



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

February 14, 2012

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville IL 60555

**SUBJECT: BYRON STATION, UNITS 1 AND 2 REQUEST FOR INFORMATION FOR AN
NRC TRIENNIAL BASELINE COMPONENT DESIGN BASES INSPECTION
(CDBI) INSPECTION REPORT 05000454/2012007(DRS);
05000455/2012007(DRS)**

Dear Mr. Pacilio:

On May 14, 2012, the Nuclear Regulatory Commission (NRC) will begin a triennial baseline Component Design Bases Inspection (CDBI) at Byron Station, Units 1 and 2. A team of six inspectors will perform this 3-week inspection. This inspection will be performed in accordance with NRC Baseline Inspection Procedure (IP) 71111.21.

The CDBI focuses on the design, maintenance, and operation of risk significant components associated with one or more accident scenario. The components to be reviewed during this baseline inspection will be identified during the in-office preparation week that occurs prior to the first on-site inspection week. In addition, operating experience issues, associated with the component samples, will also be selected for review.

The inspection will include three weeks on-site. The inspection team will consist of six NRC inspectors, of which five will focus on engineering/maintenance and one on operations. The current inspection schedule is as follows:

- On-site weeks: May 14 – 18, 2012;
May 29, through June 1, 2012; and
June 11 – 15, 2012.

The team will be preparing for the inspection, mainly during the week of May 7, 2012, as discussed in the attached enclosure. A Region III Senior Reactor Analyst may accompany the inspection team during the week of May 14, 2012, to review probabilistic risk-assessment data, and assist in identifying risk significant components and/or specific component functions, which will be reviewed during the inspection.

Experience with previous baseline design inspections of similar depth and length has shown that this type of inspection is 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 information needed for the inspection.

It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the on-site portions of

the inspection. Insofar as possible, this information should be provided electronically to the lead inspector. The information request has been divided into three groups:

- The first group lists information necessary for our initial inspection scoping activities. This information should be provided to the lead inspector no later than April 2, 2012. By April 17, 2012, the lead inspector will communicate the initial selected set of approximately 20 components.
- The second group of documents requested is those items needed to support our in-office preparation activities. This set of documents, including the calculations associated with the initial selected components, should be provided to the lead inspector at the Regional Office no later than May 1, 2012. During the in-office preparation activities, the team may identify additional information needed to support the inspection.
- The last group includes the additional information above, as well as plant specific reference material. This information should be available to the team on-site on May 14, 2012. It is also requested that corrective action documents and/or questions developed during the inspection be provided to the lead inspector as the documents are generated.

The lead inspector for this inspection is Andrew Dunlop. If there are any questions about the inspection or the material requested in the enclosure, please contact the lead inspector at (630) 829-9726 or via e-mail at andrew.dunlop@nrc.gov.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number."

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).

Sincerely,

/RA/

Ann Marie Stone, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos. 50-454; 50-455

License Nos. NPF-37; NPF-66

Enclosure: Component Design Bases Inspection (CDBI) Information Request

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**COMPONENT DESIGN BASES INSPECTION (CDBI)
REQUEST FOR INFORMATION**

Inspection Report: 05000454/2012007(DRS); 05000455/2012007(DRS)

Inspection Dates: May 14 – 18, 2012; May 29, 2012, through June 1, 2012;
and June 11 – 15, 2012.

Inspection Procedure: Component Design Bases Inspection, IP 71111.21

Lead Inspector: Andrew Dunlop, Lead Inspector
(630) 829-9726
andrew.dunlop@nrc.gov

A. *Information Requested Prior to the On-Site Information Gathering/Inspection Week.*

The following information is requested by April 2, 2012, or sooner, to facilitate inspection preparation. If you have any questions regarding this information, please call the team leader as soon as possible. (Please provide the information electronically in “pdf” files, Excel, or other searchable formats, preferably on some portable electronic media (e.g., CDROM, DVD, flash drive, etc.). The portable electronic media should contain descriptive names, and be indexed and hyperlinked to facilitate ease of use. Information in “lists” should contain enough information to be easily understood by someone who has knowledge of light water reactor technology).

1. Risk ranking of top 250 components from your site specific probabilistic safety analysis (PSA) sorted by Risk-Achievement Worth (RAW). Include values for Birnbaum Importance, Risk-Reduction Worth (RRW), and Fussell-Veseley (FV) (as applicable).
2. Risk ranking of top 100 containment-related components from your site specific PSA sorted by Large Early Release Frequency (LERF).
3. Provide a list of the top 200 cut-sets from your PSA.
4. Provide a list of the top 100 cut-sets for each initiator modeled in the PSA that contributes more than 5 percent to the baseline plant core damage frequency (CDF).
5. Copies of PSA “system notebooks” and latest PSA summary document.
6. List of time critical operator actions. Identify those actions that do not have job performance measures (JPMs).
7. Provide copies of the emergency operating procedures (EOPs).

