



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

March 3, 2010

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 10, 2010, 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, 2009. 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.

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). While plant performance for the last three quarters was in the Licensee Response column of the Action Matrix, there was a safety significant inspection finding in the Initiating Events Cornerstone classified as having low-to-moderate safety significance (White) that affected the first quarter of the assessment period. The White finding was closed in the first quarter of 2009 and both units returned to the Licensee Response column in the second quarter of 2009.

Therefore, the NRC plans to conduct reactor oversight process (ROP) baseline inspections at your Byron Station. The NRC also plans to conduct several special and infrequently performed inspection procedures (IPs), which include inspections related to the pre-operational testing and operation of the Independent Spent Fuel Storage Installation.

The enclosed inspection plan details the inspections, less those related to security, scheduled through June 30, 2011. Please note that we plan on conducting two infrequently performed IPs: IP 60854.1, "Preoperational Testing of an Independent Spent Fuel Storage Facility Installation 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/

Steven West, Director
Division of Reactor Projects

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

Enclosure: Byron Station Inspection/Activity Plan

cc w/encl: Distribution via ListServ

Byron
Inspection / Activity Plan
03/01/2010 - 06/30/2011

| Planned Dates | | Inspection Activity | Title | No. of Staff on Site |
|---------------|------------|---|--|----------------------|
| Start | End | | | |
| | | ISFSI - ISFSI INSPECTION | | 1 |
| 03/01/2010 | 06/30/2010 | IP 60854.1 | Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants | |
| 06/01/2010 | 08/31/2010 | IP 60855.1 | Operation of an Independent Spent Fuel Storage Installation at Operating Plants | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 04/12/2010 | 04/16/2010 | IP 71124.01 | Radiological Hazard Assessment and Exposure Controls | |
| 04/12/2010 | 04/16/2010 | IP 71124.02 | Occupational ALARA Planning and Controls | |
| | | BI ENG - ENGINEERING INSERVICE INSPECTION | | 1 |
| 04/19/2010 | 05/07/2010 | IP 2515/172 | Reactor Coolant System Dissimilar Metal Butt Welds | |
| 04/19/2010 | 05/07/2010 | IP 7111108P | Inservice Inspection Activities - PWR | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 07/12/2010 | 07/16/2010 | IP 71124.05 | Radiation Monitoring Instrumentation | |
| | | BI EP - EP ROUTINE INSPECTION / PI VERIFICATION | | 2 |
| 07/12/2010 | 07/16/2010 | IP 7111402 | Radiological Environmental Monitoring Program | |
| 07/12/2010 | 07/16/2010 | IP 7111403 | Emergency Response Organization Augmentation Testing | |
| 07/12/2010 | 07/16/2010 | IP 7111405 | Correction of Emergency Preparedness Weaknesses and Deficiencies | |
| 07/12/2010 | 07/16/2010 | IP 71151-EP01 | Drill/Exercise Performance | |
| 07/12/2010 | 07/16/2010 | IP 71151-EP02 | ERO Drill Participation | |
| 07/12/2010 | 07/16/2010 | IP 71151-EP03 | Alert & Notification System | |
| | | BI ENG - TRIENNIAL HEAT SINK INSPECTION | | 2 |
| 08/09/2010 | 08/13/2010 | IP 7111107T | Heat Sink Performance | |
| | | OL PREP - BYRON INIT PREP - SEPT. 2010 | | 3 |
| 09/06/2010 | 09/10/2010 | W90216 | OL - INITIAL EXAM - SEPT/OCT 2010 - BYRO | |
| | | OL EXAM - BYRON INIT EXAM - SEPT.-OCT. 2010 | | 3 |
| 09/27/2010 | 10/08/2010 | W90216 | OL - INITIAL EXAM - SEPT/OCT 2010 - BYRO | |
| | | HEAD - POLAR CRANE SINGLE FAILURE PROOF UPGRADE | | 1 |
| 10/05/2010 | 10/22/2010 | IP 7111120 | Refueling and Other Outage Activities | |
| | | BI ENG - TRIENNIAL FIRE PROTECTION INSPECTION | | 3 |
| 10/18/2010 | 11/05/2010 | IP 7111105T | Fire Protection [Triennial] | |
| | | BI ENG - TRIENNIAL FIRE INS INFO GATHERING TRIP | | 5 |
| 10/04/2010 | 10/08/2010 | IP 7111105T | Fire Protection [Triennial] | |
| | | BI OL - LIC. OPERATOR REQUAL. PROGRAM EVALUATION | | 2 |
| 10/25/2010 | 10/29/2010 | IP 7111111B | Licensed Operator Requalification Program | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 11/29/2010 | 12/03/2010 | IP 2515/179 | Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in NSTS | |

Byron
Inspection / Activity Plan
03/01/2010 - 06/30/2011

| Planned Dates | | Inspection Activity | Title | No. of Staff on Site |
|---------------|------------|---|---|----------------------|
| Start | End | | | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 11/29/2010 | 12/03/2010 | IP 71124.01 | Radiological Hazard Assessment and Exposure Controls | |
| 11/29/2010 | 12/03/2010 | IP 71124.06 | Radioactive Gaseous and Liquid Effluent Treatment | |
| 11/29/2010 | 12/03/2010 | IP 71151-BI01 | Reactor Coolant System Activity | |
| 11/29/2010 | 12/03/2010 | IP 71151-OR01 | Occupational Exposure Control Effectiveness | |
| 11/29/2010 | 12/03/2010 | IP 71151-PR01 | RETS/ODCM Radiological Effluent | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 01/10/2011 | 01/14/2011 | IP 71124.03 | In-Plant Airborne Radioactivity Control and Mitigation | |
| 01/10/2011 | 01/14/2011 | IP 71124.04 | Occupational Dose Assessment | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 03/14/2011 | 03/18/2011 | IP 71124.01 | Radiological Hazard Assessment and Exposure Controls | |
| 03/14/2011 | 03/18/2011 | IP 71124.02 | Occupational ALARA Planning and Controls | |
| | | BI ENG - ENGINEERING INSERVICE INSPECTION - U1 | | 1 |
| 03/14/2011 | 04/09/2011 | IP 7111108P | Inservice Inspection Activities - PWR | |
| | | BI RP - RADIATION PROTECTION BASELINE INSPECTION | | 1 |
| 04/11/2011 | 04/15/2011 | IP 71124.01 | Radiological Hazard Assessment and Exposure Controls | |
| 04/11/2011 | 04/15/2011 | IP 71124.07 | Public Radiation Safety | |
| | | BI ENG - TRIENNIAL ENGINEERING PERM MODS/50.59 | | 3 |
| 05/09/2011 | 05/27/2011 | IP 7111117T | Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications | |

C. Pardee

-2-

The enclosed inspection plan details the inspections, less those related to security, scheduled through June 30, 2011. Please note that we plan on conducting two infrequently performed IPs: IP 60854.1, "Preoperational Testing of an Independent Spent Fuel Storage Facility Installation 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.

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Steven West, Director
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|--------|---------------------------|--|----------|--|--|--|--|
| OFFICE | RIII | | RIII | | | | |
| NAME | RSkokowski:dtp *RN for | | SWest | | | | |
| DATE | 02/25/10 | | 03/03/10 | | | | |

OFFICIAL RECORD COPY

Letter to C. Pardee from S. West dated March 3, 2010.

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

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