



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E LAMAR BLVD
ARLINGTON, TX 76011-4511

August 31, 2016

Clay Warren, Acting Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
1448 SR 333
Russellville, AR 72802-0967

**SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR ARKANSAS NUCLEAR ONE,
UNITS 1 AND 2 (REPORT 05000313/2016005 AND 05000368/2016005)**

Dear Mr. Warren:

On August 11, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed its mid-cycle performance review of Arkansas Nuclear One (ANO), Units 1 and 2. The NRC reviewed the most recent quarterly performance indicators (PIs) in addition to inspection results and enforcement actions from July 1, 2015, through June 30, 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 determined the performance at ANO, Units 1 and 2 during the most recent quarter remained within the Multiple/Repetitive Degraded Cornerstone Column of the NRC's Reactor Oversight Process (ROP) Action Matrix. On March 4, 2015, ANO Units 1 and 2 transitioned to the Multiple/Repetitive Degraded Cornerstone Column (Column 4) of the ROP Action Matrix as a result of having one Yellow finding in each unit involving the failure to adequately approve the design and to load test a temporary lift assembly, and one Yellow finding 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, as well as corrective actions taken and planned to sustain improvement efforts. 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 performance decline. 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 NRC team identified missed opportunities for ANO to have promptly initiated performance improvements since being placed in Column 4. The NRC team also concluded that your evaluations and corrective actions for three unplanned, Unit 2 scrams that contributed to a White Unplanned Scrams per 7000 Critical Hours PI, were satisfactory. Based on the

results of this inspection, the White PI was closed. The results of the inspection were documented in NRC Inspection Report 05000313/2016007 and 05000368/2016007 (ML16161B279).

In a letter dated May 17, 2016, "ANO Comprehensive Recovery Plan" (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 (ML16169A193) which confirmed EOI commitments to take specific actions included in the "ANO Comprehensive Recovery Plan." 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 self-assessment

The NRC plans to conduct quarterly inspections to review your progress toward completing the ANO Comprehensive Recovery Plan actions that are identified in the Confirmatory Action Letter. The NRC will use 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 your effectiveness in completing corrective actions. The results of these inspections will provide information for future performance assessments of ANO in accordance with NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program."

The enclosed inspection plan lists the inspections scheduled through June 30, 2018. Routine inspections performed by resident inspectors are not included in the inspection plan. The inspections listed during the second half of the inspection plan are tentative and may be revised at the end-of-cycle performance review. The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. 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 security related inspections, which will be sent via separate, non-publicly available correspondence.

In response to the accident at Fukushima, the Commission issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," and Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation." The NRC conducted audits of licensee efforts towards compliance with these Orders, and the information gathered will aid staff in development of the ultimate Safety Evaluation for the site. After the NRC staff receives the Final Compliance letter for the site, the Safety Evaluation will be issued. Then, the NRC staff will confirm through inspections the full implementation of the orders mentioned above by performing Temporary Instruction 191, "Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans."

In Staff Requirements Memorandum – SECY 16-0009, “Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities,” the Commission approved the NRC staff recommendation to discontinue the formal mid-cycle assessment process beginning in calendar year 2017. This will be the final mid-cycle assessment letter. The staff will continue to conduct quarterly assessment meetings and communicate changes in the assessment of licensee performance in accordance with the guidance in Inspection Manual Chapter 0305, “Operating Reactor Assessment Program.”

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 Agencywide Documents Access and Management 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, 50-368
License Nos. DPR-51, NPF-6

Enclosure:
Arkansas Nuclear One Units 1 and 2
Inspection/Activity Plan

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**Arkansas Nuclear One
Inspection / Activity Plan
07/01/2016 - 06/30/2018**

