



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

September 2, 2008

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

**SUBJECT: MID-CYCLE PERFORMANCE REVIEW AND INSPECTION PLAN –  
BYRON STATION, UNITS 1 AND 2**

Dear Mr. Pardee:

On August 14, 2008, the NRC staff completed its performance review of Byron Station, Units 1 and 2, for the first half of the calendar year 2008 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 security information. A separate letter designated and marked as "Official Use Only – Security Related Information" will include the security cornerstone review and resultant inspection plan.

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. This White finding, from the first quarter of 2008, involved failure to take timely corrective actions for the degradation of the Essential Service Water (SX) risers. Additionally, another inspection finding regarding the inadvertent entry into an elevated risk condition for Unit 2 in April 2008 was preliminarily determined to be of low to moderate safety significance (White) for Unit 2 within the Mitigating Systems cornerstone.

We were notified by your staff that you will be ready in November 2008 for the NRC to conduct a supplemental inspection to review the actions taken to address the White finding regarding the degradation of the Essential Service Water (SX) risers. An appropriate inspection date is not yet scheduled and, therefore, is not included in the enclosure.

Additionally, the staff has identified a substantive cross-cutting issue in the area of human performance with a cross-cutting theme of decision making in the aspect of H.1 (b). There were 17 documented findings of low (Green) and low to moderate (White) safety significance

as well as SL-IV violation with cross cutting aspects in the area of Human Performance. Six of these findings in the Human Performance Decision-Making area shared the common cross-cutting aspect of failure to make conservative assumptions and demonstrating proposed action is safe (H.1 (b)). In addition, these findings were from more than one cornerstone (Mitigating Systems and Initiating Events). This substantive cross-cutting issue will remain open until the NRC gains confidence in the performance of your corrective action program to evaluate and correct human performance problems.

The enclosed inspection plan details the inspections, including baseline and other infrequently conducted inspections, less those related to security, scheduled through December 31, 2009. 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 end-of-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 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 Inspection/Activity Plan

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See next page

as well as SL-IV violation with cross cutting aspect in the area of Human Performance. Six of these findings in the Human Performance Decision-Making area shared the common cross-cutting aspect of failure to make conservative assumptions and demonstrating proposed action is safe (H.1 (b)). In addition, these findings were from more than one cornerstone (Mitigating Systems and Initiating Events). This substantive cross-cutting issue will remain open until the number of findings with the same cross-cutting aspect is reduced or when the NRC gains confidence in the performance of your corrective action program to evaluate and correct problems.

The enclosed inspection plan details the inspections, including baseline and other infrequently conducted inspections, less those related to security, scheduled through December 31, 2009. 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.

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Sincerely,

Cynthia D. Pederson, Director  
Division of Reactor Projects

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

Enclosure: Byron Inspection/Activity Plan

**DISTRIBUTION**

See next page **See Previous Concurrences**

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OFFICE	RIII		RIII		RIII				
NAME	RJones:ntp		RSkokowski		CPederson				
DATE	08/22/08		08/26/08		08/26/08				

**OFFICIAL RECORD COPY**

Letter to C. Pardee from Cynthia Pederson dated September 2, 2008

SUBJECT: ASSESSMENT LETTER - BYRON STATION, UNITS 1 AND 2

cc w/encl: Site Vice President - Byron Station  
Plant Manager - Byron Station  
Regulatory Assurance Manager - Byron Station  
Chief Operating Officer and Senior Vice President  
Senior Vice President - Midwest Operations  
Senior Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director - Licensing and Regulatory Affairs  
Manager Licensing - Braidwood, Byron, and LaSalle  
Associate General Counsel  
Document Control Desk - Licensing  
Assistant Attorney General  
J. Klinger, State Liaison Officer, State of Illinois  
P. Schmidt, State Liaison Officer, State of Wisconsin  
Chairman, Illinois Commerce Commission  
B. Quigley, Byron Station  
President, Village of Leaf River  
President, Village of Davis Junction  
President, Village of Stillman Valley  
Ogle County Board Chairman  
Ogle County Sheriff/EMA Coordinator  
EMA Coordinator, Winnebago County  
Winnebago County Board Chair  
Winnebago County Sheriff/ESDA  
Mayor of Oregon  
Mayor of Byron  
President, Village of Mt. Morris  
Mayor of Rochelle  
G. Mortensen, INPO

Letter to C. Pardee from Cynthia Pederson dated September 2, 2008

SUBJECT: ASSESSMENT LETTER - BYRON STATION, UNITS 1 AND 2

DISTRIBUTION:

RidsNrrDorLpl3-2

Tamara Bloomer

RidsNrrPMByron Resource

RidsNrrDirslpab Resource

James Caldwell

Mark Satorius

Kenneth O'Brien

Allan Barker

DRPIII

DRSIII

Patricia Buckley

Tammy Tomczak

[ROPreports@nrc.gov](mailto:ROPreports@nrc.gov) (inspection reports, final SDP letters, any letter with an IR number)

