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

February 21, 2014

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 – AUDIT REPORT REGARDING FLOODING WALKDOWNS TO SUPPORT IMPLEMENTATION OF NEAR-TERM TASK FORCE RECOMMENDATION 2.3 RELATED TO THE FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT ACCIDENT (TAC NOS. MF0270 AND MF0271)

Dear Mr. Pacilio:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) staff issued a letter requesting information per Title 10 of the *Code of Federal Regulations,* Paragraph 50.54(f) (50.54(f) letter). The 50.54(f) letter was issued to power reactor licensees and holders of construction permits requesting addressees to provide further information to support the NRC staff's evaluation of regulatory actions to be taken in response to lessons learned from Japan's March 11, 2011, Great Tōhoku Earthquake and subsequent tsunami. The request addressed the methods and procedures for plants to conduct seismic and flooding hazard walkdowns to identify and address degraded, nonconforming, or unanalyzed conditions through the corrective action program, and to verify the adequacy of the monitoring and maintenance procedures.

By letter dated November 27, 2012, Exelon Generation Company, LLC (the licensee) submitted a flooding walkdown report for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, as requested in Enclosure 4, "Recommendation 2.3: Flooding," of the 50.54(f) letter. From July 9–11, 2013, the NRC staff conducted an onsite audit of QCNPS to gain a better understanding of the methods and procedures used by the licensee to conduct the flooding walkdowns. The information gained during the audit will facilitate the NRC staff review of the walkdown report. The NRC staff appreciates your support of the audit. The audit report has been included as an enclosure to this letter.

If you have any questions, please contact me at 301-415-1380 or by e-mail at Blake.Purnell@nrc.gov.

Sincerely,

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

Docket Nos. 50-254 and 50-265

Enclosure:
Audit Report

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Audit Report
Quad Cities Nuclear Power Station, Units 1 and 2
Docket Nos. 50-254 and 50-265

1.0 Introduction

By letter[1] dated November 27, 2012, Exelon Generation Company, LLC (the licensee) submitted a flooding walkdown report for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. As summarized below, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit from July 9–11, 2013, at QCNPS to gain a better understanding of the methods and procedures used by the licensee to conduct flooding walkdowns at QCNPS and facilitate the NRC staff assessment of the licensee's walkdown report.

1.1 Background

On March 12, 2012, the NRC issued a letter[2] to all power reactor licensees and holders of construction permits in active or deferred status requesting information pursuant to Title 10 of the *Code of Federal Regulations*, Paragraph 50.54(f) (50.54(f) letter). The request was issued as a part of implementing lessons-learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 4, "Recommendation 2.3: Flooding," of the 50.54(f) letter requested that licensees plan and perform flooding walkdowns to identify degraded, nonconforming, or unanalyzed conditions related to the licensing bases of structures, systems, and components important to safety and to verify the adequacy of monitoring and maintenance procedures. By letter dated November 27, 2012, the licensee submitted a flooding walkdown report for QCNPS, as requested per Enclosure 4 of the 50.54(f) letter.

1.2 Regulatory Audit Basis

The NRC staff conducted a regulatory audit to gain a better understanding of the methods and associated procedures used by the licensee to conduct the flooding walkdowns at QCNPS, Units 1 and 2, and to facilitate the NRC staff assessment of the report documenting the site walkdowns.

The Nuclear Energy Institute (NEI) developed guidance for performing the flooding walkdowns with extensive review and input from NRC staff in numerous public meetings, webinars, and public conference calls. By letter[3] dated May 31, 2012, the NRC endorsed NEI 12-07, Rev. 0, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features," dated May 2012[4]. By letter[5] dated June 11, 2012, the licensee stated that it would use NEI 12-07 as the basis for the flooding walkdowns at its facilities, which includes QCNPS.

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[1] Agencywide Documents Access and Management System (ADAMS) Accession No. ML12332A307.
[2] ADAMS Accession No. ML12053A340.
[3] ADAMS Accession No. ML12144A142.
[4] ADAMS Accession No. ML12144A401.
[5] ADAMS Accession No. ML12164A569.

1.3 Audit Logistics

By letter[6] dated May 30, 2013, the NRC staff issued the audit plan for QCNPS. The audit plan included a proposed audit schedule and a list of information that the staff requested the licensee to have available for review during the audit. The audit plan also requested that the licensee personnel and contractors who performed the walkdowns be available for interviews.