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
EXAM - INITIAL EXAM ANO U1					6
1	07/25/2016	07/29/2016	X02568	INITIAL EXAM ANO UNIT 1 (08/2016)	
1	08/22/2016	09/02/2016	X02568	INITIAL EXAM ANO UNIT 1 (08/2016)	
RS 5678 - RADIATION SAFETY - TEAM					4
1,2	06/27/2016	07/01/2016	IP 71124.05	Radiation Monitoring Instrumentation	
1,2	06/27/2016	07/01/2016	IP 71124.06	Radioactive Gaseous and Liquid Effluent Treatment	
1,2	06/27/2016	07/01/2016	IP 71124.07	Radiological Environmental Monitoring Program	
1,2	06/27/2016	07/01/2016	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
TSB 52B - BIENNIAL PI&R INSPECTION					5
1,2	08/29/2016	09/02/2016	IP 71152B	Problem Identification and Resolution	
1,2	08/29/2016	09/02/2016	IP 92702	Followup On Corrective Actions For Violations And Deviations	
1,2	09/12/2016	09/16/2016	IP 71152B	Problem Identification and Resolution	
INSP - BIENNIAL REQUAL INSPECTION U1					2
1	07/11/2016	07/15/2016	IP 7111111B	Licensed Operator Requalification Program	
INSP - BIENNIAL REQUAL INSPECTION U2					2
2	07/11/2016	07/15/2016	IP 7111111B	Licensed Operator Requalification Program	
EP-2 - EP PERFORMANCE INDICATORS					2
1	08/15/2016	08/19/2016	IP 71151-EP01	Drill/Exercise Performance	
1	08/15/2016	08/19/2016	IP 71151-EP02	ERO Readiness	
1	08/15/2016	08/19/2016	IP 71151-EP03	Alert & Notification System Reliability	
EP-3 - BIENNIAL EP EXERCISE INSPECTION					4
1,2	08/15/2016	08/19/2016	IP 7111401	Exercise Evaluation	
1,2	08/15/2016	08/19/2016	IP 7111404	Emergency Action Level and Emergency Plan Changes	
EXAM - INITIAL EXAM U2					6
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)	
71111.08 - INSERVICE INSPECTION 1R26					1
1	09/26/2016	10/07/2016	IP 7111108P	Inservice Inspection Activities - PWR	
RS 12 PI - RADIATION SAFETY					2
1,2	10/03/2016	10/07/2016	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1,2	10/03/2016	10/07/2016	IP 71124.02	Occupational ALARA Planning and Controls	
1,2	10/03/2016	10/07/2016	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1,2	10/03/2016	10/07/2016	IP 71151-PR01	RETS/ODCM Radiological Effluent Occurrences	

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

Enclosure

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Arkansas Nuclear One
Inspection / Activity Plan
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			EB1-21T - ANO COMPONENT DESIGN BASIS INSPECTION		7
1, 2	10/31/2016	12/02/2016	IP 7111121	Component Design Bases Inspection	
			ISFSI - LOADING INSPECTION (ONE WEEK IN MONTH)		1
1, 2	12/01/2016	12/30/2016	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
			CAL QTR1 - CAL CLOSURE INSPECTION QTR1		4
1, 2	01/01/2017	03/31/2017	IP 92702	Followup On Corrective Actions For Violations And Deviations	
			RS 13 PI - RADIATION SAFETY		3
1, 2	03/13/2017	03/17/2017	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1, 2	03/13/2017	03/17/2017	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1, 2	03/13/2017	03/17/2017	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1, 2	03/13/2017	03/17/2017	IP 71151-PR01	RETS/ODCM Radiological Effluent Occurrences	
			71111.08 - INSERVICE INSPECTION 2R25		1
2	03/13/2017	03/23/2017	IP 7111108P	Inservice Inspection Activities - PWR	
			EB2-03 - LICENSE RENEWAL INSPECTION (PHASE 1)		2
2	03/20/2017	03/24/2017	IP 71003	Post-Approval Site Inspection for License Renewal	
			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	
			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	
			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	
			EXAM - INITIAL EXAM		5
1	01/22/2018	01/26/2018	X02628	INITIAL EXAM ANO UNIT 1-(05/18)	

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			EXAM - INITIAL EXAM		5
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	
			EB1-07T - ANO HEAT SINK PERFORMANCE		1
1,2	10/30/2017	11/03/2017	IP 7111107T	Heat Sink Performance	
			RS 24 - RADIATION SAFETY		3
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	
			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	01/22/2018	01/26/2018	IP 71003	Post-Approval Site Inspection for License Renewal	
2	02/05/2018	02/09/2018	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	
			7111108 - INSERVICE INSPECTION 1R27		1
1	04/09/2018	04/20/2018	IP 7111108P	Inservice Inspection Activities - PWR	

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Kriss M. Kennedy
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Letter to Clay Warren from Kriss M. Kennedy dated August 31, 2016

SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR ARKANSAS NUCLEAR ONE,
UNITS 1 AND 2 (REPORT 05000313/2016005 AND 05000368/2016005)

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