

August 30, 2005

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: MID-CYCLE PERFORMANCE REVIEW AND INSPECTION PLAN - BYRON  
STATION

Dear Mr. Crane:

On August 9, 2005, the NRC staff completed its mid-cycle plant performance review of Byron Station, Units 1 and 2 for the first half of the calendar year 2005 assessment cycle. Our technical staff reviewed performance indicators (PIs) for the most recent quarter and inspection results over the previous 12 months. The purpose of this letter is to inform you of our assessment of your safety performance during this period and our plans for future inspections at your facility.

This performance review and enclosed inspection plan do not include physical protection information. A separate letter designated and marked as "Exempt from Public Disclosure in Accordance with 10 CFR 2.390" will include the physical protection review and resultant inspection plan.

Plant performance for the most recent quarter at Byron Station Units 1 and 2 was within the Licensee Response Column of the NRC's Action Matrix, based on all inspection findings being classified as having very low safety significance (Green) and all PIs indicating performance at a level requiring no additional NRC oversight (Green). Therefore, we plan to conduct only reactor oversight process (ROP) baseline inspections at your facility through March 31, 2007.

During this assessment period, the staff has identified a substantive cross-cutting issue in the area of human performance. Specifically, over the course of the assessment period, the inspectors identified ten Green findings/violations where personnel performance was not adequate. Eight of these findings were in the reactor safety strategic performance area (SPA); one in the initiating events cornerstone, five in the mitigating systems cornerstone, and two in the barrier integrity cornerstone, and two findings in the radiation safety SPA, both in the occupational radiation safety cornerstone. This human performance cross-cutting issue is attributed to inadequate performance by plant personnel. Therefore, we plan on conducting an annual inspection sample using Inspection Procedure 71152, "Identification and Resolution of Problems," to focus on human performance issues. This inspection sample will provide us further assessment on plant performance in the area of human performance and enable us to see if the plant is making improvements in this area.

The enclosed inspection plan details the inspections, less those related to physical protection scheduled through March 31, 2007. Significant inspections planned for this year include Temporary Instruction (TI) 2515/160 "Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors" (Unit 2), in September 2005, and a Modifications/50.59 Inspection in March 2006. The inspection plan is provided to minimize the resource impact on your staff and to allow for the resolution of any scheduling conflicts and personnel availability issues well in advance of inspector arrival onsite. Routine resident inspections are not listed due to their ongoing and continuous nature. The inspections in the last nine months of the inspection plan are tentative and may be revised at the end-of-cycle review meeting.

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 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).

If circumstances arise which cause us to change this inspection plan, we will contact you to discuss the change as soon as possible. Please contact me at (630) 829-9620 with any questions you may have regarding this letter or the inspection plan.

Sincerely,

*/RA/*

Richard A. Skokowski, Chief  
 Reactor Projects Branch 3  
 Division of Reactor Projects

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

Enclosure: Byron Station Inspection/ Activity Plan

See Attached Distribution

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**Byron**  
**Inspection / Activity Plan**  
**09/01/2005 - 03/31/2007**

