Performance Review Meetings and Aggregate Performance Review Meetings.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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 corrective action program implementation and oversight.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
CA-12	Develop metrics to evaluate and monitor the health of the operating experience program.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
CA-13	Establish an Operating Experience (OE) mentor to review OE responses and provide critical feedback.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
CA-14	For a period of one year, establish Corrective Action Review Board (CARB) oversight of selected operating experience (OE) responses to verify program implementation meets CARB standards.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
CA-15	Revise the Operating Experience (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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
CA-16	Train each Operating Experience (OE) point of contact on their responsibilities and skills needed to recognize the applicability of OE, elevate OE, and use search tools to locate OE for evaluation.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Discussed, awaiting licensee action
		8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
CA-17	Revise Operating Experience (OE) Program procedure to include an annual review of the list of vendors providing safety-related products/services to ensure new suppliers are added.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
CO-2	Revise procedure EN-FAP-OM-002, "Management Review Meetings," to prioritize review of Nuclear Safety Culture status and regulatory performance to the operational excellence management review meeting agenda.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
CO-3	Align ANO and fleet key performance indicators with the industry and establish goals that are challenging and consistent with industry practices.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
DM-12	Conduct benchmarking of a high performing station in the area of operations focus with a plan based on "Principles for Effective Operational Decision Making."	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DM-15	Perform a benchmark on a high performing station outside the Entergy Fleet on Operational Decision Making Instruction (ODMI) development, implementation and effectiveness reviews, and develop improvement actions based upon the results.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DM-22	Benchmark outside the Entergy fleet to identify best practices in the work management process.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
DM-23	Have a group from another plant perform a peer assist visit in work management.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Discussed, awaiting licensee action
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
LF-11	Create trending and issue performance review metrics to improve the review of leader behaviors and performance results.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
OC-6 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).	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting further inspection
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PH-9	Conduct a benchmark of the Plant Health Committee and Plant Health Working Group at a recognized industry leader in identifying and addressing equipment reliability issues. The intent of this action is to validate the action plan for improving our Plant Health Committee and establishing a Plant Health Working Group.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PM-6	The Event Report 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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
PM-9	Develop metrics for the number of open craft work order feedback requests.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PM-10	Reestablish the Preventive Maintenance (PM) Program health report for a period of at least 12 months.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
TR-2	Define and incorporate guidance in the condition report (CR) screening and review process to prompt discussion and/or action for conditions potentially warranting a training solution.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
TR-3	Define and incorporate practical guidance in Procedure EN-LI-121, "Trending and Performance Review," to support consideration of training as a potential solution for organizational performance issues.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
TR-4	Training Manager provide presentation(s) to managers and Department Performance Improvement Coordinators on the use of training to support organizational performance improvement.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
VO-16	Benchmark an industry leader outside the Entergy fleet to capture best practices in vendor oversight.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed

