



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

September 1, 2015

Mr. Thomas Vehec  
Site Vice President  
NextEra Energy Duane Arnold, LLC  
3277 DAEC Road  
Palo, IA 52324-9785

**SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR DUANE ARNOLD ENERGY CENTER  
(REPORT 05000331/2015005)**

Dear Mr. Vehec:

On August 13, 2015, the U. S. Nuclear Regulatory Commission (NRC) staff completed its mid-cycle performance review of Duane Arnold Energy Center. The NRC reviewed the most recent quarterly performance indicators in addition to inspection results and enforcement actions from July 1, 2014 through June 30, 2015. This letter informs you of the NRC's assessment of your facility during this period and its plans for future inspections at your facility.

Duane Arnold Energy Center began this assessment period in the Degraded Cornerstone Column of the NRC Reactor Oversight Program (ROP) Action Matrix due to the two White inspection findings in the Mitigating Systems Cornerstone. The two White findings were related to the inadequate standby diesel generator lube oil heat exchanger maintenance and the failure to perform an operability evaluation for a degraded reactor core isolation cooling turbine speed indicator. The NRC completed a supplemental inspection per Inspection Procedure (IP) 95002 for the two White findings on July 21, 2014, as documented in our letter to you dated August 29, 2014 (ADAMS Accession No. ML14241A689). As a result, Duane Arnold Energy Center returned to the Licensee Response column of the ROP Action Matrix as of the date of that letter.

However, as described in our Assessment Follow-up Letter issued on April 16, 2015 (ADAMS Accession No. ML15106A595), Duane Arnold Energy Center transitioned from the Licensee Response column to the Regulatory Response column of the ROP Action Matrix in the first quarter of 2015 and remained there at the end of this assessment period due to an inspection finding being classified as having low to moderate safety significance (i.e., White) in the Mitigating Systems Cornerstone and all performance indicators being within the nominal, expected range (i.e., Green). The White finding related to the inadequate quality controls during the application of the torus coatings. Specifically, the amount of unqualified coatings present in the torus exceeded the emergency core cooling system suction strainer design debris loading margin.

Therefore, in addition to ROP baseline inspections, the NRC plans to conduct a supplemental inspection in accordance with IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," to review the actions taken to address the performance issues related to the White inspection finding. On June 6, 2015, your staff notified

the NRC of your readiness to conduct a supplemental inspection. Duane Arnold Energy Center has completed a root cause evaluation and determined the root and contributing causes of the performance issues associated with the White finding. The extent of condition and extent of cause have also been evaluated, and corrective actions have been developed to address the root and contributing causes and to prevent recurrence of the significant performance issues. This IP 95001 inspection is being scheduled for the week of November 2, 2015.

Also, in an assessment letter dated March 4, 2015 (ADAMS Accession No. ML15062A582), the NRC opened a substantive cross-cutting issue (SCCI) with the aspect of Consistent Processes [H.13]. As documented in that letter, this SCCI will remain open until: (1) the number of findings with a cross-cutting aspect of H.13 is less than four; (2) the corrective actions taken to mitigate the cross-cutting theme are proven effective; and, (3) sustained performance improvement is observed in the H.13 aspect of the human performance area. To address the SCCI, your staff completed a root cause evaluation and implemented a number of corrective actions for the root causes and contributed causes identified. As documented in NRC Inspection Report 2015002 (ADAMS Accession No. ML15219A175), the NRC performed a problem identification and resolution inspection sample and determined that, although the number of findings with the H.13 cross-cutting aspect had dropped below four, sustained improvement in using a consistent systematic approach to making decisions had yet to be conclusively demonstrated. Therefore, the CCI<sup>1</sup> will remain open until the closure criteria are met. The inspectors will continue to evaluate your efforts to improve human performance by reviewing the cumulative effect of their corrective actions. The NRC will continue to monitor your staff's effort and progress in addressing the CCI by performing a follow-up problem identification and resolution inspection sample before our end-of-cycle assessment early next year.

The enclosed inspection plan lists the inspections scheduled through December 31, 2017. 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," which requires licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities following a beyond-design-basis external event. Additionally, the Commission issued Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," which requires licensees to have a reliable means of remotely monitoring wide-range Spent Fuel Pool levels to support effective prioritization of event mitigation and recovery actions in the event of a beyond-design-basis external event. The NRC is conducting audits of licensee efforts towards compliance with these Orders. This audit includes an onsite component in order for the NRC to evaluate licensee plans for complying with the Orders, as described in site-specific submittals, and to receive and review information relative to associated open items. This onsite activity will occur in the months prior to a declaration of compliance for the first unit at each site, and will aid staff in development of an ultimate Safety Evaluation for the site. The date for the onsite component at your site is being coordinated with your staff. A site-specific audit plan for the visit will be provided in advance to allow sufficient time for preparations.

