

August 31, 2006

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 -
BRAIDWOOD STATION

Dear Mr. Crane:

On August 7, 2006, the NRC staff completed its performance review of the Braidwood Station for the first half of the calendar year 2006 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 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.

Plant performance for the most recent quarter was within the Regulatory Response column of the NRC's Action Matrix based on one inspection finding being classified as having low to moderate significance (White) in the public radiation safety cornerstone. The White finding and related violation were finalized in a letter dated June 29, 2006, and were related to the failure to perform adequate and timely radiological evaluations following historical unplanned radioactive leaks from the station's blowdown line vacuum breakers. This failure impacted the station's ability to assess the environmental impact from the releases, to mitigate the releases, properly account for public impact, and adequately control licensed material. A supplemental inspection using Inspection Procedure 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," is tentatively planned to be conducted in the fourth quarter of 2006, pending the completion of your planned corrective actions.

The enclosed inspection plan details the inspections, less those related to physical protection scheduled through March 31, 2008. Significant inspections planned include a "Unit 2 ISI and Temporary Instruction 150 Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection" in October 2006, a "Problem Identification and Resolution Inspection" in November 2006, and a "Modifications/50.59 Inspection" in January 2007. In addition, the resident inspectors plan to perform Temporary Inspections 2515/169, "Mitigating Systems Performance Index (MSPI) Verification," in September 2006, and 2515/166, "Pressurized

Water Reactor Containment Sump Blockage,” to be completed on Unit 1 in October 2007, and Unit 2 in spring 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 9 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 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).

If circumstances arise which 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/

Mark A. Satorius, Director
Division of Reactor Projects

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure:
Braidwood Station Inspection/Activity Plan

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| NAME | RSkokowski:dtp | | MSatorius | | | | |
| DATE | 08/30/06 | | 08/31/06 | | | | |

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cc w/encl: Site Vice President - Braidwood Station
Plant Manager - Braidwood Station
Regulatory Assurance Manager - Braidwood Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing
Manager Licensing - Braidwood and Byron
Senior Counsel, Nuclear, Mid-West Regional
Operating Group
Document Control Desk - Licensing
Assistant Attorney General
Illinois Emergency Management Agency
State Liaison Officer
Chairman, Illinois Commerce Commission
Will County Executive
Will County Sheriff
Director, Will County Emergency Management
Agency
Mayor of Joliet
City Manager of Joliet
Kendall County Board Chairman
Kendall County Sheriff
Grundy County Board Chairman
Grundy County Sheriff
Grundy County Emergency Management Agency
Mayor of Morris
Minooka Village President
Mayor of Coal City
Mayor of Carbon Hill
Mayor of Diamond
Mayor of Braidwood
Mayor of Wilmington
Channahon Village President
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Braidwood
Inspection / Activity Plan
09/01/2006 - 03/31/2008