Unit Number	Inspection Activity	Title	No. of Staff on Site	Planned Dates Start	Planned Dates End	Inspection Type
	<b>ISI - UNIT 2 ISI INSPECTION/TI-160</b>		<b>2</b>			
2	IP 2515/160	Pzr Pene Nozzles & Stm Space Piping Connections in U.S. PWRs [NRC Bulletin 2004-01]		09/26/2005	10/07/2005	Safety Issues
2	IP 7111108P	Inservice Inspection Activities - PWR		09/26/2005	10/07/2005	Baseline Inspections
	<b>OUTAGE - AC, ALARA, REMP</b>		<b>1</b>			
1,2	IP 7112101	Access Control to Radiologically Significant Areas		10/03/2005	10/14/2005	Baseline Inspections
1,2	IP 7112102	ALARA Planning and Controls		10/03/2005	10/14/2005	Baseline Inspections
1,2	IP 7112203	Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control P		10/03/2005	10/14/2005	Baseline Inspections
1,2	IP 71151	Performance Indicator Verification		10/03/2005	10/14/2005	Baseline Inspections
	<b>IP 71121 - POST-OTGE ACCESS CTRL &amp; ALARA &amp; EFFLUENT</b>		<b>1</b>			
1,2	IP 7112101	Access Control to Radiologically Significant Areas		01/30/2006	02/03/2006	Baseline Inspections
1,2	IP 7112102	ALARA Planning and Controls		01/30/2006	02/03/2006	Baseline Inspections
1,2	IP 7112201	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems		01/30/2006	02/03/2006	Baseline Inspections
	<b>M50.59 - MOD 50.59 INSPECTION</b>		<b>2</b>			
1,2	IP 7111117B	Permanent Plant Modifications		03/06/2006	03/17/2006	Baseline Inspections
1,2	IP 7111102	Evaluation of Changes, Tests, or Experiments		03/06/2006	03/24/2006	Baseline Inspections
	<b>IP 71114 - EP NON-EXERCISE BASELINE INSP</b>		<b>1</b>			
1,2	IP 7111402	Alert and Notification System Testing		03/13/2006	03/17/2006	Baseline Inspections
1,2	IP 7111403	Emergency Response Organization Augmentation Testing		03/13/2006	03/17/2006	Baseline Inspections
1,2	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies		03/13/2006	03/17/2006	Baseline Inspections
1,2	IP 71151	Performance Indicator Verification		03/13/2006	03/17/2006	Baseline Inspections
	<b>FY 2006 - BYRON INIT PREP 05/2006</b>		<b>3</b>			
1	W90122	OL - INITIAL EXAM - BYRON - MAY/JUN 2006		05/22/2006	05/26/2006	Not Applicable
	<b>ME - MAINTENANCE RULE INSPECTION</b>		<b>1</b>			
1	IP 7111112B	Maintenance Effectiveness		06/12/2006	06/16/2006	Baseline Inspections
	<b>FY 2006 - BYRON INIT EXAM 06/2006</b>		<b>3</b>			
1	W90122	OL - INITIAL EXAM - BYRON - MAY/JUN 2006		06/19/2006	06/30/2006	Not Applicable
	<b>71121.03 - RP INSTRUMENTATION</b>		<b>1</b>			
1,2	IP 7112103	Radiation Monitoring Instrumentation and Protective Equipment		07/17/2006	07/21/2006	Baseline Inspections
	<b>71111.11 - LIC OPERATOR REQUAL PROGRAM EVALUATION</b>		<b>2</b>			
1,2	IP 7111111B	Licensed Operator Requalification Program		08/14/2006	08/18/2006	Baseline Inspections
	<b>IP 71122 - RP LIQ/GAS EFFLUENT INSPECTION</b>		<b>1</b>			
1,2	IP 7112203	Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control P		08/21/2006	08/25/2006	Baseline Inspections
1,2	IP 71151	Performance Indicator Verification		08/21/2006	08/25/2006	Baseline Inspections
	<b>ISI - BYRON UNIT 1 ISI INSPECTION</b>		<b>1</b>			
1	IP 7111108P	Inservice Inspection Activities - PWR		09/11/2006	09/29/2006	Baseline Inspections

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

Byron  
Inspection / Activity Plan  
09/01/2005 - 03/31/2007

Unit Number	Inspection Activity	Title	No. of Staff on Site	Planned Dates Start	Planned Dates End	Inspection Type
	<b>71121.02 - ALARA PLANNING (OUTAGE)</b>		<b>1</b>			
1	IP 7112102	ALARA Planning and Controls		09/11/2006	09/15/2006	Baseline Inspections
	<b>SSDPC - SSDPC INSPECTION</b>		<b>5</b>			
1	IP 7111121	Safety System Design and Performance Capability		10/30/2006	12/01/2006	Baseline Inspections
	<b>71121.01 - ACCESS CONTROL</b>		<b>1</b>			
1, 2	IP 7112101	Access Control to Radiologically Significant Areas		03/12/2007	03/16/2007	Baseline Inspections

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