

An Exelon Company

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Nuclear

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RS-08-002
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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Clinton Power Station
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Response to Request for Additional Information
Request for Relief - Use of the Boiling Water Reactor Vessel and Internals
Project (BWRVIP) Guidelines in Lieu of Specific ASME Code Requirements

References: 1) Letter from P. B. Cowan (Exelon/AmerGen) to U. S. Nuclear Regulatory
Commission, dated April 19, 2007

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- 2) Letter from C. Gratton (U. S. Nuclear Regulatory Commission) to C. M. Crane (Exelon/AmerGen), dated September 5, 2007
- 3) Letter from P. B. Cowan (Exelon/AmerGen) to U. S. Nuclear Regulatory Commission, dated October 5, 2007
- 4) Letter from C. Gratton (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon/AmerGen), dated November 29, 2007

In the Reference 1 letter, Exelon Generation Company, LLC (Exelon) and AmerGen Energy Company, LLC (AmerGen) requested relief from specific portions of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," on the basis that the proposed alternative provides an acceptable level of quality and safety. Specifically, this proposed alternative concerns the use of the Boiling Water Reactor Vessel and Internals Project (BWRVIP) guidelines in lieu of specific ASME Code Requirements.

In the Reference 4 letter, the U. S. Nuclear Regulatory Commission requested additional information. Attachment 1 is our response to that request.

There are no commitments contained in this letter.

If you have any questions, please contact Tom Loomis, 610-765-5510.

Very truly yours,

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Pamela B. Cowan
Director - Licensing and Regulatory Affairs
Exelon Generation Company, LLC
AmerGen Energy Company, LLC

Attachment: 1) Response to Request for Additional Information

cc: Regional Administrator – NRC Region I
Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
NRC Senior Resident Inspector – Dresden Nuclear Power Station
NRC Senior Resident Inspector – LaSalle County Station
NRC Senior Resident Inspector – Limerick Generating Station
NRC Senior Resident Inspector – Oyster Creek Generating Station
NRC Senior Resident Inspector – Peach Bottom Atomic Power Station
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

Attachment 1
Response to Request for Additional Information

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING A REQUEST FOR RELIEF TO USE THE BOILING WATER REACTOR VESSEL
AND INTERNALS PROJECT GUIDELINES AS AN ALTERNATIVE TO CERTAIN
REQUIREMENTS OF SECTION XI OF THE AMERICAN SOCIETY OF MECHANICAL
ENGINEERS BOILER AND PRESSURE VESSEL CODE FOR INSERVICE
INSPECTION (ISI) OF REACTOR VESSEL INTERNAL (RVI) COMPONENTS FOR
CLINTON POWER STATION UNIT 1
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
LASALLE COUNTY STATION, UNITS 1 AND 2
LIMERICK GENERATING STATION, UNITS 1 AND 2
OYSTER CREEK GENERATING STATION
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

Question:

Background

By letter dated April 19, 2007, as supplemented by letter dated October 5, 2007, the licensee submitted Relief Request (RR) RS-07-058 for its BWR fleet. The licensee proposed to use Boiling Water Reactor Vessel Internal Program (BWRVIP) guidelines as an alternative to certain requirements of Section XI of the ASME Code for ISI of reactor vessel internal (RVI) components.

In its letter dated October 5, 2007, the licensee stated that it has committed to follow the BWRVIP Guidelines. However, the BWRVIP-25 report, "BWR Core Plate Inspection and Flaw Evaluation Guidelines," was not listed in the original RR because the licensee considered this report to be unrelated to ASME Code, Section XI Examination Categories B-N-1 and B-N-2. However, to maintain consistency with the previous RRs submitted by other licensees, the licensee agreed to reference the BWRVIP-25 report in the current RR.

In the October 5, 2007 letter, the licensee submitted inspection results that were performed to date on various RVI components in its BWR fleet. The NRC staff noted that the October 5, 2007, submittal listed ISI results of the core plate components for the following units only:

Limerick Generating Station (LGS), Unit 1(1998 outage)
LGS, Unit 2 (1995 and 1999 outages)
Peach Bottom Atomic Power Station (PBAPS), Unit 2 (1996 outage)
PBAPS, Unit 3 (1995 and 1997 outages)
Quad Cities Nuclear Power Station (QCNPS), Unit 1 (1996, 1998 and 2007)
QCNPS, Unit 2 (1997 and 2006)

To clarify this inconsistency, the NRC staff requests that the licensee provide the following information:

- (1) Identify the BWR units that consider core plate components part of the ASME Code, Section XI ISI program. Provide an explanation why some units core plate components were inspected per the ASME Code, Section XI ISI program, and other units' core plate components have not been inspected.

- (2) Identify the BWR units that intend to implement the options specified in the BWRVIP-25 report in lieu of the ASME Code, Section XI ISI program for the core plate components.
- (3) Confirm whether, the inspection guidelines specified in the BWRVIP-25 report for the core plate components will be used for the BWR units that do not consider core plate components as part of the ASME Code, Section XI ISI program.

Response:

- 1) It should be noted that the focus of the Reactor Vessel Inspection History summaries, submitted to the BWRVIP following refueling outages, is to document the results of completed examinations that are required by the various BWRVIP inspection guidelines. ASME Section XI Code examinations are not necessarily included in these inspection histories.

ASME Section XI Examination Category B-N-2 is defined as "Integrally Welded Core Support Structures" (later Code Editions dropped the word "Integrally"). The core plate in the BWR is bolted in place and not integrally welded. Therefore, some plants may not include the core plate in Examination Category B-N-2, Item No. B13.40.