The NRC staff conducted the audit from July 9–11, 2013, in accordance with the NRC Office of Nuclear Reactor Regulation, Office Instruction[7] LIC-111, "Regulatory Audits," dated December 16, 2008. The NRC staff and a contractor (the audit team) which participated in the audit are listed in Table 1. The audit team held an entrance meeting with the licensee on July 9, 2013, to provide background information and the audit purpose. The audit team held an exit meeting with the licensee on July 11, 2013, to convey observations from the audit, including (1) observations related to whether the walkdowns were performed in accordance with NEI 12-07 and (2) observations forwarded to the resident inspectors for additional action, if appropriate.

Table 1: NRC audit team

Auditor	Affiliation	Audit Role
Stephen Campbell	NRC/NRR/DIRS/IRIB	Audit lead
Michelle Bensi	NRC/NRO/DSEA/RHMB	Technical lead
Brian Cushman	NRC/R-III/DRP/B1/QCRO	Resident Inspector
Peter Chaput	NRC/NRO/DSEA/RHMB/RHST	Flooding technical support
Joseph Kanney	NRC/RES/DRA/ETB	Flooding technical support
Gregory Zimmerman	Oak Ridge National Laboratory	Flooding technical support

2.0 Audit Scope

The audit provides support for the ongoing NRC staff assessment of the licensee's walkdown report. The audit scope included review of information and documents available onsite and interviews of licensee personnel and contractors to aid NRC staff understanding of (1) how the licensee performed the flooding hazard walkdowns, and (2) whether the walkdowns were performed in accordance with NEI 12-07.

The audit will also help identify additional information that will require docketing to support the NRC staff conclusions related to the staff assessment. Observations made by the audit team that were not within the scope of the audit were provided to the resident inspector for additional action, if appropriate.

3.0 Audit Activities and Remarks

The design-basis probable maximum flood event would result in the QCNPS site being inundated. The site is licensed to mitigate the effects of the flood by implementing procedures to prevent damage to the reactor core. Site mitigation activities include: shutdown of the

[6] ADAMS Accession No. ML13127A451.
[7] ADAMS Accession No. ML082900195.

reactors; dual-unit reactor disassembly; filling tori/drywells, reactor cavities, dryer-separator pools, and radwaste tanks with water; de-energizing station electrical loads; opening of plant doors to allow free flow of water through the plant; and movement, staging, and use of a portable pump (Darley pump) to provide makeup water to the reactors. By procedure, the portable pump is moved as water levels increase to ensure the pump stays dry and has adequate suction head.

In preparation for the audit, NRC staff developed a preliminary list of questions, which were communicated to the licensee prior to the arrival of the team on site. The preliminary list of questions addressed the following topical areas:

- The time available to implement flood mitigation measures, including considerations such as procedures for monitoring of river levels, entry conditions for the flood emergency procedure, and available warning time
- The basis for the overall estimate of time required for execution of the flood emergency procedure (e.g., whether timing estimates accounted for transition times and steps executed in parallel)
- The basis for staff and resource estimates, including considerations for actions performed in parallel and aggregate effects on staffing
- The basis for conclusions regarding site accessibility
- The basis for the margin of error associated with timing estimates
- Performance of reasonable simulations
- Personnel safety concerns
- Buoyancy of the emergency diesel generator tank
- Training
- Inaccessible features
- The process for obtaining fuel and refueling the makeup pump
- The capacity of water storage tanks used to provide makeup

Throughout the audit, the licensee addressed the staff questions and provided clarification regarding these topics.

Early in the audit, site personnel made a presentation to the audit team to provide an overview of the following: site description, external flooding design basis and current licensing basis, flooding walkdown and results, external flooding response procedures, and the results of a recently performed licensee self-assessment. The self-assessment was conducted by the licensee after it was notified that it would be audited. The self-assessment identified a subgrade area that was missed in the walkdown and provided nine recommendations for improvement, which the licensee stated were added to the corrective action program (CAP).