**Byron**  
**Inspection / Activity Plan**  
**09/01/2008 - 12/31/2009**

Inspection Activity	Title	No. of Staff on Site	Planned Dates Start	End	Inspection Type
<b>ISFSI</b>	<b>- ISFSI INSPECTION</b>	<b>1</b>			
IP 60853	On-Site Fabrication Of Components And Construction On An ISFSI		07/01/2008	09/30/2008	Other Routine
IP 60856	Review of 10 CFR 72.212(b) Evaluations		07/01/2008	09/30/2008	Other Routine
<b>BI OL</b>	<b>- BIENNIAL REQUAL. PROGRAM INSPECTION</b>	<b>2</b>			
IP 7111111B	Licensed Operator Requalification Program		09/22/2008	09/26/2008	Baseline Inspections
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>1</b>			
IP 7112101	Access Control to Radiologically Significant Areas		10/06/2008	10/10/2008	Baseline Inspections
IP 7112102	ALARA Planning and Controls		10/06/2008	10/10/2008	Baseline Inspections
<b>BI ENG</b>	<b>- ENGINEERING INSERVICE INSPECTION/ TI 172</b>	<b>2</b>			
IP 2515/172	Reactor Coolant System Dissimilar Metal Butt Welds		10/06/2008	10/31/2008	Generic Safety Inspectio
IP 7111108P	Inservice Inspection Activities - PWR		10/06/2008	10/31/2008	Baseline Inspections
<b>SP</b>	<b>- SUPPLEMENTAL INSPECTION 95001</b>	<b>2</b>			
IP 95001	Supplemental Inspection For One Or Two White Inputs In A Strategic Performance Area		01/20/2009	01/23/2009	Supplemental Program
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>1</b>			
IP 7112101	Access Control to Radiologically Significant Areas		01/26/2009	01/30/2009	Baseline Inspections
IP 7112102	ALARA Planning and Controls		01/26/2009	01/30/2009	Baseline Inspections
<b>BI ENG</b>	<b>- COMPONENT DESIGN BASES INSPECTION</b>	<b>6</b>			
IP 7111121	Component Design Bases Inspection		03/02/2009	04/03/2009	Baseline Inspections
<b>ISFSI</b>	<b>- ISFSI - CRANE, DRY RUN, INITIAL LOAD</b>	<b>1</b>			
IP 60854.1	Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants		03/01/2009	08/31/2009	Other Routine
IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants		03/01/2009	08/31/2009	Other Routine
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>2</b>			
IP 7112103	Radiation Monitoring Instrumentation and Protective Equipment		05/11/2009	05/15/2009	Baseline Inspections
IP 2515/173	Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative		05/11/2009	05/22/2009	Generic Safety Inspectio
IP 7112201	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems		05/11/2009	05/22/2009	Baseline Inspections
<b>BI EP</b>	<b>- EP EXERCISE INSPECTION / PI VERIFICATION</b>	<b>1</b>			
IP 7111401	Exercise Evaluation		07/27/2009	07/31/2009	EP Baseline Inspection
IP 71151-EP01	Drill/Exercise Performance		07/27/2009	07/31/2009	Baseline Inspections
IP 71151-EP02	ERO Drill Participation		07/27/2009	07/31/2009	Baseline Inspections
IP 71151-EP03	Alert & Notification System		07/27/2009	07/31/2009	Baseline Inspections
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>1</b>			
IP 7112202	Radioactive Material Processing and Transportation		08/03/2009	08/07/2009	Baseline Inspections
IP 71151-BI01	Reactor Coolant System Activity		08/03/2009	08/07/2009	Baseline Inspections
IP 71151-OR01	Occupational Exposure Control Effectiveness		08/03/2009	08/07/2009	Baseline Inspections
IP 71151-PR01	RETS/ODCM Radiological Effluent		08/03/2009	08/07/2009	Baseline Inspections

**Byron**  
**Inspection / Activity Plan**  
**09/01/2008 - 12/31/2009**

Inspection Activity	Title	No. of Staff on Site	Planned Dates Start      End		Inspection Type
<b>BI PI&amp;R</b>	<b>- BIENNIAL PI&amp;R INSPECTION</b>	<b>4</b>			
IP 71152B	Identification and Resolution of Problems		08/10/2009	08/28/2009	Baseline Inspections
<b>BI ENG</b>	<b>- ENGINEERING INSERVICE INSPECTION</b>	<b>1</b>			
IP 7111108P	Inservice Inspection Activities - PWR		09/14/2009	10/03/2009	Baseline Inspections
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>1</b>			
IP 7112101	Access Control to Radiologically Significant Areas		09/21/2009	09/25/2009	Baseline Inspections
IP 7112102	ALARA Planning and Controls		09/21/2009	09/25/2009	Baseline Inspections
<b>BI RP</b>	<b>- RADIATION PROTECTION BASELINE INSPECTION</b>	<b>1</b>			
IP 7112203	Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program		11/16/2009	11/20/2009	Baseline Inspections