Some of the Exelon/AmerGen BWRs have included the core plate in their ISI Programs. However, few ASME Section XI ISI examinations have been performed of the core plate as discussed below.

The Section XI Code examination requirements for Category B-N-2, Item No B13.40 includes a visual (VT-3) examination of accessible surfaces during normal refueling outages. As discussed in BWRVIP-25, "BWR Core Plate Inspection and Flaw Evaluation Guidelines." Most of the core plate surfaces and welds are inaccessible during normal refueling outages. The fuel support pieces obscure the surface of the plate, even after the fuel is removed. The rim weld is also inaccessible due to its proximity to the inside surface of the shroud. Most of the remaining welds on the core plate structure are on the underside of the plate, and are therefore also not accessible during a normal refueling outage. Small portions of the plates' surface become accessible for visual examination from time to time, during the change-out of control blades. During this evolution, the fuel support piece is removed, exposing a portion of the plate's surface. This area is visually observed during the change-out process. However, plants generally do not credit these as Code examinations. Therefore, code examinations of the welds and surfaces of the core plate are not typically performed. Some plants include components associated with the core plate in their ISI Programs. These may include components such as the hold-down bolts, fuel support castings wedges, etc.

The referenced Limerick Core Plate examinations were of the hold down bolts, and fuel support castings and surrounding areas. The referenced Quad Cities examinations were of the wedges installed at the perimeter of the core plate, which were examined as part of the shroud tie rod repair hardware inspection scope under BWRVIP guidance. The PBAPS examinations were of the hold-down bolts only.

- 2) All Exelon/AmerGen BWR units are committed to implement the BWRVIP-25 Guidelines. As such, all Exelon/AmerGen BWR units propose to implement these requirements, whether or not they consider the ASME Code requirements applicable to this component.

- 3) As stated above, all Exelon/AmerGen BWR units are committed to implement the BWRVIP-25 Guidelines. Accordingly, all Exelon/AmerGen BWR units propose to implement these requirements, whether or not they consider the ASME Code requirements applicable to this component.

Question 2:

Background

In its letter dated October 5, 2007, the licensee stated that it has committed to follow the BWRVIP Guideline. The BWRVIP-27-A report, "BWRVIP Standby Liquid Control System/Core Spray/Core Plate ΔP Inspection and Flaw Evaluation Guidelines," was not listed in the original RR because the licensee considered the BWRVIP-27-A report to be unrelated to the ASME Code, Section XI, Examination Category B-N-1 and B-N-2. However, to maintain consistency with the previous RR submitted by other licensees, the licensee agreed to reference the BWRVIP-27-A report in the current RR.

The NRC staff acknowledges that SLCS and core plate, ΔP components are not part of B-N-1 and B-N-2 categories, but they are considered part of B-D, B-E, B-F, B-J and B-P categories of the ASME Code, Section XI ISI program.

In the October 5, 2007, letter, the licensee submitted inspection results that were performed to date on various RVI components in its BWR fleet. The NRC staff noted that the October 5, 2007, submittal listed ISI results of the SLCS and core plate ΔP components for the following units only:

Dresden Nuclear Power Station (DNPS), Unit 2 (2000 and 2004 outages)
DNPS, Unit 3 (2002 and 2006 outages)
Oyster Creek Nuclear Generating Station (2000, 2002, 2004 and 2006 outages)
LaSalle County Station (LSCS), Unit 1 (1999, 2002, 2004 and 2006 outages)
LSCS, Unit 2 (2000, 2003, 2005 and 2007 outages)

To clarify this inconsistency, the NRC staff requests that the licensee provide the following information:

- (1) Identify the BWR units that consider SLCS and core plate ΔP components part of the ASME Code, Section XI ISI program. Provide an explanation why some units' SLCS and core plate ΔP components were inspected per the ASME Code, Section XI ISI program and other units' SLCS and core plate ΔP components have not been inspected.
- (2) Identify the BWR units that intend to implement the inspection guidelines specified in the BWRVIP-27-A report in lieu of the ASME Code, Section XI ISI program for the SLCS and core plate ΔP components.
- (3) Confirm whether the inspection guidelines specified in the BWRVIP-27-A report for the SLCS and core plate ΔP components will be used for the BWR units that do not consider SLCS and core plate ΔP components as part of the ASME Code, Section XI ISI program.

Response:

- 1) All Exelon/AmerGen BWR units consider the SLCS and core plate ΔP components part of the ASME Code, Section XI boundary of jurisdiction. All Exelon/AmerGen BWR units have been inspected per the applicable Code requirements. However, not all of these Code inspections have been reported to the BWRVIP.

It should be noted that the focus of the Reactor Vessel Inspection History summaries, submitted to the BWRVIP following refueling outages, is to document the results of completed examinations that are required by the various BWRVIP inspection guidelines. ASME Section XI Code examinations are not necessarily included in these inspection histories.

- 2) None of the Exelon/AmerGen BWR units propose to implement the requirements of BWRVIP-27-A in lieu of the ASME Section XI Code. The ASME Section XI Code requirements will be implemented along with the BWRVIP-27-A requirements.
- 3) All Exelon/AmerGen BWR units consider the SLCS and core plate ΔP components as Code components. Therefore, all Exelon/AmerGen BWR units have been and will continue to implement the ASME Section XI Code requirements, along with the BWRVIP-27-A requirements.