



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

March 10, 2015

EA-14-100

Mr. George H. Gellrich, Site Vice President
Calvert Cliffs Nuclear Power Plant, LLC
Exelon Generation Company, LLC
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 2 – NRC SUPPLEMENTAL
INSPECTION REPORT 05000318/2015008 AND ASSESSMENT FOLLOW-UP
LETTER

Dear Mr. Gellrich:

On February 6, 2015, the U. S. Nuclear Regulatory Commission (NRC) completed a supplemental inspection pursuant to Inspection Procedure (IP) 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," at your Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Unit 2. The enclosed inspection report (IR) documents the inspection results, which were discussed on February 6, 2015, with you and members of your staff.

As required by the NRC Reactor Oversight Process Action Matrix, this supplemental inspection was conducted because a finding of low to moderate safety significance (White) was identified in the second quarter of 2014. This issue was documented previously in NRC IR 05000317/2014003 and 05000318/2014003 (ML14219A624), dated August 8, 2014, and involved Exelon Generation Company's failure to maintain in effect an emergency plan that met the standards in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47(b)(4) and the requirements in 10 CFR 50, Appendix E, Section IV.B.1 for Unit 2. The significance of this issue was finalized in NRC IR 05000318/2014010 (ML14297A547), Final Significance Determination for a White Finding with Assessment Follow-Up and Notice of Violation, dated October 27, 2014. The NRC staff was informed on December 19, 2014, of your staff's readiness for this inspection.

The objectives of this supplemental inspection were to provide assurance that: (1) the root causes and the contributing causes of risk-significant performance issues were identified; (2) the extent of condition and extent of cause of risk significant performance issues were identified; and (3) corrective actions for risk significant performance issues are sufficient to address the root and contributing causes and prevent recurrence. The inspection consisted of examination of activities conducted under your license as they related to safety, compliance with the Commission's rules and regulations, and the conditions of your operating license.

G. Gellrich

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Based on the results of this inspection, the NRC concluded that, overall, the supplemental inspection objectives were met and no significant weaknesses were identified. Additionally, no findings of significance were identified.

Based on the guidance in Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," and the results of this inspection, the White Finding will be closed and Calvert Cliffs Unit 2 will transition from the Regulatory Response Column of the NRC's Action Matrix to the Licensee Response Column at the beginning of the second calendar quarter of 2015.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket No. 50-318
License No. DPR-69

Enclosure: Inspection Report 05000318/2015008
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-318

License No. DPR-69

Report No. 05000318/2015008

Licensee: Exelon Generation Company, LLC (Exelon)

Facility: Calvert Cliffs Nuclear Power Plant, Unit 2

Location: Lusby, MD

Dates: February 2, 2015 through February 6, 2015

Inspectors: S. Barber, Senior Project Engineer, Lead Inspector
E. Burket, Emergency Preparedness Inspector

Approved by: Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000318/2015008; 02/02/2015 – 02/06/2015; Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Unit 2; Supplemental Inspection – Inspection Procedure (IP) 95001

A senior project engineer from the Division of Reactor Projects and an emergency preparedness inspector from the Division of Reactor Safety performed this inspection. No significant weaknesses or findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5, dated February 2014.

Cornerstone: Mitigating Systems

The NRC staff performed this supplemental inspection in accordance with IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," to assess Exelon's evaluation associated with a performance deficiency described in Inspection Reports 05000317/2014003 and 05000318/2014003 dated August 8, 2014. The performance deficiency was associated with Exelon's failure to maintain in effect an emergency plan that met the standards in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47(b)(4) and the requirements in 10 CFR 50, Appendix E, Section IV.B.1 for Unit 2. Specifically, during the replacement of the Unit 2 main steam line radiation monitors (MSLRMs), Exelon staff at Calvert Cliffs inaccurately calculated the effluent threshold radiation levels for a General Emergency and incorporated the threshold into its Emergency Action Levels (EALs). This error could have resulted in an over-classification of an event, potentially resulted in an unnecessary protective action recommendation, and could have caused offsite response organizations to implement unnecessary protective actions.