Human Performance

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
DB-9	Experienced mentors will be assigned to the component and programs areas from July 1, 2016, through July 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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DB-18	Re-baseline expectations for supporting information for NRC license amendment requests or relief requests based on past requests for additional information.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
DB-19	Provide Regulatory Assurance departmental training on development of NRC license amendment requests.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
DM-13	Assign a mentor from outside the Entergy fleet to coach and mentor each shift manager, emphasizing the aspect of leadership in operational focus.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
DM-14	Assign a mentor to review all Operational Decision Making Instructions until proficiency is demonstrated.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DM-16	Develop and implement training for key personnel on ODMI development, implementation, and effectiveness reviews.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DM-17	Develop roles and responsibilities for the quorum line participants in the work management process.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
LF-1	Conduct leadership assessments for the senior leadership team, managers and superintendents and establish individual development plans to support closing identified gaps in leader behaviors.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
LF-3	Provide supervisory training on constructive conversation skills.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
LF-6	Benchmark an external organization for leadership fundamentals and develop improvement actions as warranted based upon the results.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
LF-10 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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
NF-1	Implement a What It Looks Like sheet for nuclear professional behaviors based on objectives in “Performance Objectives and Criteria.” Include a continued focus on the following four performance issues: <ul style="list-style-type: none"> • Procedure use and adherence • Challenging assumptions and decision making • Conservative bias and risk recognition • Low threshold for reporting issues. 	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
NF-3	Develop content for the Employee Handbook that addresses procedure use and adherence.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
NF-5	Develop content for the ANO supervisor training that addresses procedure use and adherence.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
NF-6	Revise procedure EN-OM-126, “Management and Oversight of Supplemental Personnel,” to ensure that supplemental employees receive the Site Handbook.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
NF-9 SC-8	Develop and implement a “field presence” initiative that promotes and measures leader field presence. The objective is to drive and verify field presence by leaders to engage with employees and reinforce high standards.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
OC-1	Perform organizational capacity assessments to determine staffing requirements for 16 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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
OC-2	Authorize the hiring of Entergy personnel and/or contractor positions identified as immediate staffing requirements by the ANO People Health Committee (APHC) during organizational capacity assessment reviews.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
OC-3	Establish and implement an ANO Integrated Strategic Workforce Plan that provides a strategic long-term perspective of future staffing needs with a 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 ANO People Health Committee.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
OC-4	Establish and implement an ANO People Health Committee to place priority on staffing and retention issues that are impacting ANO employees or could impact nuclear safety.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PM-13	Perform a resource allocation study of the Preventive Maintenance (PM) Program that identifies positions needed to maintain a continuously improving PM Program.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
PM-14	Address gaps in the Preventive Maintenance Program baseline staffing level based on the current levels of experience in the departments and at the site.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
PM-19	Revise the Preventive Maintenance (PM) procedure to require that craft work order feedback is monitored and incorporated within 90 days or model work order placed into “plan” status.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PQ-1	Develop and implement a site procedure writer’s guide based on applicable industry standards.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PQ-2	Develop and implement a work order instruction guide based on applicable industry standards.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PQ-3	Perform scoping reviews to assess extent of procedure and work instruction quality issues.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
PQ-4	Conduct a Procedure Professionals Association certification course for selected plant personnel.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Discussed, awaiting licensee action
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PQ-5	Risk rank station procedures as safety significant, important, or normal to facilitate procedure upgrade project scoping.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
PQ-6	Upgrade “safety significant” procedures.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
PQ-7	Upgrade procedures classified as “important.”	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
PQ-8	Upgrade procedures classified as "normal."	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
PQ-9	Upgrade Critical 1-4 Model Work Orders with a frequency of greater than or equal to 2 years or 2 refueling outages.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
PQ-10	Review and correct 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.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
PQ-11	Establish a periodic review and validation of station procedures. This will also support a systematic approach to revising the station procedures not included in other actions to the standards contained in the new writers' guide.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed

Equipment Reliability and Engineering Programs

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
DB-10	Resolve standards performance deficiencies from the engineering program assessments completed during the Preventive Maintenance (PM) Program extent of condition review.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DB-11	Perform one benchmark or one self-assessment between March 1, 2016, and March 1, 2020, for each of 24 engineering programs.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Discussed, awaiting licensee action
DB-12	Training and industry exposure will 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 area between March 1, 2016 and March 1, 2020.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
DM-18	Develop and implement work management training for senior managers, managers, and each of the identified work management positions with respect to their roles and responsibilities.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
DM-20	Develop and implement a supply vs. demand model and metrics to determine and monitor resource needs to meet workload 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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting licensee action
		2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
PH-1	For open Site Integrated Plant Database (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.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
PH-2	Perform a review of the Site Integrated Plant Database (SIPD) database from 2007 to present to identify PM or equipment reliability projects related to critical equipment that have been cancelled without mitigation strategies.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
PH-3	Review and update the current Aging/Obsolescence List, Critical Spares List, and Equipment Reliability Issues List to identify items that should be included in the 2017 and 2018 business cycles.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PH-4	Review and update the current site Unit Commitment List to identify operations and maintenance and capital projects which are required to be resolved by completion of refueling outages 1R27 and 2R26.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PH-6	Obtain an independent third party review of the selection of Site Integrated Planning Database (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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
PH-10	Develop educational materials for the plant health process including SIPD processing. Include a detailed flowchart, workbook, and detailed presentation materials. Deliver the presentation to system, component, and program engineers and to selected supervisory personnel. Have the workbook completed by personnel following the presentation.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
PH-11	Develop a job familiarization guide for Plant Health Working Group and Plant Health Committee members and alternates. Have all members and alternates complete the guide.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
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	8/25/17 – 9/1/17	05000313/2017012, 05000368/2017012	Additional information added