The audit team reviewed documents related to the licensee's performance of the flooding walkdowns, including:

- Walkdown record forms and other supplemental forms and worksheets (e.g., reasonable simulation worksheets and Gantt charts) that were created by the licensee to document observations associated with the walkdowns

- Supplemental guidelines or procedures used, in addition to NEI 12-07, for the implementation of the flooding walkdowns including a white paper titled "Recommendation 2.3: Flooding Walkdowns Inaccessible and Restricted Access Areas," which was prepared by the licensee as supplemental guidance to classify areas as inaccessible
- Flood-specific procedures that are part of flood mitigation strategies which were reviewed or used by the licensee as part of the flood walkdowns, including:
    - Flood Emergency Procedure (multiple versions/revisions)
    - Normal Unit Shutdown
    - Reactor Disassembly
    - Using Diesel Fire Pumps for Flood Emergency Injection
    - Makeup Demineralizer System Mobile Demineralizer
    - Filling Reactor Vessel/Reactor Cavity Using Core Spray
    - Sealing the Emergency Diesel Generator (EDG) Fuel Oil Storage Tank Vent
- Listing of entries into the CAP resulting from the performance of the flood walkdowns

The audit team interviewed site personnel and walkdown participants to inquire about reasonable simulation activities (e.g., whether activities were physically simulated or assessed via tabletop exercises, and to what extent), the sequence of steps associated with reactor disassembly, and the estimation of time required to perform manual actions.

The audit team also participated in a site familiarization tour with the resident inspector and made additional field visits to observe areas of the site that are associated with plant flood response. Locations visited by audit team members include:

- building where the portable pump (Darley pump) is stored
- Unit 1 reactor building floor and stairwell, which is where the Darley pump will be positioned when flood waters arrive onsite
- refueling floor
- scaffold staging area
- control room

Because the flood response strategy at QCNPS relies on manual actions, the audit team focused primarily on review of reasonable simulations and other evaluations (e.g., inspection and review of operator and outage logs) that the licensee used to demonstrate that manual actions could be perform as credited. A member of the audit team also reviewed walkdown record forms for the limited number of physical flood protection features at the site. The discussion below provides additional details of the audit teams reviews and insights.

An audit team member reviewed the procedure and walkdown documentation associated with the licensee's review of the shutdown of both reactors, which is required for the site flood response. The audit team member noted that the time estimates used for the walkdowns were based on the last three years of data, which lead to an estimated time of slightly over 14 hours to complete the shutdown of the reactor (the licensee noted that a scram of the reactor would reduce the time required).

The audit team reviewed the desktop evaluation performed by the licensee of the reactor disassembly activities required by the flood emergency response. The audit team reviewed the associated walkdown record forms and simulation worksheets, Gantt charts, a sample of outage logs used by the licensee to develop timing estimates, and staffing estimates developed by the licensee as part of the walkdowns. The audit team also visited the refueling floor, where the licensee described sequences of steps associated with the disassembly and identified laydown areas for components such as the shield blocks and reactor head. The audit team noted the following as a result of the review of the reactor disassembly activities:

- The licensee performs a reactor disassembly for each refueling outage and, therefore, has robust procedures and a significant amount of experience with the activity. The licensee demonstrated knowledge and experience with the activity. However, the flood emergency response procedure requires concurrent disassembly of both reactors. This activity has not been performed previously and a procedure does not exist to specifically guide the dual-unit disassembly.

- Staffing estimates developed by the licensee during the walkdowns were revised based on the licensee's self-assessment. As a result, the staffing estimates available at the site did not match the staffing estimates provided in the licensee walkdown report submitted to the NRC in November 2012.

- The licensee walkdown report states that "the review of the [reactor disassembly] procedure included a desktop evaluation and a reasonable simulation/interview conducted with the Reactor Services Manager to evaluate the timing, lay down areas, and resources needed for the execution of the procedure, and to verify that a concurrent disassembly of both reactor units can be accomplished." The walkdown report further states that licensee generated a detailed schedule for dual-unit disassembly, which included the sequence of individual tasks and time required for completion of each task. The duration of each task was "estimated based on the previous refueling outages and the respective operator and outage logs (Q1R20, Q2R20, Q1R21, Q2R1) with Reactor Services Manager's input." The licensee's contractor for the walkdowns reviewed the presented sequence timing to verify the sequence can be accomplished and the duration of each task can be verified by operator and outage logs.