Based on the results of the inspection, the inspectors concluded that Exelon had adequately performed root cause analyses of the event. The inspectors noted that corrective actions, both completed and planned, were reasonable to address the underlying and related issues. Based on the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," dated November 20, 2014, and the results of this inspection, the White Finding will be closed and Calvert Cliffs Unit 2 will transition from the Regulatory Response Column of the NRC's Action Matrix to the Licensee Response Column at the beginning of the second calendar quarter 2015 (April 1, 2015). (Section 4OA4)

REPORT DETAILS

4. OTHER ACTIVITIES

4OA4 Supplemental Inspection (IP 95001)

.1 Inspection Scope

The NRC staff performed this supplemental inspection in accordance with IP 95001 to assess Exelon's evaluation of a White Finding, which affected the Emergency Preparedness cornerstone in the Reactor Safety strategic performance area. The inspection objectives were to:

- Provide assurance that the root and contributing causes of risk-significant performance issues were understood;
- Provide assurance that the extent of condition and extent of cause of risk-significant issues were identified; and
- Provide assurance that corrective actions for risk-significant issues were sufficient to address the root and contributing causes and prevent recurrence.

Calvert Cliffs entered the Regulatory Response Column of the NRC's Action Matrix retroactive to the second calendar quarter of 2014 as a result of one inspection finding of low to moderate (White) safety significance. The performance deficiency associated with inaccurate setpoint determination and subsequent implementation of incorrect values for the Unit 2 MSLRM EAL was identified in NRC Inspection Reports 05000317/2014003 and 05000318/2014003 dated August 8, 2014, for Exelon's failure to maintain in effect an emergency plan that met the standards in 10 CFR 50.47(b)(4) and the requirements in 10 CFR 50, Appendix E, Section IV.B.1 for Unit 2. The finding was characterized as having low to moderate (White) safety significance based on the results of the staff's risk evaluation, performed using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," which determined the significance of the finding as discussed in NRC Inspection Report 05000318/2014010 (ML14297A547), Final Significance Determination for a White Finding with Assessment Follow-Up and Notice of Violation, dated October 27, 2014.

On December 19, 2014, Exelon staff informed the NRC that the station was ready for the 95001 supplemental inspection. Previously, in May 2014, Exelon staff completed a Root Cause Analysis Report (RCAR) for Condition Report (CR) 2014-003573 which examined the causes that lead to the inaccurate setpoint determination and subsequent implementation of incorrect values for the Unit 2 MSLRM EAL on October 10, 2013. The scope of this RCAR included an evaluation of the clarity and traceability of the references in the EAL Technical Bases, the process utilized to perform the calculations, the process utilized to perform the review of the calculations, and risk recognition behaviors associated with the development process and approval of the calculations. This RCAR attributed the root cause to site leadership not adequately managing risk commensurate with the potential consequence associated with an inadequate EAL revision. This RCAR also noted that the lack of programmatic defenses for the EAL revision process as a contributing cause.

Subsequently, in October 2014, Exelon staff initiated a gap analysis of the original RCAR to assess the variances between this RCAR and NRC's October 27, 2014, letter, and determined that a new independent root cause evaluation effort was appropriate to close the identified gaps. This new review was performed using the same CR number as the original RCAR (CR 2014-0035730). Exelon staff completed this new effort in December 2014 and attributed the root cause to personnel involved in the oversight, development, and implementation of the MSLRMs modification, specifically, the revised EAL thresholds, did not recognize and manage the risk associated with changes that could impact the effectiveness of the Emergency Plan. The following two contributing causes were also identified: 1) Less than adequate controls of technical basis documents by Emergency Preparedness associated with EAL threshold values, and 2) Station barrier analyses performed by Emergency Preparedness for operating experience failed to identify gaps in site programs related to control of EAL thresholds.

The inspectors reviewed the RCARs referenced above, in addition to other documents listed in the attachment, which supported Exelon's actions to address the White Finding. The inspectors reviewed corrective actions, both completed and planned, to address the identified causes, extent of condition, and extent of cause. The inspectors also interviewed Exelon personnel to ensure that the root and contributing causes, and the contribution of safety culture components, were understood; and corrective actions taken or planned were appropriate to address the causes and prevent recurrence. Lastly, the inspectors conducted in-plant walkdowns, which included independent inspection of the MSLRM displays and how the operations staff would use the Unit 2 MSLRM system readings to determine when EAL entry was appropriate.

.2 Evaluation of the Inspection Requirements

02.01 Problem Identification

- a. IP 95001 requires that the inspection staff determine that Exelon's evaluation of the issue documents who identified the issue (i.e., licensee-identified, self-revealing, or NRC-identified) and under what conditions the issue was identified.

The inspectors determined that Exelon's revised RCAR adequately documented who identified the issue and under what conditions the issue was identified. Specifically, the RCAR described that on March 4, 2014, while implementing a modification of the MSLRM system for Unit 1, Exelon identified errors in the Unit 2 EAL threshold values for the MSLRM modification implemented on October 10, 2013. These errors related to inappropriately using the accident source term instead of the normal source term when calculating the new EAL threshold values.

- b. IP 95001 requires that the inspection staff determine that Exelon's evaluation of the issue documents how long the issue existed and prior opportunities for identification.

The inspectors determined that both the original and revised RCAR adequately documented how long the issue existed and prior opportunities for identification. The RCAR documented that industry operating experience reviews performed associated with EAL thresholds were insufficient to identify gaps in programs related to the control of EAL thresholds. Specifically, the RCAR identified NRC Information Notice (IN) 13-01, "Emergency Action Level Thresholds outside the Range of Radiation Monitors," and

IN 13-13, “Deficiencies with Effluent Radiation Monitoring System Instrumentation,” as being applicable to this issue. The inspectors noted that a more thorough review of this operating experience may have prevented the calculation error.

Additionally, the inspectors determined that Exelon appropriately focused on the Unit 2 MSLRM replacement project timelines and milestones for potential prior opportunities to identify the issue. Exelon identified several instances during the Unit 2 MSLRM replacement project planning process where the Emergency Preparedness organization was not considered a stakeholder. However, the inspectors noted that although the Emergency Preparedness organization was not specifically identified as a stakeholder, they were aware of the Unit 2 MSLRM replacement project and had opportunities to ensure EAL threshold calculations were addressed.

- c. IP 95001 requires that the inspection staff determine that Exelon’s evaluation documents the plant specific risk consequences, as applicable, and compliance concerns associated with the issue.

The inspectors determined that Exelon’s evaluation adequately documented the plant specific risk consequences, as applicable, and compliance concerns associated with the issue. Specifically, Exelon’s RCAR evaluated the risk associated with an over-classification of an EAL using the evaluation criteria in IMC 0609, Appendix B, and determined the impact of the calculation error involved the potential to recommend offsite protective actions, including evacuation, when not warranted by actual plant conditions.

- d. Findings

No findings were identified.

02.02 Root Cause, Extent of Condition, and Extent of Cause Evaluation

- a. IP 95001 requires that the inspection staff determine that Exelon evaluated the issue using a systematic methodology to identify the root and contributing causes.

The inspectors determined that Exelon evaluated the White Finding using a systematic methodology to identify root and contributing causes. The inspectors verified that Exelon staff implemented CNG-CA-1.01-1004, “Root Cause Analysis,” as well as CNG-CA-1.01-GL002, “Causal Analysis Handbook,” in the conduct of the station’s causal analyses to identify the root and contributing causes. The station utilized the following systematic methods when investigating and reviewing the issue:

- Data gathering through interviews and document review,
- Comparative Timeline,
- Event and Causal Factor Charting,
- Taproot, and
- Cause Road Map Analysis.

The inspectors verified these methods were completed by reviewing attachments to the RCAR document, and verified that the root and contributing causal conclusions were consistently understood and supported by Exelon staff through the conduct of interviews.

- b. IP 95001 requires that the inspection staff determine that Exelon's root cause analysis was conducted to a level of detail commensurate with the significance of the issue.

The inspectors determined that Exelon's root cause evaluation was conducted to a level of detail commensurate with the significance of the White Finding. Consistent with CNG-CA-1.01-1004, "Root Cause Analysis," as well as CNG-CA-1.01-GL002, "Causal Analysis Handbook," Exelon conducted a root cause analysis that identified the root and contributing causes associated with the implementation of incorrect values for the Unit 2 MSLRM EAL on October 13, 2013.

The original root cause that was completed in May 2014 was staffed by five independent members and a sponsoring manager. The revised root cause that was completed in December 2014 was staffed by seven independent members and a sponsoring manager. This team's composition was also independent from the original root cause team. The revised root cause team expanded on and modified the conclusions of the original root cause team.

- c. IP 95001 requires that the inspection staff determine that Exelon's root cause analysis included a consideration of prior occurrences of the issue and knowledge of operating experience.

The inspectors determined that both of Exelon's RCARs included a review of relevant operating experience and a consideration of prior occurrences of the issue. The original and the revised root cause teams noted that that plant staff reviewed NRC IN 2013-01, "Emergency Action Thresholds Outside the Range of the Radiation Monitors System Instrumentation," and IN 2013-13, "Deficiencies with Effluent Radiation Monitoring System Instrumentation," during the station's implementation of the 2009 Nuclear Energy Institute (NEI) 99-01, Revision 4, EAL Scheme. The teams noted that the station missed an opportunity to identify the incorrect EAL threshold values prior to returning the Unit 2 MSLRM to service occurred in September 2013, when a CR (CR-2013-007280) associated to NRC IN 2013-13 was initiated by the Radiation Monitoring System Engineer requesting additional reviews of conversion factors to ensure accuracy. This CR was evaluated stating that the MSLRMs had recently been replaced and the conversion factors were found to be correct. No additional review was performed by Design Engineering and no evaluation was performed of assumptions used. CR-2014-0004291 was written to review this issue. The revised RCAR also described a previous similar EAL-related event that decreased the effectiveness of the Emergency Plan. In 2009, NRC identified a White Finding when plant staff revised EALs to implement the NEI 99-02 Revision 4 EAL scheme which included several changes that reduced the effectiveness of the CCNPP emergency plan. The root cause of this event was that the organization did not recognize or understand the true scope of the project because a structured review and assessment process was not adequately implemented to assure all the NUMARC/NESP-007 based EALs were accurately converted to the NEI 99-01, Revision 4 based EAL scheme. This lack of structure effectively resulted in virtually no assessment of the accuracy of the conversion product. This event was documented in NRC Inspection Reports 05000317/2008502 and 05000318/2008502 dated April 3, 2009 (EA 08-352)

The inspectors noted that while these examples demonstrate thoroughness in the root cause evaluation process, they highlight examples where the station has missed opportunities to apply proper rigor in identifying, evaluating, and correcting emergency preparedness issues.

- d. IP 95001 requires that the inspection staff determine that Exelon's root cause analysis addresses the extent of condition and extent of cause of the issue.

Exelon's revised root cause determined that the extent of condition of interest was that the EAL threshold values for the MSLRMs were inaccurately calculated. Thus, their extent of condition review considered other recent Radiation Monitoring System (RMS) design modifications and current RMS modification in progress. Exelon reviewed actions taken for other RMS modifications during this period which included Liquid Waste Radiation Monitoring System (0-RE-2201) and Seismic Monitors (0RY1C26B) and modifications that were progress (Main Vent equipment replaced under engineering change package (ECP)-13-000811 for Unit 1 and ECP-14-000869 for Unit 2).

Exelon staff initiated the following actions to address their extent of condition review:

- Validated that the correct EAL thresholds and associated alarm setpoints were established for the Liquid Waste Radiation Monitoring System (0-RE-2201) and Seismic Monitors (0RY1C26B) modifications.
- Confirmed that Exelon staff used HU-AA-1212, "Technical Task Risk/Rigor Assessment, Pre-Job Brief, Independent Third Party Review and Post-Job Review," in the preparation and approval of EAL calculation for the Main Vent equipment replaced under ECP-13-000811 for Unit 1 and ECP-14-000869 for Unit 2. The calculation was in progress as of the completion of this inspection.
- Validated that all EAL Table R-1 Radiation Monitors have correct EAL thresholds and associated alarm setpoints and/or action levels based on detector response.
- Validate all bases documentation, including all assumptions and methodologies that are not controlled by a formal design process related to the EAL threshold values are correct, accessible, and documented in bases files and plant history. This effort was in progress as of the completion of this inspection.
- Revise EPRIP-821 with corrected release coefficients for dose assessment.

Exelon's revised root cause identified two extent of cause issues: 1) identified potential weaknesses in control of technical bases documents in other site departments, and 2) the review of operating experience by the Emergency Preparedness organization has lacked the necessary rigor.

Exelon staff initiated the following actions to address their extent of cause review:

- Departments which had the potential to maintain basis documents outside of FCMS (their controlled document system) and that are associated with the operation/maintenance of plant equipment need to initiate action to ensure that basis documents are adequately maintained. (CA-000698/699/700/701)
- Validate all bases documentation, including all assumptions and methodologies that are not controlled by a formal design process related to the EAL threshold values are correct, accessible, and documented in bases files and plant history. (1700179-21)
- Perform OPEX Level 3 Quality Review Analysis for NRC generic communications related to the Emergency Plan Program since 2012 (excluding Fukushima). Based on results, determine if further actions are warranted and create issue report to track completion. (01700179-22)

- OPEX - Perform a statistically valid sampling of NRC generic communications (excluding Fukushima) to determine extent of cause across site organizations since 2012 using fleet CFAM quality review criteria in PI-AA-115-1003. (01700179-23)

The inspectors determined that Exelon's root cause evaluation appropriately addressed the extent of condition and extent of cause of the issue. The inspectors also noted that Exelon staff had corrective action underway to validate all bases documentation, including all assumptions and methodologies that are not controlled by a formal design process related to the EAL threshold values are correct, accessible, and appropriately documented.

The inspectors also noted that Exelon staff used HU-AA-1212 in the preparation and approval of EAL calculation for the Main Vent equipment. Exelon staff provided examples where this procedure was recently used on a number of plant projects to ensure that an appropriate level of review, up to and including, independent off-site review was used for variety projects from simple to complex. Exelon staff also asserted that if the personnel that were involved in the oversight, development, and implementation of the MSLRMs modification, specifically the revised EAL thresholds, used this tool then it would have been highly unlikely that the calculation error would have occurred.

The inspectors noted that the validation of the EAL design basis and their implementation of the modification for the Main vent equipment as significant opportunities to demonstrate the effectiveness of their proposed corrective action for the issue.

- e. IP 95001 requires the inspection staff to determine that Exelon's root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture components as described in IMC 0305, "Operating Reactor Assessment Program."

The inspectors noted that Exelon performed the evaluation of the safety culture components in accordance with station procedure which consisted of evaluating the root cause, extent of condition, and extent of cause evaluations against the 13 Safety Culture Components described in Regulatory Issue Summary 2006-13. Exelon then compared the results of this review against the new safety culture components implemented by the NRC on January 1, 2014 (IMC 0310). Based on the review, the defined safety culture component that contributed most was:

- H.12, Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction techniques. [H4.A]

The following safety culture components were viewed as contributing to the event was:

- H.11 - Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. [QA.2]
- H.13 - Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. [DM.1]
- H.1 - Resources: Leaders ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. [LA.1]
- P.5 - Operating Experience: The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner. [CL.1]

The inspectors determined that Exelon's root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture components as described in IMC 0305.

f. Findings

No findings were identified.

02.03 Corrective Actions

- a. IP 95001 requires the inspection staff to determine that (1) Exelon specified appropriate corrective actions for each root and/or contributing cause, or (2) an evaluation that states no actions are necessary is adequate.

Overall, the inspectors found that Exelon specified appropriate corrective actions for each root cause, contributing causes, extent of condition, and extent of cause for the White Finding. Exelon's corrective actions to address the root and contributing causes were assigned in accordance with station procedures CNG-CA-1.01-1004, "Root Cause Analysis." The inspectors noted that Exelon, although not required, completed all of the key corrective actions prior to the 95001 supplemental inspection, which included:

- Declaring that the Unit 1 and 2 MSLRM systems were non-functional, and therefore were not to be used for determining entry into EALs or used for dose assessment. Exelon assured that timely and accurate EAL classifications and protective action recommendations resulting from a steam generator tube rupture event would be made using (1) the appropriate fission product barrier EALs and (2) field survey results reported to the dose assessment office following activation of the augmented emergency response organization using the appropriate offsite radiological conditions EALs. This process was used until the underlying calculation was corrected with new EAL thresholds established in November 2014. The delay in implementing the new EAL threshold values was considered acceptable because this method was previously described in the NRC approved Calvert Cliffs Emergency Plan.
- Implementing EP-AA-120 and EP-AA-120-1005, "Emergency Preparedness Calculations and Position Papers." These procedures were forerunners to the implementation of HU-AA-1212, "Technical Task Risk/Rigor Assessment, Pre-Job Brief, Independent Third Party Review and Post-Job Review," which is what Exelon staff is using to review plant projects to ensure that an appropriate level of review, up to and including, independent off-site review is required prior to implementing the underlying project.
- Conducting site wide operational experience briefing on the use of HU-AA-1212, "Technical Task Risk/Rigor Assessment, Pre-Job Brief, Independent Third Party Review and Post Job Review," for potentially complex site projects or activities

Overall, the inspectors determined that these completed corrective actions were appropriate. These and the other corrective actions planned adequately address the root and contributing causes.

- b. IP 95001 requires that the inspection staff determine that Exelon prioritized corrective actions with consideration of risk significance and regulatory compliance.

The inspectors noted that Exelon appropriately prioritized corrective actions with due consideration of risk significance and regulatory compliance. In this instance, plant staff implemented immediate compensatory measures until the EAL threshold calculation could be revised because events in which the Emergency Plan will be assumed to occur.

- c. IP 95001 requires that the inspection staff determine that Exelon established a schedule for implementing and completing the corrective actions.

The inspectors determined that Exelon established an appropriate schedule for implementing and completing the corrective actions. Key corrective actions were completed prior to the inspection, while longer term corrective actions were reviewed by the inspectors and determined to have appropriate due dates.

- d. IP 95001 requires that the inspection staff determine that Exelon developed quantitative and/or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence.

The inspectors determined that Exelon developed adequate quantitative and qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence. Some of these measures included

- Performing an assessment of changes made to the Emergency Plan from December 2014 and November 2015 to verify EP-AA-120, "Emergency Plan Administration," and EP-AA-120-1005, "Emergency Preparedness Calculations and Position Papers," were followed.
- Validating use of HU-AA-1212, "Technical Task Risk/Rigor Assessment, Pre-Job Brief, Independent Third Party Review, and Post-Job Review," six months after operational experience briefing by surveying staff on three occasions when they you considered using HU-AA-1212, and specific examples of when plant staff used the procedure prior to conducting a technical task

- e. IP 95001 requires that the inspection staff determine that Exelon's planned or taken corrective actions adequately address a Notice of Violation (NOV) that was the basis for the supplemental inspection.

On October 27, 2014, the NRC issued an Final Significance Determination for a White Finding with Assessment Follow-Up and NOV to Exelon which was discussed in NRC Inspection Report 05000318/2014010. Exelon restored compliance by immediately initiating compensatory action as described in Section 02.03b above. During this inspection, the inspectors confirmed that Exelon's planned and taken corrective actions adequately addressed the NOV.

- f. Findings

No findings were identified.

4OA6 Exit Meeting and Regulatory Performance Meeting

On February 6, 2015, the inspectors presented the inspection results to Mr. George Gellrich, Site Vice President, and other members of his staff, who acknowledged the inspection results. The inspectors asked Exelon if any of the material examined during the inspection should be considered proprietary. Exelon did not identify any proprietary information.

Upon completion of the exit meeting, a Regulatory Performance Meeting was conducted in accordance with IMC 0305. The meeting was led by the Reactor Projects Branch 6 Chief, Mr. Silas Kennedy, and attended by Mr. George Gellrich, Site Vice President, and other members of his staff. The purpose of the meeting was to discuss Exelon's corrective actions in response to the White Finding and NOV, and acknowledge the transition of Calvert Cliffs from the Regulatory Response Column of the NRC's Action Matrix to the Licensee Response Column, effective at the beginning of the second quarter of 2015 assuming no other action matrix inputs in the intervening time frame.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

- G. Gellrich, Site Vice President
- M. Flaherty, Plant General Manager
- P. Amos, Manager, Emergency Preparedness
- D. Lauver, Manager, Site Regulatory Assurance
- M. Fick, Principal Regulatory Engineer
- M. Robinson, Health Physicist
- E. Kreauling, System Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Closed

05000317/318/2014003-03	NOV	Inadequate EAL Initiating Condition
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LIST OF DOCUMENTS REVIEWED

Root Cause Analyses Reports (RCARs)

- RCAR for CR 2014-003573, dated 5/7/2014, Inaccurate Unit 2 Main Steam Line Rad Monitor Emergency Action Level Threshold Values Implemented
- RCAR for CR 2014-003573, Rev. 1, dated 12/8/2014, Inaccurate Unit 2 Main Steam Line Rad Monitor Emergency Action Level Threshold Values Implemented

Procedures

- CNG-EP-1.01-1004, Rev. 00300, 10 CFR 50.54(q) Effectiveness Reviews
- PI-AA-125-1001, Rev. 0, Root Cause Analysis Manual
- EP-1-301, Rev. 00200, Changes to EPIPs and Emergency Response Plan
- EP-1-110, Rev. 00000, Additional Guidance to Emergency Preparedness Procedure Process
- CNG-CM-1.01-2000, Technical Task/Risk Rigor Assessment and Pre-Job Brief
- CNG-HU-1.01-1003, Human Performance Tools for Non-Field Technical Activities
- CNG-CA-1.01-GL002, Causal Analysis Handbook
- HU-AA-1212, Rev. 4, Technical Task Risk/Rigor Assessment, Pre-Job Brief, Independent Third Party Review and Post-Job Review
- EP-AA-120, Rev. 16, Emergency Plan Administration
- EP-AA-120-1005, Rev. 0, Emergency Preparedness Calculations and Position Papers
- CNG-EP-1.01-1023, Rev. 00000, CCNPP Dose Assessment

Condition Reports

- | | |
|-------------|-------------|
| IRE-027-361 | |
| 2009-007522 | 2014-002417 |
| 2013-006858 | 2014-004291 |
| 2013-007280 | 2014-007297 |

Action Reports

00244578	02418989
02418993	02418998
02422805	02448635*

**Issued as a result of NRC inspection*

CAs for Condition Reports

2014-00634	2014-00692
2014-00693	2014-00694
2014-00695	2014-00696
2014-00697	2014-00698
2014-00699	2014-00700
2014-00701	2014-00713-001
2014-00713-002	2014-00713-003
2014-00713-004	01700179-16
01700179-17	01700179-19
01700179-20	01700179-22
01700179-23	01700179-24
01700179-25	01700179-28
01700179-29	01700179-30
01700179-32	01700179-34
01700179-35	01700179-36
01700179-54	01700179-55

NRC Information Notices

2005-19, Effect of Plant Configuration Changes on the Emergency Plan
 2013-01, Emergency Action Thresholds Outside the Range of the Radiation Monitors
 2013-13, Deficiencies with Effluent Radiation Monitoring System Instrumentation

Miscellaneous

EAL Technical Basis Document, Rev. 00000, Category R – Abnormal Rad Levels/Rad Effluents
 20140225-00023, 50.54(q) Screening Form (Tracking No. 2013-28)
 Initial MSLRM Calculation dated 10/7/2013
 Revised MSLRM Calculation dated 11/11/2014
 EAL-HOT Wall Chart, Rev. 00300 and 00400
 Areva Review of MSLRM EAL Criteria, dated April 3, 2014
 ERPIP-821, Rev. 00800, Accident Radioactivity Release Monitoring and Sampling Methods
 EP-CALC-0001 EAL Criteria Calculation Bases (Old & New)
 Calvert Cliffs Nuclear Power Plant Accident Source Terms, Rev. 2, April 1990
 ECP-12-00790, Engineering Change Package for Unit 2 MSLRMs, including the need to update
 EP procedures
 Plant Operations Review Committee (PORC) Meeting No. 13-038, dated 9/25/13
 PORC Meeting No. 13-041, dated 10/9/2013
 Station Update Alignment Meetings dated 12/5/14, 12/11/14, 12/17/14, 12/18/14, 1/8/15,
 1/15/15, and 1/22/15
 February 2015 EP Newsletter

LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
Calvert Cliffs	Calvert Cliffs Nuclear Power Plant
CR	condition report
EAL	Emergency Action Level
ECP	engineering change package
Exelon	Exelon Generation Company, LLC
IN	Information Notice
IP	Inspection Procedure
IMC	Inspection Manual Chapter
MSLRM	main steam line radiation monitor
NEI	Nuclear Energy Institute
NOV	Notice of Violation
NRC	U. S. Nuclear Regulatory Commission
RCAR	root cause analysis report
RMS	radiation monitoring system