

August 31, 2007

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 14, 2007, the NRC staff completed its performance review of Byron Station for the first half of the calendar year (CY) 2007 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 the Byron Station Unit 1 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 (ROP) baseline inspections at Unit 1.

Plant performance for the most recent quarter on Unit 2 was within the Regulatory Response column of the NRC's Action Matrix. This conclusion is based on the fact that the first submittal of Mitigating Systems Performance Index (MSPI) results for the Auxiliary Feedwater System was White during the second quarter of CY 2006 and has remained White since that time. We conducted the supplemental inspection (95001) during the week of February 5, 2007. This inspection concluded that, in general, the root cause analysis and the planned corrective actions were appropriate to address the concerns associated with the auxiliary feedwater system.

The enclosed inspection plan details the inspections, less those related to security, scheduled through December 31, 2008. Significant inspections planned include a Triennial Fire Protection inspection in November 2007, an Evaluation of Changes, Tests, or Experiments and Permanent Plant Modifications inspection in January 2008, and a Component Design Bases inspection in July 2008. 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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

The NRC is currently evaluating the scope and frequency of all the baseline inspection procedures. If the results of the evaluation, or any other circumstances, cause us to change the 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 by A. H. Hsia for/

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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Letter to C. Crane from C. Pederson dated August 31, 2007

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BYRON STATION

cc w/encl: Site Vice President - Byron Station
Plant Manager - Byron Station
Regulatory Assurance Manager - Byron Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Mid-West Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing
Manager Licensing - Braidwood and Byron
Senior Counsel, Nuclear
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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
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BYRON STATION

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Byron
Inspection / Activity Plan
09/01/2007 - 12/31/2008

Inspection Activity	Title	No. of Staff on Site	Planned Dates Start	End	Inspection Type
BI RP	- RADIATION PROTECTION BASELINE INSPECTION	1			
IP 7112201	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems		09/05/2007	09/06/2007	Baseline Inspections
IP 71151-BI01	Reactor Coolant System Activity		09/05/2007	09/06/2007	Baseline Inspections
IP 71151-OR01	Occupational Exposure Control Effectiveness		09/05/2007	09/06/2007	Baseline Inspections
IP 71151-PR01	RETS/ODCM Radiological Effluent		09/05/2007	09/06/2007	Baseline Inspections
BI RP	- RADIATION PROTECTION BASELINE INSPECTION	1			
IP 7112203	Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control P		11/05/2007	11/09/2007	Baseline Inspections
BI ENG	- TRIENNIAL FIRE PROTECTION INSPECTION	3			
IP 7111105T	Fire Protection [Triennial]		11/12/2007	11/30/2007	Baseline Inspections
BI ENG	- ENGINEERING MODIFICATIONS / 50.59 INSP.	2			
IP 7111102	Evaluation of Changes, Tests, or Experiments		01/14/2008	02/01/2008	Baseline Inspections
IP 7111117B	Permanent Plant Modifications		01/14/2008	02/01/2008	Baseline Inspections
OL EXAM	- BYRON INITIAL LIC ON-SITE VALIDATION	6			
W90180	BYRON - INITIAL EXAM - APRIL/MAY 2008		04/28/2008	05/02/2008	Not Applicable
BI RP	- RADIATION PROTECTION BASELINE INSPECTION	1			
IP 7112101	Access Control to Radiologically Significant Areas		03/24/2008	03/28/2008	Baseline Inspections
IP 7112102	ALARA Planning and Controls		03/24/2008	03/28/2008	Baseline Inspections
BI ENG	- ENGINEERING INSERVICE INSPECTION	1			
IP 7111108P	Inservice Inspection Activities - PWR		03/17/2008	04/11/2008	Baseline Inspections
BI EP	- EP ROUTINE INSPECTION / PI VERIFICATION	1			
IP 7111402	Alert and Notification System Testing		04/07/2008	04/11/2008	Baseline Inspections
IP 7111403	Emergency Response Organization Augmentation Testing		04/07/2008	04/11/2008	Baseline Inspections
IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies		04/07/2008	04/11/2008	Baseline Inspections
IP 71151-EP01	Drill/Exercise Performance		04/07/2008	04/11/2008	Baseline Inspections
IP 71151-EP02	ERO Drill Participation		04/07/2008	04/11/2008	Baseline Inspections
IP 71151-EP03	Alert & Notification System		04/07/2008	04/11/2008	Baseline Inspections
OL EXAM	- BYRON INITIAL LICENSE EXAM (05/19 - 30)	6			
W90122	OL - INITIAL EXAM - BYRON - MAY/JUN 2006		05/19/2008	05/30/2008	Not Applicable
ISFSI	- ISFSI INSPECTION	1			
IP 60856	Review of 10 CFR 72.212(b) Evaluations		07/01/2008	09/01/2008	Other Routine
BI ENG	- COMPONENT DESIGN BASES INSPECTION	5			
IP 7111121	Component Design Bases Inspection		07/21/2008	08/22/2008	Baseline Inspections
BI RP	- RADIATION PROTECTION BASELINE INSPECTION	1			
IP 7112103	Radiation Monitoring Instrumentation and Protective Equipment		08/11/2008	08/15/2008	Baseline Inspections
IP 71151-BI01	Reactor Coolant System Activity		08/11/2008	08/15/2008	Baseline Inspections

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IP 71151-PR01	RETS/ODCM Radiological Effluent		08/11/2008	08/15/2008	Baseline Inspections
BI RP - RADIATION PROTECTION BASELINE INSPECTION		1			
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
BI ENG - ENGINEERING INSERVICE INSPECTION		1			
IP 7111108P	Inservice Inspection Activities - PWR		10/06/2008	10/24/2008	Baseline Inspections
BI OL - BIENNIAL REQUAL. PROGRAM INSPECTION		2			
IP 7111111B	Licensed Operator Requalification Program		11/03/2008	11/07/2008	Baseline Inspections
BI ENG - BIENNIAL HEAT SINK INSPECTION		1			
IP 7111107B	Heat Sink Performance		12/01/2008	12/05/2008	Baseline Inspections