



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

September 1, 2015

Mr. Bryan C. Hanson  
Senior VP, Exelon Generation Co., LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

**SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR BYRON STATION, UNITS 1 AND 2  
(REPORT 05000454/2015005; 05000455/2015005)**

Dear Mr. Hanson:

On August 13, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed its mid-cycle performance review of Byron Station, 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, 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.

The NRC determined that overall, Byron Station, Units 1 and 2, operated in a manner that preserved public health and safety and met all cornerstone objectives. The NRC determined the performance at Byron Station, Units 1 and 2, during the most recent quarter was within the Licensee Response Column of the NRC's Reactor Oversight Process (ROP) Action Matrix because all inspection findings had very low (i.e., green) safety significance, and all PIs indicated that your performance was within the nominal, expected range (i.e., green). Therefore, the NRC plans to conduct ROP baseline inspections at your facility.

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. The audit has

been completed for the first unit at Byron, 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 Final Safety Evaluation will be issued. Then, the NRC staff will confirm through inspections the full implementation of the orders mentioned above 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 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 me at 630-826-9620 with any questions you have regarding this letter.

Sincerely,

/RA/

Eric Duncan, Chief  
Branch 3  
Division of Reactor Projects, Region III

Docket Nos. 50-454; 50-455  
License Nos. NPF-37; NPF-66

Enclosure:  
Byron Station, Units 1 and 2  
Inspection/Activity Plan

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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).

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

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
Start	End				
			<b>BI ISI - INSERVICE INSPECTION UNIT 1</b>		<b>2</b>
1	09/14/2015	10/09/2015	IP 7111108P	Inservice Inspection Activities - PWR	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	10/19/2015	10/23/2015	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1	10/19/2015	10/23/2015	IP 71124.04	Occupational Dose Assessment	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	11/16/2015	11/20/2015	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>OL PREP - INIT PREP/FEB 2016</b>		<b>3</b>
1	02/15/2016	02/19/2016	W90325	OL - INITIAL EXAM - 2016 FEB-MAR - BYRON	
			<b>OL EXAM - INIT EXAM/MARCH 2016</b>		<b>3</b>
1	03/14/2016	03/25/2016	W90325	OL - INITIAL EXAM - 2016 FEB-MAR - BYRON	
			<b>ISI - INSERVICE INSPECTION ON UNIT 2</b>		<b>2</b>
2	04/18/2016	05/20/2016	IP 7111108P	Inservice Inspection Activities - PWR	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>2</b>
1	04/25/2016	04/29/2016	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	04/25/2016	04/29/2016	IP 71124.02	Occupational ALARA Planning and Controls	
1	04/25/2016	04/29/2016	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1	04/25/2016	04/29/2016	IP 71124.04	Occupational Dose Assessment	
			<b>ENG BI - TRIENNIAL FIRE PROTECTION</b>		<b>3</b>
1, 2	06/06/2016	07/08/2016	IP 7111105T	Fire Protection [Triennial]	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>2</b>
1	06/27/2016	07/01/2016	IP 71124.06	Radioactive Gaseous and Liquid Effluent Treatment	
1	06/27/2016	07/01/2016	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
1	06/27/2016	07/01/2016	IP 71151	Performance Indicator Verification	
			<b>ISFSI - ISFSI CASK LOADING INSPECTION</b>		<b>1</b>
1, 2	10/01/2016	10/28/2016	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
			<b>BI EP - EP BASELINE INSPECTION / PI VERIFICATION</b>		<b>1</b>
1, 2	10/03/2016	10/07/2016	IP 7111402	Alert and Notification System Testing	
1, 2	10/03/2016	10/07/2016	IP 7111403	Emergency Preparedness Organization Staffing and Augmentation System	
1, 2	10/03/2016	10/07/2016	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies	
1, 2	10/03/2016	10/07/2016	IP 71151	Performance Indicator Verification	
			<b>BI HS - TRIENNIAL HEAT SINK INSPECTION</b>		<b>2</b>
1, 2	10/24/2016	10/28/2016	IP 7111107T	Heat Sink Performance	

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

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

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
			<b>OL-RQ - BIENNIAL REQUAL PROGRAM INSPECTION</b>		<b>2</b>
1, 2	12/05/2016	12/09/2016	IP 711111B	Licensed Operator Requalification Program	
			<b>BI RP - RADIATION PROTECTION BASELINE INSPECTION</b>		<b>1</b>
1	02/27/2017	03/03/2017	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>ISI - INSERVICE INSPECTION UNIT 1</b>		<b>1</b>
1	03/06/2017	04/01/2017	IP 7111108P	Inservice Inspection Activities - PWR	
			<b>BI ENG - TRIENNIAL MODIFICATIONS/5059 INSPECTION</b>		<b>3</b>
1, 2	05/15/2017	06/02/2017	IP 7111117T	Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	
			<b>BI PI&amp;R - BIENNIAL PI&amp;R INSPECTION</b>		<b>1</b>
1, 2	07/10/2017	07/28/2017	IP 71152B	Problem Identification and Resolution	
			<b>BI EP - EP EXERCISE INSPECTION / PI VERIFICATION</b>		<b>5</b>
1, 2	07/24/2017	07/28/2017	IP 7111401	Exercise Evaluation	
1, 2	07/24/2017	07/28/2017	IP 7111406	Drill Evaluation	
1, 2	07/24/2017	07/28/2017	IP 7111408	Exercise Evaluation – Scenario Review	
1, 2	07/24/2017	07/28/2017	IP 71151	Performance Indicator Verification	
			<b>TI191 - FLEX/MITIGATING STRATEGIES/SFPI</b>		<b>4</b>
1	08/28/2017	09/01/2017	IP 2515/191	Inspection of Licensee's Responses to Order EA-12-049, EA-12-051 & EP Info Request March 12, 2012	
			<b>ISI - INSERVICE INSPECTION UNIT 2</b>		<b>1</b>
2	10/02/2017	10/23/2017	IP 7111108P	Inservice Inspection Activities - PWR	