

March 2, 2006

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

SUBJECT: ANNUAL ASSESSMENT LETTER AND INSPECTION PLAN - BYRON  
STATION, UNITS 1 AND 2 (05000454/2006001; 05000455/2006001)

Dear Mr. Crane:

On February 9, 2006, the NRC staff completed its performance review of Byron Station, Units 1 and 2. Our technical staff reviewed performance indicators (PIs) for the most recent quarter and inspection results for the period from January 1 through December 31, 2005. 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.

Overall, Byron Station Units 1 and 2 operated in a manner that preserved public health and safety and fully met all cornerstone objectives. Plant performance for the most recent quarter, as well as for the first three quarters of the assessment cycle, 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 reactor oversight process baseline inspections at your facility.

In our mid-cycle assessment letter dated August 30, 2005, (ML052420448), we advised you of a substantive cross-cutting issue in the cross-cutting area of human performance involving weaknesses in personnel performance regarding procedure adherence. Since the mid-cycle assessment, there has been one new Green finding/violation where personnel performance was not adequate. Over the course of the assessment period, there was a total of six findings of very low safety significance where personnel performance was not adequate. Four of these findings were in the reactor safety strategic performance area (SPA): one in the initiating events cornerstone, one in the mitigating system cornerstone, and two in the barrier integrity cornerstone. The other two findings were in the radiation safety SPA, both in the occupational radiation safety cornerstone. We recognize that you have initiated actions to understand the reasons for these human performance errors; however, several of the related corrective actions were yet to be implemented as of the end of the assessment period. Therefore, there continues to be a substantive cross-cutting issue in the area of human performance.

Based on this substantive cross-cutting issue, we plan on conducting an annual inspection sample using Inspection Procedure 71152, "Identification and Resolution of Problems," to focus on human performance issues. The Inspection Procedure 71152 annual reviews will also be increased to the upper band to better assess personnel error reduction. In addition, the semiannual trend review of your corrective action program will assess your efforts to ensure effective reduction of personnel errors to avoid repeat events. These inspection samples will provide us with further assessment on plant performance in the area of human performance and enable us to determine whether the plant meets the criteria established in Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," Section 06.06i, for clearing this cross-cutting issue.

Furthermore, as a result of this substantive cross-cutting issue, we request that you provide an update of the issue during the upcoming annual public meeting. In addition, we request that you provide us a written response to the substantive cross-cutting issue raised in this letter, including your focused areas of concern, the status of the associated corrective action, and a current assessment of personnel performance. This response should be sent to the NRC within 30 days of the receipt of this letter.

Additionally, on October 27, 2005, the staff issued a Severity Level III Notice of Violation in accordance with the NRC's Enforcement Policy. The violation was associated with 27 ventilation/filtration-related technical specification surveillance tests that were falsified as complete by the system engineer. The failure to perform the Technical Specification-required surveillance tests and the falsification of these test records were determined to be a deliberate violation and were categorized collectively as a Severity Level III Violation (EA-05-0159).

The enclosed inspection plan details the inspections, less those related to physical protection scheduled through September 30, 2007. Significant inspections planned for this year include a Modifications/50.59 inspection in March 2006, and a Component Design Bases inspection in October 2006. The inspection plan is provided 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 mid-cycle review.

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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

C. Crane

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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

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See next page

C. Crane

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**Byron**  
**Inspection / Activity Plan**  
**03/01/2006 - 09/30/2007**

Unit Number	Inspection Activity	Title	No. of Staff on Site	Planned Dates		Inspection Type
				Start	End	
	<b>M50.59</b>	<b>- MOD 50.59 INSPECTION</b>	<b>2</b>			
1,2	IP 7111102	Evaluation of Changes, Tests, or Experiments		03/06/2006	03/24/2006	Baseline Inspections
1,2	IP 7111117B	Permanent Plant Modifications		03/06/2006	03/24/2006	Baseline Inspections
	<b>IP 71114</b>	<b>- 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</b>	<b>- BYRON INIT PREP 05/2006</b>	<b>2</b>			
1	W90122	OL - INITIAL EXAM - BYRON - MAY/JUN 2006		05/22/2006	05/26/2006	Not Applicable
	<b>ME</b>	<b>- MAINTENANCE RULE INSPECTION</b>	<b>1</b>			
1	IP 7111112B	Maintenance Effectiveness		06/12/2006	06/16/2006	Baseline Inspections
	<b>FY 2006</b>	<b>- 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</b>	<b>- 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>IP 71122</b>	<b>- RAD WASTE PROCESSING AND TRANSPORTATION</b>	<b>1</b>			
1,2	IP 7112202	Radioactive Material Processing and Transportation		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</b>	<b>- BYRON UNIT 1 ISI INSPECTION</b>	<b>1</b>			
1	IP 7111108P	Inservice Inspection Activities - PWR		09/11/2006	09/29/2006	Baseline Inspections
	<b>71121.02</b>	<b>- ALARA PLANNING (OUTAGE)</b>	<b>1</b>			
1	IP 7112102	ALARA Planning and Controls		09/11/2006	09/15/2006	Baseline Inspections
	<b>CDBI</b>	<b>- COMPONENT DESIGN BASES INSPECTION</b>	<b>6</b>			
1	IP 7111121	Component Design Bases Inspection		10/30/2006	12/01/2006	Baseline Inspections
	<b>71111.11</b>	<b>- LIC OPERATOR REQUAL PROGRAM EVALUATION</b>	<b>2</b>			
1,2	IP 7111111B	Licensed Operator Requalification Program		10/30/2006	11/03/2006	Baseline Inspections
	<b>71121.01</b>	<b>- ACCESS CONTROL</b>	<b>1</b>			
1,2	IP 7112101	Access Control to Radiologically Significant Areas		02/12/2007	02/16/2007	Baseline Inspections
	<b>HEATSINK</b>	<b>- HEAT SINK INSPECTION</b>	<b>1</b>			
1,2	IP 7111107B	Heat Sink Performance		02/26/2007	03/02/2007	Baseline Inspections
	<b>71121.02</b>	<b>- ALARA - OUTAGE</b>	<b>1</b>			
1,2	IP 7112102	ALARA Planning and Controls		04/02/2007	04/13/2007	Baseline Inspections