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REQUEST FOR INFORMATION**

8. If you have an External Events or Fire PSA Model, provide the information requested in Items A.1 and A.2 for external events and fire. Provide narrative description of each coded event (including fire, flood zone description).
9. Electronic copy of the site IPEEE, if available.
10. Any pre-existing evaluation or list of components and associated calculations with low design margins, (i.e., pumps closest to the design limit for flow or pressure, diesel generator close to design required output, heat exchangers close to rated design heat removal etc.).
11. List of available design (setup) margins in both the open and closed direction (identify safety-related direction) for valves in the motor-operated valve (MOV) and air-operated valve (AOV) programs. Identify the basis for how the margin was determined.
12. List of high risk Maintenance Rule systems/components based on engineering or expert panel judgment (i.e., those systems/components not identified in the PRA).
13. Structures, systems, and components (SSCs) in the Maintenance Rule (a)(1) category for the last three years.
14. Site top ten issues list (if applicable).
15. A list of operating experience evaluations for the last three years.
16. Information of any common cause failure of components experienced in the last five years at your facility.
17. List of Root Cause Evaluations associated with component failures or design issues initiated/completed in the last five years.
18. List of open operability evaluations.
19. Current management and engineering organizational chart.
20. Electronic copies of Updated Final Safety Analysis Report, Technical Specifications, Technical Specifications Bases, and Technical Requirements Manual.
21. Major one line electrical drawings (ac and dc) and key diagrams (paper copies).
22. Electronic copy of P&IDs (if available).

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REQUEST FOR INFORMATION**

B. Information Requested (for the approx. 20 selected components) to be Available by May 1, 2012, (will be Reviewed by the Team in the Regional Office During the Week of May 7, 2012).

This information should be separated for each selected component, especially if provided electronically (e.g., folder with component name that includes calculations, condition reports, maintenance history, etc.).

1. List of condition reports (corrective action documents) associated with each of the selected components for the last four years.
2. The maintenance history (corrective, preventive, and elective) associated with each of the selected components for the last 10 years. Identify frequency of preventive maintenance activities.
3. Copies of calculations associated with each of the selected components (if not previously provided), excluding data files. Please review the calculations and also provide copies of important referenced material (such as drawings, engineering requests, and vendor letters).
4. System Health Reports, System Descriptions, Design Basis Documents, and/or Training Lesson Plans that are associated with each of the selected components.
5. A list of modifications, including equivalency evaluations and setpoint changes, associated with each of the selected components. This list should include a descriptive paragraph on the purpose of the modification. Please ensure this list only includes design completed (not canceled) modifications.
6. Copies of operability evaluations (open/closed for last three years) associated with each of the selected components and plans for restoring operability, if applicable.
7. Copies of selected operator work-around evaluations associated with each of the selected components and plans for resolution, if applicable.
8. Copies of any open temporary modifications associated with each of the selected components, if applicable.
9. Trend data on the selected electrical/mechanical components' performance for last three years, (For example, pumps' performance including in-service testing, other vibration monitoring, oil sample results, etc., for valves: stroke time and leak rate results, etc.).
10. Copy of latest completed surveillance tests for each component (for example, for pumps this would include: comprehensive test, quarterly test, flow balance, etc. for valves: stroke time testing, diagnostic testing, leak testing, etc.). Acceptance criteria basis calculations should also be included.
11. Provide copies of the normal and abnormal operating procedures associated with the selected components and selected scenarios.

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REQUEST FOR INFORMATION**

12. A copy of any internal/external self-assessments and associated corrective action documents generated in preparation for the inspection.
13. A copy of engineering/operations related audits completed in the last two years.

C. *Additional Information to be Provided on May 14, 2012, On-Site (for final selected components)*

During the in-office preparation activities, the team will be making final selections and may identify additional information needed to support the inspection. The lead inspector will provide a list of the additional information needed during the week of May 7, 2012.

D. *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).
3. One complete set of P&IDs (paper copies).
4. Reference materials. (make available if needed during all on-site weeks):
 - IPE/PRA report;
 - Procurement documents for components selected (verify retrievable);
 - Plant procedures (normal, abnormal, emergency, surveillance, etc.); and
 - Vendor manuals.

If you have questions regarding the information requested, please contact the lead inspector.

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Sincerely,
/RA/

Ann Marie Stone, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Component Design Bases Inspection (CDBI) Information Request

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Letter to First Mr. Michael J. Pacilio from Ms. Ann Marie Stone dated February 14, 2012.

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