  During the audit, NRC staff asked questions regarding the method used to estimate the time needed to perform activities and how the licensee ensured that the activities could be completed in the time available. Licensee staff indicated that logs from past refueling outages were used and, for each task, an additional margin was added by rounding up estimated times.

- An audit team member asked the licensee to provide portions of the logs related to detensioning of the reactor head (with task start and end times identified) from the Q1R20, Q2R20, Q1R21, and Q2R21 refueling outages, which were referenced in the licensee's walkdown report. The audit team member estimated the time required to perform the task from the logs and compared it against the time required to perform the task, as indicated in licensee documents. The audit team noted that in three of the last

four outages the time required to perform the task exceeded the time the licensee used in its evaluation of whether the task could be completed within the time available. The audit team asked the licensee to clarify its use of potentially nonconservative times in its evaluations. This issue was identified close to the end of the audit, so the licensee provided a table of timing information to the audit team after the exit. The table of timing information was consistent with what the staff noted above. In addition, the resident inspector at QCNPS conducted an independent review of a sample of timing data and did not identify any additional issues.

The audit team reviewed the assessments performed by the licensee as part of the walkdowns regarding the following tasks: building a scaffold near the stairwell of the Unit 1 reactor building on which the Darley pump will be staged when flood waters arrive on site; moving the Darley pump inside the building, onto the scaffold, and (if necessary) onto the stair landing when flood waters have arrived on site; and the refueling of the Darley pump after flood waters have arrived on site. The audit team noted the following as a result of its review:

- Based on interviews with licensee staff, it was unclear to the audit team whether the licensee considered the challenges associated with refueling the pump with gasoline under prevailing site conditions (e.g., when the pump is staged on scaffolding, surrounded by water, and with potentially limited visibility) or calculated the pump fuel consumption rates needed for the duration of the flood event. During the licensee's self-assessment of its walkdowns, the licensee identified the need to store about 300 gallons of gasoline on upper levels of the reactor building due to a potential increase in mission time from 8 to 10 days due to the increased length of time for river water recession.

- Through interviews with licensee staff and contractors and review of site procedures, the audit team learned that the licensee timed two operators relocating the Darley pump from the storage warehouse to the storm drain and then through the plant trackway doors. As part of the simulation, operators also carried the pump up the stairs to the first landing to gauge whether the operators could lift and maneuver the pump given its weight and bulk. This task was noted but not timed. It was demonstrated that the pump can be moved easily using a manual pallet jack and the pump can be carried by two people.

  The simulation did not include the erection of scaffolds that would be required to facilitate the movement and staging of the pump as flood water level increased. The pump would be deployed upon the station's entry into the flood emergency procedure. A hose would be attached to the pump to take suction from floodwater on site. Two discharge lines would be connected between the Darley pump and the refueling cavity on the upper level of the reactor building. The pump must be relocated throughout the flood event to ensure it has sufficient suction head and remains above the elevation of the floodwater. Water is initially withdrawn from a manhole located at plant grade level outside the reactor building. Once the floodwater reaches plant grade level, the pump will be moved inside the reactor building and staged on scaffolding near a stairway that leads up to the refueling floor. The walkdown records did not document discussions regarding scaffold construction and configuration and did not evaluate river water impact on the scaffold stability given the prevailing conditions of the plant during a flood event.

The audit team also noted hindrances to movement of the pump (e.g., security fencing, installed conduit and junction boxes).

An audit team member reviewed procedures and walkdown records associated with de-energizing station electrical loads. The flood emergency response procedure states that de-energizing electrical loads is the second to last step, after completion of all tasks requiring electrical power. However, the Gantt chart used by the licensee to develop timing estimates indicated that electrical loads would be de-energized approximately 1.5 hours prior to completion of reactor disassembly. The audit team member noted that all of the steps in the reactor disassembly require electrical power (e.g. crane operations); therefore, the sequence assumed in the Gantt chart did not appear feasible. In response to NRC questions, the licensee recognized the error in the Gantt chart task sequencing. Adjusting the sequence required the addition of 15 minutes to the estimated time required to perform the entire procedure. This resulted in a reduction in time margin from 30 minutes to approximately 15 minutes.

An audit team member reviewed the walkdown activities related to sealing the vents on the fuel oil storage tanks for the emergency diesel generators. Sealing the vents would prevent flood waters from entering the tanks. Although the activity is not directly related to maintaining reactor cooling, the audit team member noted that sealing the vents early in the timeline for the plant flood response may prematurely affect the availability and operability of the emergency diesel generators during the event.

