

November 15, 2004

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION - INFORMATION REQUEST FOR AN NRC BIENNIAL
SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY (SSDPC)
BASELINE INSPECTION 05000454/2005002; 05000455/2005002

Dear Mr. Crane:

On January 24, 2005, the NRC will begin a biennial Safety System Design and Performance Capability (SSDPC) baseline inspection at the Byron Station. This inspection will be performed in accordance with NRC baseline Inspection Procedure 71111.21. The systems to be reviewed during this baseline inspection are the Essential Service Water System (SX) and the Vital 4160 Volt Power System.

The schedule for the inspection is as follows:

- Information gathering visit - January 10, 2005; and
- On-site inspection activity - January 24 through February 11, 2005.

The purpose of the information gathering visit is: (1) to obtain and preliminary review information and documentation needed to support the inspection; (2) to meet with the assigned technical and regulatory service contacts; and (3) to arrange administrative details such as office space, availability of knowledgeable office personnel, and to ensure unescorted site access privileges.

Experience has shown that these baseline design inspections are extremely resource intensive, both for the NRC inspectors and the licensee staff. In order to minimize the inspection impact on the site and to ensure a productive inspection for both parties, we have enclosed a request for documents needed for the inspection. These documents have been divided into three groups. The first group is necessary to ensure that the inspection team is adequately prepared for the inspection. This information should be available to the Regional Office no later than January 13, 2005. The inspection team will review this information and, by January 19, 2005, will request specific items that should be available for review when the team arrives on site. The second group of requested documents contains additional items that the team will review, or need access to, during the inspection. Please have this information available by the first day of the on-site inspection, January 24, 2005. The third group lists information necessary to aid the inspection team in tracking issues identified as a result of the inspection. It is requested that this information be provided to the lead inspector as the information is generated during the

inspection. It is important that these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

The lead inspector for this inspection is Hershell Walker. If there are questions about the inspection or the material requested, please contact the lead inspector at (630) 829-9728 or via e-mail at haw@nrc.gov.

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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Julio Lara, Chief
Electrical Engineering Branch
Division of Reactor Safety

Docket Nos. 50-454; 50-455
License Nos. DPR-29; DPR-30

Enclosure: Safety System Design and Performance Capability Inspection (SSDPC)
Document Request

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
Document Control Desk - Licensing
Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer, State of Illinois
State Liaison Officer, State of Wisconsin
Chairman, Illinois Commerce Commission

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Enclosure: Safety System Design and Performance Capability Inspection (SSDPC)
Document Request

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
Document Control Desk - Licensing
Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer, State of Illinois
State Liaison Officer, State of Wisconsin
Chairman, Illinois Commerce Commission

See Attached Distribution

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INITIAL DOCUMENT REQUEST
(Sent to Licensee on 11/15/2004)

**SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY INSPECTION (SSDPC)
DOCUMENT REQUEST**

Inspection Report: 50-454/2005002; 50-455/2005002

Inspection Dates: January 24 through February 11, 2005

Inspection Procedures: IP 71111.21, "Safety System Design and Performance Capability"

Lead Inspector: Hershell A. (Al) Walker, Team Leader
(630) 829-9728

I. Information Requested for In-Office Preparation Week

The following information is requested by January 13, 2005, or sooner, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The team will select specific items from the information requested below and submit a list to your staff by January 19, 2005. We request that the specific items selected from the lists be available and ready for review on the first day of inspection. All requested information should cover the time frame from the last SSDI inspection exit (May 23, 2003) to the present. If you have any questions regarding this information, please call the team leader as soon as possible. All information should be sent **electronically** if at all possible to (haw@nrc.gov).

The items requested below apply **only** to the selected system(s):

Essential Service Water System
Vital 4.16 kV power

- (1) One copy of the system(s) description, design basis document(s), related training manual(s) and system health report(s).
- (2) One copy of the normal and abnormal operating procedures.
- (3) Three half-size (18" x 24") copies of the piping and instrument drawings (P&IDs).
- (4) Two half-size (18" x 24") copies of the electrical schematics, single-line and key diagrams.
- (5) Name and phone numbers of the technical contact, a regulatory contact, and the design and system engineer(s).
- (6) Current management and engineering organizational chart.
- (7) Specifically identify (by number) the latest calculation(s) that address each of the following areas. If a calculation cannot be identified for a particular area, please

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provide an explanation of why a calculation is not necessary.

