



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD
ARLINGTON, TX 76011-4511

March 1, 2017

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

SUBJECT: ANNUAL ASSESSMENT LETTER FOR ARKANSAS NUCLEAR ONE,
UNITS 1 AND 2 (REPORT 05000313/2016006 AND 05000368/2016006)

Dear Mr. Anderson:

On February 16, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed its end-of-cycle performance assessment of Arkansas Nuclear One (ANO), Units 1 and 2, reviewing performance indicators (PIs), inspection results, and enforcement actions from January 1, 2016, through December 31, 2016. This letter informs you of the NRC's assessment of your facility during this period and its plans for future inspections at your facility. The NRC concluded that overall performance at your facility preserved public health and safety. The NRC plans to hold a public meeting at the ANO Training Center Auditorium on March 23, 2017, to discuss the details of our performance assessment.

The NRC determined the performance at ANO, Units 1 and 2 during the most recent quarter remained within the Multiple/Repetitive Degraded Cornerstone Column (Column 4), the second lowest performance category of the NRC's Reactor Oversight Process (ROP) Action Matrix. ANO, Units 1 and 2 transitioned to Column 4 on March 4, 2015, as a result of having one Yellow finding in the Initiating Events Cornerstone in each unit involving the failure to adequately approve the design and to load test a temporary lift assembly, and one Yellow finding in the Mitigating Systems Cornerstone in each unit involving the failure to design, construct, and maintain plant design features required to protect safety-related equipment from the effects of flooding.

On June 9, 2016, the NRC completed a supplemental inspection and independent review of the causes for declining safety performance at ANO, which included a review of corrective actions taken and planned to achieve sustained performance improvement. The NRC inspection team determined that ANO, Units 1 and 2 are being operated safely and Entergy Operations, Inc. (EOI) understands the depth and breadth of performance concerns associated with ANO's decline in safety performance. The NRC team concluded that effective implementation of the licensee's Comprehensive Recovery Plan (CRP), supported by the allocation of adequate resources and continued enhanced oversight by EOI leadership, should lead to substantial and sustained performance improvement. The results of the inspection were documented in NRC Inspection Report 05000313/2016007 and 05000368/2016007 (Agencywide Documents Access

and Management System (ADAMS) Accession No. ML16161B279). In a letter, dated May 17, 2016, "ANO Comprehensive Recovery Plan" (ADAMS Accession No. ML16139A059), EOI notified the NRC staff of its plan to perform specific actions to resolve the causes for declining performance at ANO. On June 17, 2016, the NRC issued a Confirmatory Action Letter (ADAMS Accession No. ML16169A193) which confirmed EOI commitments to take 161 specific actions included in the ANO CRP. The Confirmatory Action Letter groups these actions in six categories:

- Significant performance deficiencies (i.e., actions to address the two Yellow findings)
- Identification, assessment, and correction of performance deficiencies
- Human performance
- Equipment reliability and engineering programs
- Safety culture
- Service water system self-assessment

The NRC began conducting quarterly inspections in August 2016 to review your progress toward completing the ANO CRP actions that were identified in the Confirmatory Action Letter. The NRC is using Inspection Procedure 92702, "Follow-up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders," to assess the effectiveness of completed corrective actions in meeting the performance improvement objectives stated in the CRP.

Based on our inspections of your progress in improving performance at the site, and in completing the actions in the Confirmatory Action Letter, we have noted some improvements in performance at the site. Our inspections noted improved leadership behaviors, more conservative decision making, increased resource commitments to improve equipment reliability, reductions in maintenance and engineering backlogs, and improvement in the corrective action program. Several areas continue to need additional attention. In particular, your safety culture surveys have shown modest improvements, the work management processes have inconsistent performance due to challenges in resources and teamwork, emergent equipment issues challenged your ability to complete planned work, and preventable human performance errors continue to occur. In the first two Confirmatory Action Letter follow-up inspections, the NRC was not able to close 12 of the 35 actions reviewed because they were either not yet effective in achieving the stated CRP objectives or required further actions. Additionally, the NRC found that insufficient performance indicators and tracking mechanisms were in place to monitor the effectiveness of the CRP. We understand that you have initiated efforts to improve the quality of your effectiveness reviews and that you intend to develop additional measures to monitor improvement efforts.

On December 8, 2016, you verbally notified the NRC that you would not complete two actions from the Confirmatory Action Letter in the area of Safety Culture by the committed completion date of December 29, 2016. Your letter dated February 24, 2017 (ADAMS Accession No. ML17055B516), stated that you expanded the planned scope of communication skills training for station leaders based on the results of an effectiveness review. The letter proposed a new commitment to complete the expanded training scope by December 28, 2017. The NRC plans to respond to your request via separate correspondence.

