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

March 4, 2009

Mr. Charles G. Pardee
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville IL 60555

SUBJECT: ANNUAL ASSESSMENT LETTER – BYRON STATION, UNITS 1 AND 2, 05000454/2010001 AND 05000455/2010001

Dear Mr. Pardee:

On February 11, 2009, 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, 2008. 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 security information. A separate letter designated and marked as "Official Use Only--Security Information" will include the security cornerstone 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 at Byron Units 1 and 2 were within the Regulatory Response column of the NRC's Action Matrix, based on one inspection finding of low to moderate safety significance (White) within the Initiating Events cornerstone related to the degradation of the Essential Service Water Risers.

Shortly after the end of the 2008 assessment period, the NRC completed a supplemental inspection to review the actions taken to address the White finding. Since there was no finding of significance identified during the inspection, the White finding will be removed from consideration in the Action Matrix in the second quarter of 2009. In addition, the inspection finding regarding the inadvertent entry into an elevated risk condition for Byron Unit 2 in April 2008, which was discussed in the 2008 Mid-Cycle Performance Review letter dated September 2, 2008, was determined to be a licensee identified finding of very low safety significance (Green).

In the Mid-Cycle Performance Review letter, we also advised you of a substantive cross-cutting issue in the area of human performance. The substantive cross-cutting issue was the result of several findings that involved deficiencies in human performance throughout the station. In response to the identified cross-cutting issues, you provided us your Human Performance Improvement Plan and specific actions that you planned to take to correct the cross-cutting issue performance deficiencies.

Nevertheless, the staff has continued to identify issues with a cross-cutting theme of decision making in the aspect of H.1(b). There were 17 documented findings of very low (Green) and low to moderate (White) safety significance as well as a SL-IV violation with cross-cutting aspect in the area of Human Performance. Five of these findings in the Human Performance area shared the common cross-cutting aspect of failure to make conservative assumptions and demonstrating the proposed action is safe (H.1(b)). These findings were from more than one cornerstone (Mitigating Systems and Initiating Events). Moreover, your Human Performance Improvement Plan actions have not yet proven effective in substantially mitigating the cross-cutting theme. Therefore, this substantive cross-cutting issue will remain open until the NRC gains confidence in the effectiveness of your human performance corrective actions.

Due to the continuing problem in this area, please provide us a written response regarding the progress that was made to improve the human performance at Byron Station and also please provide a status update to us during the annual End-of-Cycle Public Meeting to be scheduled later.

Please provide your response within 30 days of the date of this annual assessment letter to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to Richard A. Skokowski, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; and the Resident Inspector Office at the Byron Station.

The enclosed inspection plan details the inspections, less those related to security scheduled through June 30, 2010. Please note that we plan on conducting two infrequently performed IPs: IP 60854.1, “Preoperational Testing of an Independent Spent Fuel Storage Facility Installations at Operating Plants,” and IP 60855.1, “Operation of an Independent Spent Fuel Storage Installation at Operating Plants,” this year at your Byron Station. The inspection plan is provided to allow for the resolution of any scheduling conflicts and personnel availability issues well in advance of our inspectors’ arrival onsite. Routine resident inspections are not listed due to their ongoing and continuous nature. The inspections in the last 9 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). 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 Richard A. Skokowski at 630-829-9620 with any questions you may have regarding this letter or the inspection plan.

Sincerely,

/RA/

Cynthia D. Pederson, Director
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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Sincerely,

Cynthia D. Pederson, Director
Division of Reactor Projects

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Letter to C. Pardee from R. Skokowski dated March 4, 2009

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cc w/encl: Site Vice President - Byron Station
Plant Manager - Byron Station
Manager Regulatory Assurance - Byron Station
Senior Vice President - Midwest Operations
Senior Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Director - Licensing and Regulatory Affairs
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Mayor of Byron
President, Village of Mt. Morris
Mayor of Rochelle
G. Mortensen, INPO

Byron
Inspection / Activity Plan
03/01/2009 - 06/30/2010

Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
		BI ENG	**- COMPONENT DESIGN BASES INSPECTION**	**6**
02/23/2009	03/27/2009	IP 7111121	Component Design Bases Inspection	
		ISFSI	**- ISFSI - CRANE, DRY RUN, INITIAL LOAD**	**1**
03/01/2009	08/31/2009	IP 60854.1	Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants	
03/01/2009	08/31/2009	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**2**
05/11/2009	05/15/2009	IP 7112103	Radiation Monitoring Instrumentation and Protective Equipment	
05/11/2009	05/22/2009	IP 2515/173	Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative	
05/11/2009	05/22/2009	IP 7112201	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems	
		BI EP	**- EP EXERCISE INSPECTION / PI VERIFICATION**	**4**
07/27/2009	07/31/2009	IP 2515/175	Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review	
07/27/2009	07/31/2009	IP 7111401	Exercise Evaluation	
07/27/2009	07/31/2009	IP 71151-EP01	Drill/Exercise Performance	
07/27/2009	07/31/2009	IP 71151-EP02	ERO Drill Participation	
07/27/2009	07/31/2009	IP 71151-EP03	Alert & Notification System	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**1**
08/03/2009	08/07/2009	IP 7112202	Radioactive Material Processing and Transportation	
08/03/2009	08/07/2009	IP 71151-BI01	Reactor Coolant System Activity	
08/03/2009	08/07/2009	IP 71151-OR01	Occupational Exposure Control Effectiveness	
08/03/2009	08/07/2009	IP 71151-PR01	RETS/ODCM Radiological Effluent	
		BI PI&R	**- BIENNIAL PI&R INSPECTION**	**6**
08/10/2009	08/28/2009	IP 71152B	Identification and Resolution of Problems	
		BI ENG	**- INSERVICE INSPECTION & TI-172 REVISION 1**	**1**
09/14/2009	09/30/2009	IP 2515/172	Reactor Coolant System Dissimiliar Metal Butt Welds	
09/14/2009	09/30/2009	IP 7111108P	Inservice Inspection Activities - PWR	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**1**
09/21/2009	09/25/2009	IP 7112101	Access Control to Radiologically Significant Areas	
09/21/2009	09/25/2009	IP 7112102	ALARA Planning and Controls	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**1**
11/16/2009	11/20/2009	IP 7112203	Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**1**
01/11/2010	01/15/2010	IP 7112101	Access Control to Radiologically Significant Areas	
01/11/2010	01/15/2010	IP 7112102	ALARA Planning and Controls	
		BI ENG	**- TRIENNIAL HEAT SINK INSPECTION**	**1**
01/11/2010	01/15/2010	IP 7111107T	Heat Sink Performance	

Byron
Inspection / Activity Plan
03/01/2009 - 06/30/2010

Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
		BI ENG	**- HEAD DROP ANALYSES**	**1**
01/25/2010	02/12/2010	IP 7111120	Refueling and Other Outage Activities	
		BI RP	**- RADIATION PROTECTION BASELINE INSPECTION**	**1**
04/12/2010	04/16/2010	IP 7112101	Access Control to Radiologically Significant Areas	
04/12/2010	04/16/2010	IP 7112102	ALARA Planning and Controls	
		BI ENG	**- ENGINEERGIN INSERVICE INSPECTION**	**1**
04/12/2010	05/07/2010	IP 2515/172	Reactor Coolant System Dissimiliar Metal Butt Welds	
04/12/2010	05/07/2010	IP 7111108P	Inservice Inspection Activities - PWR	

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