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
	over the next two unit operating cycles. The intent of this action is to demonstrate improved equipment reliability by resolving long-standing equipment issues.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Additional information added
PH-13	The following list contains equipment reliability issues that are being evaluated by the Plant Health Committee for resolution commensurate with the potential impact on safe and reliable operation of the units by December 20, 2018. For items not resolved by the due date, the Plant Health Committee will provide the safety basis for the extension.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Additional information added
PM-1	Create a site specific procedure for component classification that will ensure appropriate classification of equipment for PM based upon risk and safety.	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Closed
PM-2	Create a site-specific PM program procedure that includes lessons learned from the PM FPA root cause related to critical input to PM changes.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PM-5	The Preventive Maintenance (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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
PM-7	The Planning Quality Review Team will perform an enhanced review of critical work orders for a minimum of 12 months and feedback the results to the planning staff.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
PM-11	Implement a new qualification card for maintenance personnel who perform PM evaluations.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PM-12	Implement training for all personnel who are qualified to establish Preventive Maintenance (PM) requirements.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
PM-15	Review a sample of component criticality classifications to validate that the station's risk significant equipment is classified correctly.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
PM-18	Develop mitigation strategies to address cancelled projects in the Site Integrated Planning Database (SIPD) including embedded sub component projects.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed

Safety Culture

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
CO-1	Revise procedure EN-FAP-OM-011, "Corporate Oversight Model," to include station nuclear safety culture output from the Nuclear Safety Culture Monitoring Panel (NSCMP) as inputs to the Oversight Analysis Meeting and Oversight Review Board.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
CO-4	Revise procedures that govern Nuclear Oversight Performance Assessments to include NSC 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 NSC and include in established reporting process.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Closed
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 employees and leaders to use the book in communicating, demonstrating, and reinforcing appropriate behaviors.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
LF-5 *SII*	Provide supervisory training on nuclear safety culture (NSC) and safety conscious work environment.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed
NF-4	Develop content for the NSC observation process that addresses procedure use and adherence.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
PM-20	Track Leadership Fundamentals RCE CR-ANO-C-2015-02829 CA-022. Improve the performance review process for leadership fundamentals supportive of long term strategic improvement.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Discussed, awaiting licensee action
		11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
SC-2	Revise procedure EN-QV-136, “Nuclear Safety Culture Monitoring,” to define the roles and responsibilities of the ANO NSC Manager.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
SC-3	Revise procedure EN-QV-136, “Nuclear Safety Culture Monitoring,” to add NSC monitor orientation training for Nuclear Safety Culture Monitoring Panel (NSCMP) and Safety Culture Leadership Team members.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
SC-5	Create an ANO Employee Handbook that includes nuclear safety culture, safety conscious work environment, and corrective action program (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.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
SC-6	Conduct meetings facilitated by members of site management to familiarize personnel with the contents of the ANO Employee Handbook and expectations for its use.	11/27/17 – 12/1/17	05000313/2017013, 05000368/2017013	Closed
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.	2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed

Area Action Plan	Description	Inspection Dates	Inspection Report Number	Status
SC-9 NF-7	Develop and provide training to ANO leaders, including supervisory training on nuclear safety culture and safety conscious work environment, constructive conversation skills, and how to foster a strong nuclear safety culture within their organizations.	2/12/18 – 2/16/18	05000313/2018012, 05000368/2018012	Closed
SC-10 NF-8	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.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
SC-11	Implement priority group specific action plans to address safety culture issues.	8/28/17 – 9/1/17	05000313/2017012, 05000368/2017012	Closed
SC-14 LF-9 CA-2	Establish and implement a Nuclear Safety Culture Observations process including elements of leader behaviors, nuclear safety culture, and safety conscious work environment. The observer monitors leader performance on a daily basis and provides feedback to correct adverse trends in behaviors.	8/29/16 – 9/16/16	05000313/2016010, 05000368/2016010	Discussed, awaiting licensee action
		2/27/17 – 3/3/17	05000313/2017010, 05000368/2017010	Closed
SC-15	Raise the priority and visibility of nuclear safety culture (NSC) at the fleet level by revising the Corporate Oversight Model to include station NSC output from the Nuclear Safety Culture Monitoring Panel (NSCMP) as input to fleet oversight analysis meetings and oversight review boards.	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed

Service Water System Self-Assessment

Description	Inspection Dates	Inspection Report Number	Status
Service Water System Operational Performance Inspection	10/31/16 – 12/2/16	05000313/2016008, 05000368/2016008	Discussed
	5/22/17 – 5/26/17	05000313/2017011, 05000368/2017011	Closed

ARKANSAS NUCLEAR ONE – NRC CONFIRMATORY ACTION LETTER (EA-16-124)
 FOLLOW-UP INSPECTION REPORT 05000313/2018012 AND 05000368/2018012 – DATED
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