An audit team member also reviewed procedures and walkdown documentation associated with filling of the tori/drywell with water via the residual heat removal (RHR) system. The audit team member noted that this task was not on the critical path and did not identify any issues. An audit team member also reviewed procedures and walkdown documentation associated with opening plant doors, placing the mobile makeup demineralizer system into operation, and placing all drywell loads in "pull to lock." The audit team member noted that time estimates associated with these actions appear reasonable.

While the audit team focused primarily on review of reasonable simulations and other manual action evaluations, an audit team member also reviewed walkdown record forms for physical flood protection features at the site (below-grade seals and walls) in the following locations:

1. 1A RHR Room
2. 1A Vault (service water pump (SWP) 1A)
3. 1B Core Spray Pump Room
4. 1B RHR Room
5. 1B-C Vault (SWP 1B-C)
6. 1D Vault (SWP 1D)
7. 2A Core Spray Pump Room
8. 2A RHR Room
9. 2A Vault (SWP 1A)
10. 2B RHR Room
11. 2B-C Vault (SWP 1B-C)
12. 2D Vault (SWP 1D)
13. Unit 1 and Unit 2 Condensate Booster Pump Areas
14. Unit 1 and Unit 2 High-Pressure Coolant Injection Rooms
15. Unit 1 and Unit 2 Torus Basements
16. Unit 1 and Unit 2 Turbine Building Mezzanine
17. Unit 1 and Unit 2 Turbine Building Slab

The licensee indicated that the walkdown included inspection of below-grade walls and seals, although they are not explicitly credited with flood protection functions, and created walkdown forms for these features. In conjunction with the review of walkdown record forms for these features, an audit team member noted the following:

- Walls and seals were visually inspected for signs of physical degradation based on defined acceptance criteria. The acceptance criteria for below-grade walls included: no signs of degradation of structural members; no significant surface cracks; no signs of degradation; and no significant spalling, scaling, or cracking of concrete surfaces. The acceptance criteria for penetrations/seals included: no indications of degradation that would allow flood waters enter into the flood protected area; visible penetrations are sealed with no visible gaps through wall holes; penetration sleeves, link seals, piping and conduit have an absence of corrosion on the exposed steel surface; conduit material has an absence of water stains below the penetrations; and material appears to be as indicated in plant documents and generally in good condition. Using these criteria, the visual inspections performed by the licensee did not identify any deficiencies that required entry into the CAP. All observations of degradation or cracking in walls or slabs were characterized as minor. Likewise, all observations of staining beneath penetrations or seals were characterized as negligible.

- Penetrations/seals in seven areas were declared inaccessible. Absence of evidence of current or past groundwater seepage below the penetration was cited as justification for reasonable assurance that the components can provide their intended function.

- Available physical margin was not recorded in the walkdown record forms because there are no passive or incorporated features credited for flood protection.

An audit team member also reviewed a white paper used by the licensee, which was titled "Recommendation 2.3: Flooding Walkdowns Inaccessible and Restricted Access Areas" and was prepared by Exelon corporate staff as supplemental guidance to classify certain areas as inaccessible. The audit team member did not identify any inconsistencies between the white paper and the intent of the guidance in NEI 12-07.

In reviewing the walkdown record forms, the audit team noted that the licensee did not develop a walkdown form specifically for the Darley pump. The NRC staff concluded that, although not in a form consistent with NEI 12-07, the licensee sufficiently documented information about the Darley pump in other formats and documents. In addition, the licensee generated CAP entry AR 01535008 to address the documentation associated with the Darley pump.

An audit team member reviewed CAP entries associated with the flooding walkdowns and noted that four entries were the result of discoveries made during the licensee's self-assessment. The CAP entries captured conditions that were also independently identified by the audit team during the audit.

4.0 Audit Summary

As described in Section 2.0, the goal of the audit was to support the development of the staff assessment of the licensee's walkdown report. Observations made by the audit team during the

audit were compiled and conveyed to the licensee during the exit meeting. These observations are neither findings nor violations; however, they will be used to inform the NRC staff assessment of the licensee's walkdown report.