- Breaker and fuse coordination calculations;
 - Diesel loading calculations;
 - Instrument uncertainty calculations;
 - Room temperature environmental qualification calculations for major equipment;
 - Relay setting calculations
 - Setpoint calculations for all technical specification or emergency operation procedure equipment;
 - Time delay calculations (for any component incorporating time delay features);
 - Undervoltage and degraded voltage calculations;
 - Voltage drop calculations for all major electrical components (motors, MOVs);
 - Check valve leakage criteria calculations;
 - Design basis (flow rates, levels, pressures, temperatures) confirmation calculations (including NSSS calculations);
 - Heat exchanger calculations;
 - NPSH and total dynamic head calculations;
 - Operability determination support calculations;
 - Pressure transient/water hammer evaluations;
 - Pump minimum recirculation flow calculations;
 - Relief valve sizing calculations;
 - Tank over-pressurization calculations; and
 - Tank sizing calculations.
- (8) List of all major modifications or set-point changes made to the selected system(s) since pre-operational testing. Major changes are those that significantly affected the way the system operated, for example, replacement of major components, modification to electrical control logic, etc. Please include the number and title, the modification purpose (description), the date, the status (whether the calculation is active, canceled, superceded or under revision) and a technical contact. Spell out abbreviations, or acronyms and give word titles for any numbers. Note if any of the modifications required prior NRC approval. One way to provide this information is by providing the first sheet of the modification (not the cover letter).

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- (9) List of open temporary modifications, if any.
- (10) List of the selected system(s) electrical equipment/components that have been removed from the licensee's EQ Program, if any.
- (11) List of condition reports (corrective action documents) that are in one of the following categories. For each condition report, besides the number and title, clearly designate the status (open/closed), the importance ranking, the date initiated, the date closed (if applicable), the status of corrective actions, and a technical contact. (Note: It is not necessary to provide a separate list for each category.)
 - Any condition report initiated more than two years prior to the inspection that is still open;
 - Any condition report (open or closed) initiated in the last two years that required an apparent or root cause analysis (i.e., Category 1 or 2 condition reports);
 - Any condition report (open or closed) initiated in the last two years that required an operability determination (include determination); and
 - Any condition report (open or closed) initiated in the last two years that related to problems with the quality of engineering (not system specific).
- (12) The corrective maintenance history of major components for the last two years.
- (13) List of operability evaluations as far back as retrievable. Include both those currently relied upon and those that were previously relied upon for operability.
- (14) List of Engineering Related Operator Workarounds.

II. Information Requested to be Available on First Day of Inspection (January 24, 2005)

We request that the following information be available to the team once they arrive onsite. Some documents, such as the Updated Final Safety Analysis Report (UFSAR) or the Technical Specification (TS), do not need to be solely available to the team (i.e., they can be located in a reference library) as long as the team has ready access to them. However, they should be located prior to the inspection team arriving on site such that if the team requests any of these documents they are available within a short time (i.e., less than two hours).

- (1) Copies of the calculations indicated by subject area in item I.7, excluding data files. Please review the calculations and also provide copies of referenced material (such as drawings, engineering requests, vendor letters).
- (2) Copies of all MAJOR design changes, modifications and set-point changes as indicated in item I.8. For each modification, as a minimum provide the purpose, the 10 CFR 50.59 evaluation or screening, and the completed post-modification test.

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- (3) Copies of any open temporary modifications.
- (4) Copies of all condition reports (corrective action documents) indicated in item I.12, including any associated root/apparent cause analyses and operability determinations.
- (5) An Index of the surveillances for ALL Technical Specification equipment completed during the last two years.
- (6) List of all maintenance, surveillance, and annunciator response procedures related to the systems. Include name as well as number. For the surveillance procedures, provide a cross-reference which shows how each technical specification requirement is being met.
- (7) One copy of each major equipment drawing (valves, pumps, tanks, strainers), including pump head curves (1/2 size, 18" x 24").
- (8) Copies of isometric drawings for major flow paths (1/2 size).
- (9) Copies of elementary diagrams (1/2 size).
- (10) Index of wiring diagrams (1/2 size).
- (11) Copies of loop drawings (1/2 size).
- (12) Copies of P&IDs referred to on the system P&ID (1/2 size).
- (13) Copies of instrumentation and control logic drawings (1/2 size).
- (14) Maintenance history of major components for the last two years.
- (15) A copy of any self-assessments and associated corrective action documents generated in preparation for the inspection.
- (16) One copy of the current plant organization charts.
- (17) Reference materials (make available if needed):
 - Equipment qualification binders;
 - General set of plant drawings;
 - IPE/PRA report;
 - Pre-operational tests, including documents showing resolution of deficiencies;
 - Procurement documents for major components in each system (verify retrievable);
 - Relevant operating experience information (such as vendor letters or utility experience);
 - Standards used in system design (such as IEEE, ASME, TEMA);
 - System procedures;

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- Technical Specifications;
 - Technical Data Book;
 - Updated Final Safety Analysis Report; and
 - Vendor manuals.
- (18) Copies of selected operability evaluations and plans for restoring operability, if applicable. Include contact person for each item. The team will select specific documents to review approximately one week prior to the inspection.
- (19) Copies of selected work-around evaluations and plans for resolution. Include contact person for each item. The team will select specific documents to review approximately one week prior to the inspection.

III. Information Requested to be provided throughout the inspection

- (1) Copies of any corrective action documents generated as a result of the team's questions or queries during this inspection.
- (2) Copies of the list of questions submitted by the team members and the status/resolution of the information requested (provide daily during the inspection to each team member).

If you have questions regarding the information requested, please contact the team leader.