



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

April 16, 2015

LICENSEE: Exelon Generation Company, LLC

FACILITY: Clinton Power Station, Unit 1

SUBJECT: SUMMARY OF FEBRUARY 23, 2015, MEETING WITH EXELON GENERATION COMPANY, LLC REGARDING RELIEF REQUESTS FOR CLINTON POWER STATION, UNIT 1 (TAC NOS. MF5334, MF5344, AND MF5345)

On February 23, 2015, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Exelon Generation Company, LLC (the licensee). The purpose of the meeting was to discuss three relief requests (RRs) submitted on December 1, 2014, for Clinton Power Station (CPS), Unit 1, to support its transition to 1-year refueling cycles. In the past, CPS has operated with a 24-month fuel cycle and the current cycle is scheduled to be 18-months ending this spring. The meeting notice and agenda is available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML15041A452. A list of attendees is enclosed.

RR 2203 (ADAMS Accession No. ML14335A541) is a proposed alternative to the requirements of the American Society of Mechanical Engineers (ASME), "Code for Operation and Maintenance of Nuclear Power Plants (OM Code)," 2004 Edition, Subsections ISTC-3521(e), ISTC-3521(h), ISTC-3522(c), and ISTC-3522(f). These ASME OM Code subsections require that ASME Class 1, 2, and 3 valves in an inservice testing (IST) cold shutdown justification (CSJ) or refueling justification (RFJ) be tested each refueling outage. The licensee's proposed alternative is to test CSJ and RFJ valves every 2 years.

RR 2204 (ADAMS Accession No. ML14335A540) is a proposed alternative to ASME OM Code Case OMN-1 (2006 addenda), Subsection 3.6.1, which requires all motor-operated valves (MOVs) within the scope of the code case to be "full-cycle exercised at least once per refueling cycle with the maximum time between exercises to be not greater than 24 months." The licensee's proposed alternative is to continue to exercise these MOV's every 24 months.

RR 13R-11(ADAMS Accession No. ML14335A539) is a proposed alternative to Section XI of the ASME OM Code which would permit the licensee to perform an IST of Code Class 1, 2, and 3 snubbers every 2 years or every other refueling outage in lieu of the requirement to perform testing every refueling outage.

DISCUSSION SUMMARY

This summary includes a description of the discussion topics which were provided to the licensee in advance of the meeting. The NRC staff noted that this meeting would help the staff develop requests for additional information (RAIs).

RR 2203 and 2204 Topics

Topic 1

The requests state that the proposed alternatives are for the third IST interval at CPS. Provide the start and end date for the third IST interval.

Discussion: The NRC further stated that all RRs should provide the specific dates for which the relief is applicable. The licensee stated that the third IST interval started July 10, 2010, and ends June 30, 2020.

RR 2204 Topics

Topic 2

Technical Specification 5.5.6, "Inservice Testing Program," and the ASME OM Code and addenda applicable to CPS do not permit extension of the MOV testing required per OMN-1 Subsection 3.6.1 beyond 24 months. Under the current OMN-1 Subsection 3.1 requirements, potential delays in the planned CPS refueling outage schedule would be unlikely to result in the MOV testing to exceed 24 months. However, under the proposed alternative to exercise the MOVs every 24 months, a delay in refueling outage schedule may make it difficult to meet the required testing frequency. Explain how CPS plans to meet the alternative MOV testing frequency if there are delays in refueling outage schedules.

Discussion: The licensee stated that it has no plans developed to address this concern. The licensee indicated that if this situation were to occur it may request additional relief at that time.

RR 2203 Topics

Topic 3

The ASME OM Code establishes the requirements of preservice and IST examination of certain components to assess their operational readiness in light-water reactor (LWR) nuclear power plants. It identifies the components subject to test or examination, responsibilities, methods, intervals, parameter to be measured and evaluated, criteria for evaluating the results, corrective action, personnel qualification, and record keeping. These requirements apply to pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident.

Section ISTC of the ASME OM Code delineates the requirements for the IST of valves in LWR nuclear power plants. The valve testing requirements outlined in Section ISTC-3500 of the ASME OM Code can be simply stated as:

- a) Exercise Test (nominally every 3 months)
- b) Leakage Test (nominally once every 2 years)
- c) Valve Obturator Movement (verify during exercise test)
- d) Fail-Safe Actuators (verify during exercise test)
- e) Remote Position Indicator Test (nominally once every 2 years)

The ASME OM Code recognizes that not every valve can meet the nominal exercise frequency every 3 months due to the exercise not being practicable during normal plant operation. The ASME OM Code allows extension of the exercise requirement to be performed during a cold shutdown event. Valve exercising shall commence within 48 hours of achieving cold shutdown and continue until all testing is complete or the plant is ready to return to operation at power. If valve exercising is not practicable during a cold shutdown then exercising will be limited to refueling outages. All valve tests required to be performed during a refueling outage shall be completed before returning the plant to operation at power.

RR 2203 is applicable to all ASME Class 1, 2, and 3 valves included in the CPS IST program CSJ or RFJ list. The valves on the CSJ and RFJ list represent those components that are not practicable to test during normal operation. RR 2203 states that CPS is changing the refuel cycle from 24 months to 12 and wishes to treat every other refuel cycle as "refuel only" with minimal maintenance activities. RR 2203 proposes that the "refuel only" cycle be treated like a cold shutdown, with respect to having the requirement to test valves identified on the CSJ list. During a "refuel only" cycle, CPS will test as many valves noted on the CSJ list until ready to return to normal power operation.