4.1 Observations related to NEI 12-07

The audit team made the following observations that are directly related to the scope of the audit (see Section 2.0).

NEI 12-07, Section 5.5.6, "Procedure Walk-Through and Reasonable Simulation," states that licensees should: (1) perform a walk-through of a procedure or activity to verify the activity or procedure can be executed as specified/written, (2) verify that the execution of the activity will not be impeded by the event it is intended to mitigate or prevent, and (3) perform activities as part of the walkdowns if they have not been performed previously. Moreover, NEI 12-07, Section 5.7, "Review of Operating Procedures," states that the licensee should ensure appropriate procedures exist for the installation of flood protection features. As part of the audit, NRC staff identified that certain portions of required activities associated with staging and use of the Darley pump were not evaluated using reasonable simulation. Specifically, the staff identified that the following activities were not evaluated using reasonable simulation: refueling of the Darley pump, construction and configuration of scaffolding, and moving the pump to and from locations involving the use of scaffolding. The licensee generated CAP entry AR01534567 to document and address this observation.

NEI 12-07, Section 5.5.6, also states that the licensee was to verify that any credited time dependent activities can be completed in the time available. As described in Section 3.0 of this audit summary, NRC staff had questions regarding the basis for the licensee's estimate of the number of hours required to perform a task associated with detensioning the reactor vessel heads. This issue was identified shortly before the audit exit meeting when, in response to an audit team member's request, the licensee provided outage logs showing the time required to complete the task in previous outages. Based on the logs, the audit team found that the licensee may have underestimated the number of hours required to detension the reactor vessel heads. The audit team presented this issue at the exit meeting. After the exit meeting, the licensee provided a table of timing information to the audit team and the resident inspector at QCNPS conducted an independent review of a sample of timing data. The audit team considered the information provided after the exit and determined that it did not alter its observation regarding the time estimates to detension the reactor vessel heads. The licensee generated CAP entry AR01535654 to document and address this observation.

As noted in Section 3, the audit team identified an issue associated with the sequence for de-energizing electrical loads in the flood emergency procedure relative to the Gantt chart. Based on the Gantt chart, electrical loads were de-energized prior to completion of all activities requiring electrical power. In response to NRC questions, the licensee recognized the error in the Gantt chart task sequencing. Adjusting the sequence required the addition of 15 minutes to the estimate of the time required to perform the entire procedure. However, the revised estimate still indicated that the activities could be completed within the time required with 15 minutes of margin.

4.2 Observations communicated to resident inspectors

The audit team made observations related to the plant response to flooding hazards that were not directly related to the scope of the audit. The observations summarized below were forwarded to the site resident inspectors for followup, if needed.

- The reactor building crane is critical to executing the flood response procedure and represents a single-point failure vulnerability.
- The sealing of the tank vents for the emergency diesel generators early in the timeline of the flood event may make them unavailable and inoperable earlier than necessary.
- The audit team observed that the site declares an emergency action level when flood waters reach a predefined elevation near site grade rather than declaring an emergency action level when the plants begins a shutdown due to a flood-related emergency.
- The final safety analysis report is ambiguous with respect to when the plant must be shut down in the 3 days before the flood waters are predicted to arrive onsite.
- There is ambiguity in existing procedures regarding the initiation of a 2-hour flood watch for flood monitoring. Per the reviewed procedure, a flood watch is initiated when a defined river level is reached. However, the reading is only done once per day by chemistry staff. Thus, it is possible for the licensee to initiate a 2-hour flood watch nearly a day after the entry condition (i.e., defined river level) is met.

5.0 Potential Request for Additional Information

As noted in Sections 3 and 4, the audit team identified an issue related to estimates of time required to perform activity associated with reactor disassembly. The NRC staff is considering whether it needs additional information to complete its review of the licensee's walkdown report regarding the basis for time estimates developed to determine the feasibility of required actions associated with reactor disassembly. If additional information is needed, the NRC will request through a separate correspondence.

6.0 Conclusions

The audit provided the audit team with information that is relevant to the NRC staff assessment of the licensee's walkdown report. This audit summary will be used as an input to the staff assessment.

If you have any questions, please contact me at 301-415-1380 or by e-mail at Blake.Purnell@nrc.gov.

Sincerely,

/ RA /

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

Docket Nos. 50-254 and 50-265

Enclosure:
Audit Report

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