On February 27, 2017, the NRC issued Inspection Report 05000368/2017014 (ADAMS Accession No. ML17055A727), to document the NRC final significance determination for the failure to provide adequate lubrication for emergency diesel generator A in Unit 2, resulting in a failure of that system on September 16, 2016. The NRC concluded that the finding is

appropriately characterized as having low to moderate safety significance (White). In addition to ROP baseline inspections, the NRC plans to conduct a supplemental inspection in accordance with Inspection Procedure 95001, "Supplemental Inspection Response to Action Matrix Column 2 Inputs." The objectives of this inspection will be: to assure that the root causes and contributing causes are understood, to independently assess and assure that the extent of condition and extent of cause are identified, to assure that corrective actions taken to address and preclude repetition are prompt and effective, and to assure that corrective action plans direct prompt actions to effectively address and preclude repetition. This inspection will be scheduled after you notify the NRC of your readiness. The NRC reviewed this finding and its causal factors in context with the performance issues that contributed to ANO being placed into Column 4 of the NRC's Action Matrix and concluded that continued oversight in Column 4 remains appropriate.

The enclosed inspection plan lists the inspections scheduled through December 31, 2018. The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. Routine inspections performed by resident inspectors are not included in the inspection plan. The inspections listed during the last twelve months of the inspection plan are tentative and may be revised. The NRC will contact you as soon as possible to discuss changes to the inspection plan should circumstances warrant any changes. This inspection plan does not include the plan for security-related inspections, which will be sent via separate, non-publicly available correspondence.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). Please contact Mr. Neil O'Keefe at (817) 200-1574 with any questions you have regarding this letter.

Sincerely,

/RA/

Kriss M. Kennedy
Regional Administrator

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

Enclosure:
Arkansas Nuclear One Inspection Plan

ANNUAL ASSESSMENT LETTER FOR ARKANSAS NUCLEAR ONE, UNITS 1 AND 2
(REPORT 05000313/2016006 AND 05000368/2016006) – DATED MARCH 1, 2017

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ADAMS ACCESSION NUMBER: ML17060A212

☒ SUNSI Review: ADAMS: ☐ Non-Publicly Available ☒ Non-Sensitive Keyword: NRC-002
 By: JDixon/dll ☒ Yes ☐ No ☒ Publicly Available ☐ Sensitive

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SIGNATURE	/RA/	/RA/	/RA J. Clark acting for/	/RA/		
DATE	02/24/17	02/27/17	02/27/17	3/1/17		

OFFICIAL RECORD COPY

Arkansas Nuclear One
Inspection / Activity Plan
01/01/2017 - 12/31/2018

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
Start	End				
			EXAM - INITIAL EXAM U2		5
2	01/09/2017	01/13/2017	X02585	INITIAL EXAM ANO UNIT 2 (02/2017)	
2	02/13/2017	02/17/2017	X02585	INITIAL EXAM ANO UNIT 2 (02/2017)	
			CAL QTR1 - CAL CLOSURE INSPECTION QTR1		5
1, 2	01/01/2017	03/31/2017	IP 92702	Followup On Corrective Actions For Violations And Deviations	
			U2 EDG - FINAL SDP - UNIT 2 EDG WHITE FINDING		6
2	01/08/2017	03/04/2017	IP 71153	Followup of Events and Notices of Enforcement Discretion	
			TI-191 - MITIGATING STRATEGIES/SFP INST FOR BDBEE		4
1, 2	01/23/2017	01/27/2017	IP 2515/191	Inspection of Licensee's Responses to Order EA-12-049, EA-12-051 & EP Info Request March 12, 2012	
			95001 - UNIT 2 EDG A BEARING SLEEVE		1
2	02/01/2017	12/31/2017	IP 71153	Followup of Events and Notices of Enforcement Discretion	
2	02/01/2017	12/31/2017	IP 95001	Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area	
			CAL QTR2 - CAL CLOSURE INSPECTION QTR2		4
1, 2	04/01/2017	06/30/2017	IP 92702	Followup On Corrective Actions For Violations And Deviations	
			RS 13 PI - RADIATION SAFETY		2
1, 2	04/10/2017	04/14/2017	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1, 2	04/10/2017	04/14/2017	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1, 2	04/10/2017	04/14/2017	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1, 2	04/10/2017	04/14/2017	IP 71151-PR01	RETS/ODCM Radiological Effluent Occurrences	
			71111.08 - INSERVICE INSPECTION 2R25		1
2	04/10/2017	04/21/2017	IP 7111108P	Inservice Inspection Activities - PWR	
			EB2-03 - LICENSE RENEWAL INSPECTION (PHASE 1)		2
2	04/17/2017	04/21/2017	IP 71003	Post-Approval Site Inspection for License Renewal	
			TSB 52B - BIENNIAL PI&R		4
1, 2	05/01/2017	05/05/2017	IP 71152	Problem Identification and Resolution	
1, 2	05/15/2017	05/19/2017	IP 71152	Problem Identification and Resolution	
			CAL QTR3 - CAL CLOSURE INSPECTION QTR3		4
1, 2	07/01/2017	09/30/2017	IP 92702	Followup On Corrective Actions For Violations And Deviations	
			EP-1 - BIENNIAL EP PROGRAM INSPECTION		1
1, 2	07/10/2017	07/14/2017	IP 7111402	Alert and Notification System Testing	
1, 2	07/10/2017	07/14/2017	IP 7111403	Emergency Preparedness Organization Staffing and Augmentation System	
1, 2	07/10/2017	07/14/2017	IP 7111404	Emergency Action Level and Emergency Plan Changes	
1, 2	07/10/2017	07/14/2017	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies	