| Unit Number | Inspection Activity | Title | No. of Staff on Site | Planned Dates Start | Planned Dates End | Inspection Type |
|-------------|---------------------|---|----------------------|---------------------|-------------------|----------------------|
| | ISI | - BRAIDWOOD UNIT 2 ISI & TI-150 INSPECTION | 2 | | | |
| 2 | IP 2515/150 | Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles (NRC ORDER EA-03- | | 10/16/2006 | 11/03/2006 | Safety Issues |
| 2 | IP 7111108P | Inservice Inspection Activities - PWR | | 10/16/2006 | 11/03/2006 | Baseline Inspections |
| | OUTAGE | - ACCESS CONTROL, ALARA | 1 | | | |
| 1,2 | IP 7112101 | Access Control to Radiologically Significant Areas | | 10/16/2006 | 10/20/2006 | Baseline Inspections |
| 1,2 | IP 7112102 | ALARA Planning and Controls | | 10/16/2006 | 10/20/2006 | Baseline Inspections |
| 1,2 | IP 71151 | Performance Indicator Verification | | 10/16/2006 | 10/20/2006 | Baseline Inspections |
| | H/S | - HEAT SINK INSPECTION | 1 | | | |
| 1,2 | IP 7111107B | Heat Sink Performance | | 11/06/2006 | 11/11/2006 | Baseline Inspections |
| | PI&R | - PROBLEM IDENTIFICATION AND RESOLUTION | 3 | | | |
| 1,2 | IP 71152B | Identification and Resolution of Problems | | 11/27/2006 | 12/15/2006 | Baseline Inspections |
| | MOD5059 | - MODIFICATIONS/50.59 INSPECTION | 2 | | | |
| 1,2 | IP 7111102 | Evaluation of Changes, Tests, or Experiments | | 01/08/2007 | 01/26/2007 | Baseline Inspections |
| 1,2 | IP 7111117B | Permanent Plant Modifications | | 01/08/2007 | 01/26/2007 | Baseline Inspections |
| | EP BI | - BASELINE EP INSPECTION | 1 | | | |
| 1,2 | IP 7111402 | Alert and Notification System Testing | | 01/22/2007 | 01/26/2007 | Baseline Inspections |
| 1,2 | IP 7111403 | Emergency Response Organization Augmentation Testing | | 01/22/2007 | 01/26/2007 | Baseline Inspections |
| 1,2 | IP 7111405 | Correction of Emergency Preparedness Weaknesses and Deficiencies | | 01/22/2007 | 01/26/2007 | Baseline Inspections |
| 1,2 | IP 71151 | Performance Indicator Verification | | 01/22/2007 | 01/26/2007 | Baseline Inspections |
| | BI | - MATERIAL PROCESSING AND TRANSPORTATION | 1 | | | |
| 1,2 | IP 7112202 | Radioactive Material Processing and Transportation | | 02/12/2007 | 02/16/2007 | Baseline Inspections |
| | 71122.01 | - RAD EFFLUENTS | 1 | | | |
| 1,2 | IP 7112201 | Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems | | 04/30/2007 | 05/04/2007 | Baseline Inspections |
| 1,2 | IP 71151 | Performance Indicator Verification | | 04/30/2007 | 05/04/2007 | Baseline Inspections |
| | 71121.01 | - ACCESS CONTROL | 2 | | | |
| 1,2 | IP 7112101 | Access Control to Radiologically Significant Areas | | 06/11/2007 | 06/15/2007 | Baseline Inspections |
| | CDBI | - COMPONENT DESIGN BASES INSPECTION | 5 | | | |
| 1,2 | IP 7111121 | Component Design Bases Inspection | | 07/23/2007 | 08/24/2007 | Baseline Inspections |
| | 71111.11 | - LIC OPERATOR REQUAL PROGRAM EVALUATION | 2 | | | |
| 1,2 | IP 7111111B | Licensed Operator Requalification Program | | 08/27/2007 | 08/31/2007 | Baseline Inspections |
| | 71122.03 | - REMP AND RAM CONTROL | 1 | | | |
| 1,2 | IP 7112203 | Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control P | | 08/27/2007 | 08/31/2007 | Baseline Inspections |
| | 71121.02 | - ALARA - OUTAGE | 1 | | | |
| 1,2 | IP 7112102 | ALARA Planning and Controls | | 10/08/2007 | 10/19/2007 | Baseline Inspections |

This report does not include INPO and OUTAGE activities.
This report shows only on-site and announced inspection procedures.

Braidwood
Inspection / Activity Plan
09/01/2006 - 03/31/2008

| Unit Number | Inspection Activity | Title | No. of Staff on Site | Planned Dates Start | Planned Dates End | Inspection Type |
|-------------|---------------------|--|----------------------|---------------------|-------------------|----------------------|
| | ISI | - ISI BASELINE INSPECTION | 1 | | | |
| 1 | IP 7111108P | Inservice Inspection Activities - PWR | | 10/08/2007 | 10/26/2007 | Baseline Inspections |
| | FY 2008 | - BRAIDWOOD INIT PREP 11/2007 | 2 | | | |
| 1 | W90172 | OL - INITIAL EXAM - BRAIDWOOD - NOV/DEC 2007 | | 11/12/2007 | 11/16/2007 | Not Applicable |
| | MAINRULE | - MAINTENANCE RULE INSPECTION | 2 | | | |
| 1, 2 | IP 7111112B | Maintenance Effectiveness | | 11/26/2007 | 11/30/2007 | Baseline Inspections |
| | FY 2008 | - BRAIDWOOD INIT EXAM 12/2007 | 2 | | | |
| 1 | W90172 | OL - INITIAL EXAM - BRAIDWOOD - NOV/DEC 2007 | | 12/03/2007 | 12/14/2007 | Not Applicable |
| | HEATSINK | - HEAT SINK INSPECTION | 1 | | | |
| 1, 2 | IP 7111107B | Heat Sink Performance | | 02/04/2008 | 02/08/2008 | Baseline Inspections |
| | BI | - OUTAGE ACCESS CONTROL AND ALARA | 1 | | | |
| 1 | IP 7112101 | Access Control to Radiologically Significant Areas | | 03/17/2008 | 03/21/2008 | Baseline Inspections |
| 1 | IP 7112102 | ALARA Planning and Controls | | 03/17/2008 | 03/21/2008 | Baseline Inspections |