ASME OM Code exercise test provides an opportunity for tracking and trending valve and accessory performance. It is recognized there is a possibility that not all valves listed on the CSJ list will be tested during a shorter "refueling only" outage. Section 3.1.1.1, "IST Cold Shutdown Testing," of NRC NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants," published October 2013, provides an acceptable method of scheduling valves for testing during a cold shutdown. Use of this method helps ensure that the selection of valves to be tested during a cold shutdown are diverse and not the same group of valves each time. Explain how the valves identified in the CSJ list will be selected for testing during the shorter "refueling only" outage.

Discussion: The licensee indicated they understood the questions and could respond to an RAI.

Topic 4

The ASME OM Code requires exercise testing of valves at least once every 3 months. As discussed above, the ASME OM Code permits the testing to be deferred to cold shutdown or refueling outages based on practicality. Operating experience indicates that valve reliability is higher with more frequent testing. The application indicates that a test interval of 24 months for RFJ valves "maintains the current acceptable level of quality and safety" for these valves. The application also indicates that testing of the CSJ valves during the "refueling only" outage will "increase the level of quality and safety for the CPS CSJ valves." However, the application does not describe the impact on the reliability of the valves given the intent of the ASME OM code that the valves be exercised at least once every 3 months.

Justify that the CSJ and RFJ valves will be adequately reliable by comparing the reliability based on testing at 3-month, 1-year, and 2-year intervals. Provide additional justification why it is acceptable for valves on the RFJ list to maintain the current 2-year test interval.

Discussion: The licensee indicated they understood the questions and could respond to an RAI.

RR I3R-11 Topics

Topic 5

The submitted RR is for third 10-year inservice inspection (ISI) interval at CPS. Provide the start and end date of third 10-year ISI interval.

Discussion: The licensee stated that the third 10-year ISI interval started July 10, 2010, and ends June 30, 2020.

Topic 6

In RR I3R-11, Section 2, "Applicable Code Edition and Addenda," states that the CPS ISI program is based on the ASME B&PV [Boiler and Pressure Vessel Code], Section XI, 2004 Edition and no addenda. In accordance with Title 10 of the *Code of Federal Regulations* Section 50.55a(b)(3)(v), the IST of snubbers is to be performed per ASME OM Code 2004 Edition paragraph ISTD-5200.

The NRC notes that the licensee is using the ASME OM Code for snubber inspections. The NRC also notes that ISTD-5200 contains requirements for snubber testing frequency and ISTD-4200 contains requirements for snubber visual examination frequency. The licensee has proposed an alternative to the snubber testing frequency in ISTD-5200, but has not clearly indicated its plans regarding ISTD-4200.

Clarify whether the requirements of ISTD-4200 will be met or if a proposed alternative to ISTD-4200 is intended as well. If an alternative to ISTD-4200 is intended, propose and justify such an alternative.

Discussion: The licensee indicated that it will continue to follow the visual examination requirements of ISTD-4200.

Topic 7

The following questions relate to ASME OM Code, Subsection ISTD, for snubber examination and testing:

- a. Describe how Table ISTD-4252-1, "Visual Examination Table," for snubbers will be implemented for the RR considering the change to refueling outage schedules.
- b. Clarify if the snubber testing will only be performed during the refueling/maintenance outage.
- c. ISTD-6200, "Service Life Monitoring," requires that the service life of each snubber shall be evaluated at least once each fuel cycle, and increased or decreased, if warranted. Explain how this section will be implemented for this RR.
- d. If Code Case OMN-13 is used at CPS, describe any changes due to implementation of this RR.
- e. Verify that all applicable documents will be revised to include this change.

Discussion: The licensee stated it had adopted OMN-13, and does not intend to include OMN-13 requirements in this RR. The NRC staff noted that if the number of failures exceeds the values in Table ISTD-4252-1 then the licensee needs to stop using OMN-13.

The licensee stated that it plans to perform the snubber testing only during the proposed refueling/maintenance outage. The licensee also stated that it has not requested relief from ISTD-6200.

Topic 8

The ASME B&PV Code, Section XI, IWB-5220, and Table IWB-2500-1, Item B15.10, "Pressure retaining components," applicable to CPS, requires a system leakage test to be performed each refueling outage. CPS has not requested relief for system leakage test. Confirm that the system leakage test at CPS will continue to be performed every refueling outage following the transition to 12-month refueling cycles.

Discussion: The licensee stated that it will continue to perform this test every refueling outage (i.e., every 12 months) as required by the ASME B&PV Code Section XI.

Topic 9

The RR states that the proposed alternative to the snubber testing requirements in ASME B&PV Code Section XI and ISTD-5200 is to test every 2 years or every other refueling outage. This implies that CPS has a choice of testing frequencies, such that if the refueling outage schedules change the testing frequency may be less than every 2 years. Provide justification for the proposed testing of every other refueling outage given that CPS is not limited to a 12-month refueling cycle.

Discussion: The licensee indicated that its intent is to perform snubber testing every 2 years.

Please direct any inquiries to me at 301-415-1380 or Blake.Purnell@nrc.gov.



Blake Purnell, Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactors
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure:
List of Attendees

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LIST OF ATTENDEES

FEBRUARY 23, 2015, MEETING WITH EXELON GENERATION COMPANY, LLC

Name	Affiliation
Tim Byam	Exelon
Jim Peterson	Exelon
Mirza Baig	Exelon
Fred Sarantakos	Exelon
Dave Szymkiewicz	Exelon
Michael Farnan	NRC
Gurjendra Bedi	NRC
David Alley	NRC
Chris Hunt	NRC
Blake Purnell	NRC

Discussion: The licensee stated it had adopted OMN-13, and does not intend to include OMN-13 requirements in this RR. The NRC staff noted that if the number of failures exceeds the values in Table ISTD-4252-1 then the licensee needs to stop using OMN-13.

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DATE	4/15/15	3/16/15	3/30/15	4/14/15	4/16/15