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

Arkansas Nuclear One
Inspection / Activity Plan
01/01/2017 - 12/31/2018

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
Start	End				
EP-2 - EP PERFORMANCE INDICATOR VERIFICATION					1
1, 2	07/10/2017	07/14/2017	IP 71151-EP01	Drill/Exercise Performance	
1, 2	07/10/2017	07/14/2017	IP 71151-EP02	ERO Readiness	
1, 2	07/10/2017	07/14/2017	IP 71151-EP03	Alert & Notification System Reliability	
EB1-21N - ANO DESIGN BASIS PROGRAMS INSPECTION					3
1, 2	07/24/2017	08/11/2017	IP 7111121N	Component Design Bases Inspection (Programs)	
EXAM - INITIAL EXAM U1					6
1	01/22/2018	01/26/2018	X02628	INITIAL EXAM ANO UNIT 1-(05/18)	
1	02/26/2018	03/02/2018	X02628	INITIAL EXAM ANO UNIT 1-(05/18)	
CAL QTR4 - CAL CLOSURE INSPECTION QTR4					4
1, 2	10/01/2017	12/31/2017	IP 92702	Followup On Corrective Actions For Violations And Deviations	
RS 24 - RADIATION SAFETY					2
1, 2	11/06/2017	11/10/2017	IP 71124.02	Occupational ALARA Planning and Controls	
1, 2	11/06/2017	11/10/2017	IP 71124.04	Occupational Dose Assessment	
EB1-07T - ANO HEAT SINK PERFORMANCE					2
1, 2	11/13/2017	11/17/2017	IP 7111107T	Heat Sink Performance	
CAL QTR1 - CAL CLOSURE INSPECTION QTR1					4
1, 2	01/01/2018	03/31/2018	IP 92702	Followup On Corrective Actions For Violations And Deviations	
EB2-03 - POST-APPROVAL LICENSE RENEWAL (TEAM)					4
2	02/12/2018	02/16/2018	IP 71003	Post-Approval Site Inspection for License Renewal	
2	03/05/2018	03/09/2018	IP 71003	Post-Approval Site Inspection for License Renewal	
CAL QTR2 - CAL CLOSURE INSPECTION QTR2					4
1, 2	04/01/2018	06/30/2018	IP 92702	Followup On Corrective Actions For Violations And Deviations	
RS 12PI - RAD SAFETY					2
1, 2	04/16/2018	04/20/2018	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1, 2	04/16/2018	04/20/2018	IP 71124.02	Occupational ALARA Planning and Controls	
1, 2	04/16/2018	04/20/2018	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1, 2	04/16/2018	04/20/2018	IP 71151-PR01	RETS/ODCM Radiological Effluent Occurrences	
7111108 - INSERVICE INSPECTION 1R27					1
1	04/16/2018	04/27/2018	IP 7111108P	Inservice Inspection Activities - PWR	
RS 5678 - RAD SAFETY					4
1, 2	06/11/2018	06/15/2018	IP 71124.05	Radiation Monitoring Instrumentation	
1, 2	06/11/2018	06/15/2018	IP 71124.06	Radioactive Gaseous and Liquid Effluent Treatment	

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Arkansas Nuclear One
Inspection / Activity Plan
01/01/2017 - 12/31/2018

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
Start	End				
			RS 5678 - RAD SAFETY		4
1, 2	06/11/2018	06/15/2018	IP 71124.07	Radiological Environmental Monitoring Program	
1, 2	06/11/2018	06/15/2018	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
			CAL QTR3 - CAL CLOSURE INSPECTION QTR3		5
1, 2	07/01/2018	09/30/2018	IP 92702	Followup On Corrective Actions For Violations And Deviations	
			BRQ - BRQ		4
1, 2	07/09/2018	07/13/2018	IP 7111111B	Licensed Operator Requalification Program	
			EP-1 - EP EXERCISE INSPECTION		4
1, 2	07/16/2018	07/20/2018	IP 7111401	Exercise Evaluation	
1, 2	07/16/2018	07/20/2018	IP 7111404	Emergency Action Level and Emergency Plan Changes	
			EP-3 - EP PERFORMANCE INDICATORS		1
1, 2	07/16/2018	07/20/2018	IP 71151-EP01	Drill/Exercise Performance	
1, 2	07/16/2018	07/20/2018	IP 71151-EP02	ERO Readiness	
1, 2	07/16/2018	07/20/2018	IP 71151-EP03	Alert & Notification System Reliability	
			EB1-21M - ANO DESIGN BASES INSPECTION TEAMS		6
1, 2	08/13/2018	08/31/2018	IP 7111121M	Component Design Bases Inspection (Teams)	
			7111108 - INSERVICE INSPECTION 2R26		1
2	09/17/2018	09/28/2018	IP 7111108P	Inservice Inspection Activities - PWR	
			CAL QTR4 - CAL CLOSURE INSPECTION QTR4		5
1, 2	10/01/2018	12/31/2018	IP 92702	Followup On Corrective Actions For Violations And Deviations	

Comments: