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Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Subject: Response to Preliminary White Finding in Inspection Report No. 50-317(318)/2014-003

Reference: 1. Letter from Ho K. Nieh (NRC) to George H. Gellrich (Exelon), dated August 8, 2014, Calvert Cliffs Nuclear Power Plant – NRC Integrated Inspection Report 05000317/2014003 and 05000318/2014003 with Preliminary White Finding

On August 8, 2014, Calvert Cliffs Nuclear Power Plant (CCNPP), LLC received the Nuclear Regulatory Commission Integrated Inspection Report (Reference 1) describing a preliminary White finding associated with the site's failure to maintain in effect an emergency plan that met the requirements of 10 CFR 50.47(b)(4) and 10 CFR Part 50, Appendix E, for Unit 2 between the dates of October 11, 2013 and March 4, 2014. Specifically, during the replacement of the Unit 2 Main Steam Line Radiation Monitors (MSLRMs), Calvert Cliffs' staff inaccurately calculated the associated Emergency Action Levels (EALs) effluent threshold values for Alert, Site Area Emergency, and General Emergency (GE), and incorporated these thresholds into the EALs.

Exelon appreciates the opportunity to provide its perspective on this matter through this written response. Exelon fully understands the importance of maintaining an effective Emergency Plan to protect the health and safety of the public and plant personnel and concurs with the performance deficiency and apparent violation as identified in Reference 1; however, Exelon believes this condition posed minimal risk to the health and safety of the public and had very low overall safety significance.

The incorrect EAL threshold values for the Unit 2 MSLRMs were identified by Exelon while preparing for the same MSRLM upgrade for Unit 1. On determining that the Unit 2 MSLRM EAL threshold values were inappropriately low, Exelon immediately documented the issue in its corrective action program and promptly implemented appropriate compensatory measures. The

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compensatory measures utilized pre-planned, procedurally captured actions that rely on other installed plant radiation monitors unaffected by this issue and/or by field readings taken and evaluated by trained Emergency Response Organization staff.

A causal analysis was completed in May 2014 that rigorously evaluated this event. The cause of this event was determined to be that site leadership did not manage risk commensurate to the potential consequences associated with an inaccurate EAL revision. Specifically, management did not appropriately manage the change with the appropriate amount of technical rigor. Additionally, assessments of the extent of condition and extent of cause were completed to ensure that all learnings from this event were fully captured and acted upon. Corrective actions have been completed, which include application of Exelon's existing, formal process to ensure the appropriate technical task risk/rigor controls are applied when revising the EALs. This process requires the evaluation of consequence, human performance, and process risk factors in determining the required methods to be used to ensure the correct amount of rigor is applied to prevent errors. This improved level of risk/rigor has been used in the determining the revised Unit 2 and new Unit 1 MSLRM EAL threshold values. These values will be implemented once the applicable monitors are modified to adequately support the required range of indication. The new MSLRM EAL threshold values for both units are planned to be implemented by October 10, 2014.

The following provides support of Exelon's position that this issue is more appropriately characterized as a finding of lesser significance. The position is prominently based on documented studies regarding the ability to safely evacuate the public during an event; suggesting this to be a less significant outcome when compared to missing or delaying the classification of a GE and not evacuating the public in a timely manner.

As stated previously, Exelon concurs with the performance deficiency and apparent violation as identified in Reference 1; however, Exelon disagrees with the characterization of the finding having low to moderate safety significance (White). On the contrary, Exelon believes this condition posed minimal risk to the health and safety of the public. Inspection Manual Chapter 0308, Attachment 3, Appendix B, Technical Basis for Emergency Preparedness Significance Determination Process, provides the following with respect to determination of a finding of a lesser significance:

"The (Emergency Preparedness) EP (Significance Determination Process) SDP provides guidance for the inspector to consider diverse and/or redundant (Program Elements) PE, MITIGATING FACTORS, and COMPENSATORY MEASURES, taken in determining if the affected (Planning Standard) PS FUNCTION would still be accomplished, albeit in a degraded manner, thereby justifying a lesser significance."

Furthermore, the consequences of evacuating the public have been demonstrated to be considerably less significant when compared to the significance of delaying or not declaring a General Emergency.

NUREG/CR-6864, Volume 1, Identification and Analysis of Factors Affecting Emergency Evacuations, studied the efficiency and effectiveness of public evacuations of 1,000 or more people, in response to a number of events such as natural disasters and technology hazards. The study concluded that safely evacuating people from the affected area saved lives and reduced the potential number of injuries from the hazard. The study also identified a high level of cooperation among agencies, use of multiple forms of emergency communications, and well-

trained emergency responders contributed to the efficiency and effectiveness of the evacuation – all of which are attributes of Exelon's Emergency Plans.

Additionally, NUREG/CR-6042, Perspectives on Reactor Safety (SAND93-0971), Revision 2, Section 5.3 Protective Actions, discusses the following regarding the relative consequences between evacuating and not evacuating a given population:

"Objections have been raised to evacuation because of fears of panic or injuries during the evacuation...on the average, it would be far less risky for a person to evacuate than to remain within 2 to 3 miles of a nuclear power plant experiencing a severe core damage accident."

Another potential outcome that bears consideration regarding the significance of this issue is that the same set of plant conditions that would have led to the over-classification of a GE declaration as a result of the inaccurately low Unit 2 MSLRM EAL threshold values, could have resulted in an acceptable GE classification through assessment of the station's Fission Product Barrier Matrix in the EALs. The acceptable GE classification would have required the use of the judgment threshold under the loss or potential loss initial conditions in assessing the fuel clad barrier, along with the recognized loss of the reactor coolant system and containment barriers due to specific, non-judgmental thresholds.

Finally, upon review of similar findings issued by the Nuclear Regulatory Commission for radiation monitor threshold errors, White findings have been typically assessed to licensees where the radiation monitor EAL threshold values were incorrectly high or off-scale. In such a case, a GE declaration would have been delayed and protective action recommendations would not have been immediately implemented. Considering the difference in consequences between the two situations, Exelon contends that the significance of the Calvert Cliffs issue would be more appropriately characterized as a finding with very low safety significance based on the minimal impact of the error from prematurely or unnecessarily evacuating a portion of the population within the emergency planning zone.

Exelon is mindful of the risks to the public associated with an evacuation; however, Exelon believes the actual safety risk posed to the public from this issue to be very low, and is therefore more appropriately characterized as a less significant finding.

There are no regulatory commitments contained in this correspondence.

Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219.

Respectfully,



GHG/MJF/bjd
Site Vice President

cc: NRC Project Manager, Calvert Cliffs
NRC Regional Administrator, Region I

NRC Resident Inspector, Calvert Cliffs
S. Gray, MD-DNR