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<sup>1</sup> The term "substantial cross-cutting issue" was changed to "cross-cutting issue (CCI)" in the most recent revision to Inspection Manual Chapter 0305, "Operating Reactor Assessment Program."

From July 1, 2014, to June 30, 2015, the NRC issued three Severity Level IV traditional enforcement violations associated with impeding the regulatory process. However, the NRC has decided to not perform Inspection Procedure 92723, "Follow Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period," at your site because two of the documented violations occurred in the 1990's and were not reflective of current performance.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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 Karla Stoedter at (630) 829-9731 with any questions you may have regarding this letter or the inspection plan.

Sincerely,

*/RA/*

Patrick L. Loudon, Director  
Division of Reactor Projects

Docket No. 50-331  
License No. DPR-49

Enclosure:  
Duane Arnold Energy Center  
Inspection Activity Plan

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DATE	8/21/2015	8/27/2015		

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**Duane Arnold**  
**Inspection / Activity Plan**  
**09/01/2015 - 12/31/2017**

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
			<b>ISFSI - ISFSI OPERATION AT AN OPERATING REACTOR</b>		<b>2</b>
1	10/01/2015	10/31/2015	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
			<b>95001 - SUPPLEMENTAL INSPECTN FOR TORUS COATING</b>		<b>1</b>
1	11/02/2015	11/06/2015	IP 95001	Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	11/30/2015	12/04/2015	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>ENG BI - TRIENNIAL MODS AND 50.59 INSPECTION</b>		<b>4</b>
1	01/11/2016	01/29/2016	IP 7111117T	Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	01/25/2016	01/29/2016	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	04/11/2016	04/15/2016	IP 71124.02	Occupational ALARA Planning and Controls	
			<b>BI EP - EP EXERCISE INSPECTION/ PI VERIFICATION</b>		<b>5</b>
1	05/01/2016	05/31/2016	IP 7111401	Exercise Evaluation	
1	05/01/2016	05/31/2016	IP 7111406	Drill Evaluation	
1	05/01/2016	05/31/2016	IP 7111408	Exercise Evaluation – Scenario Review	
1	05/01/2016	05/31/2016	IP 71151	Performance Indicator Verification	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	07/11/2016	07/15/2016	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
			<b>BI OLRQ - BIENNIAL REQUAL PROGRAM INSPECTION</b>		<b>2</b>
1	09/19/2016	09/23/2016	IP 7111111B	Licensed Operator Requalification Program	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	10/03/2016	10/07/2016	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	10/03/2016	10/07/2016	IP 71124.02	Occupational ALARA Planning and Controls	
			<b>ENG BI - INSERVICE INSPECTION</b>		<b>2</b>
1	10/10/2016	10/28/2016	IP 7111108G	Inservice Inspection Activities - BWR	
			<b>BI EP - EP BASELINE INSPECTION / PI VERIFICATION</b>		<b>1</b>
1	02/06/2017	02/10/2017	IP 7111402	Alert and Notification System Testing	
1	02/06/2017	02/10/2017	IP 7111403	Emergency Preparedness Organization Staffing and Augmentation System	
1	02/06/2017	02/10/2017	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies	
1	02/06/2017	02/10/2017	IP 71151	Performance Indicator Verification	
			<b>BI PI&amp;R - BIENNIAL PI&amp;R INSPECTION</b>		<b>4</b>
1	03/06/2017	03/24/2017	IP 71152B	Problem Identification and Resolution	

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

**Duane Arnold**  
**Inspection / Activity Plan**  
**09/01/2015 - 12/31/2017**

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	Start	End			
			<b>OL PREP - INIT EXAM/APRIL 2017</b>		<b>3</b>
1	03/20/2017	03/24/2017	W90355	OL - INITIAL EXAM - 2017 MAR-APR - DUANE ARNOLD	
			<b>OL EXAM - IIT EXAM/APRIL 2017</b>		<b>3</b>
1	04/17/2017	04/28/2017	W90355	OL - INITIAL EXAM - 2017 MAR-APR - DUANE ARNOLD	
			<b>BI ENG - COMPONENT DESIGN BASIS INSPECTION</b>		<b>6</b>
1	04/17/2017	05/19/2017	IP 7111121	Component Design Bases Inspection	
			<b>TI191 - FLEX/MITIGATING STRATEGIES/SFPI</b>		<b>4</b>
1	10/16/2017	10/20/2017	IP 2515/191	Inspection of Licensee's Responses to Order EA-12-049, EA-12-051 & EP Info Request March 12, 2012	

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