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Subject: Comments on Draft Regulatory Guide (RG) DG-1327, "*Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents*" (*Federal Register* 84FR36961, dated July 30, 2019, Docket ID NRC-2016-0233)

This letter is being submitted in response to the U.S. Nuclear Regulatory Commission's (NRC's) request for comments concerning the subject draft Regulatory Guide (RG) DG-1327, "*Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents*," published in the *Federal Register* (i.e., 84FR36961, dated July 30, 2019).

DG-1327 proposes new guidance for analyzing accidents such Control Rod Ejection (CRE) for Pressurized-Water Reactors (PWRs) and Control Rod Drop (CRD) for Boiling-Water Reactors (BWRs). This draft RG defines fuel cladding failure thresholds for ductile failure, brittle failure, and Pellet-Clad Mechanical Interaction (PCMI) and provides radionuclide release fractions for use in assessing radiological consequences. The draft RG also describes analytical limits and guidance for demonstrating compliance with applicable regulations governing reactivity limits.

Exelon Generation Company, LLC (Exelon) appreciates the opportunity to comment on the subject draft RG and offers the comments below for the NRC's consideration.

General Comments

- Section 2.2.1.4 of the draft RG discusses that the maximum uncontrolled worth of an ejected rod should be calculated based on fully or partially inserted misaligned or inoperable rod or rods if allowed. When referring to the phrase "...fully or partially inserted misaligned or inoperable rod or rods if allowed," Exelon is requesting further clarification regarding whether this is limited to rods in which the safety analysis has been performed to justify its non-normal position, or whether it also includes rods that are dropped or misaligned but are being recovered within the associated Technical Specifications (TS) Limiting Conditions for Operation (LCO) Completion Times (CTs).

- Section 2.2.2.4 of the draft RG discusses that the maximum uncontrolled worth for a dropped blade should be calculated based on the following conditions: (1) the range of control blade positions allowed at a given power level, (2) additional fully or partially inserted misaligned or inoperable blades if allowed, and (3) any out-of-sequence control blades that may be inserted for fuel leaker power suppression. When referring to the phrase "...fully or partially inserted misaligned or inoperable rod or rods if allowed...", Exelon is requesting further clarification whether this is also intended to include inoperable blades that have been locked in place and cannot physically move or be dropped in accordance with the associated TS.
- The NRC recently published a Sandia National Laboratories (SNL) technical document entitled, *"Release Fractions in Non-LOCA Accidents in Draft Regulatory Guide 1.183 DG-1199,"* dated April 10, 2019 (ML19094A336). This SNL technical document is dated after the previous revision of DG-1327 was issued (i.e., issued in November 2016) that updated Appendix B, *"Fission Product Release Fractions."* The proposed Appendix B in DG-1327 states: *"...The fission product release guidance contained in Appendix B for CRE and CRD accidents should be used instead of the gap fractions provided in RG 1.183, Revision 0, for a CRE and CRD accident until RG 1.183 is updated."* There appears to be an extensive overlap between the two documents. If DG-1327 steady-state and transient gap releases supersede the NRC's previous positions, Exelon recommends that DG-1327, Appendix B, should acknowledge this fact in an effort to prevent any misunderstanding of the NRC's expectations regarding the gap release assumptions that are acceptable under use of Alternative Source Term (AST). Exelon further recommends that DG-1327 should consider listing the many previous gap release technical basis documents, including ML19094A336, and state that they are superseded by Appendix B of DG-1327, if applicable. This would allow the radiological safety analysis practitioner to have a clear understanding with respect to acceptable NRC guidance related to steady-state and transient gap release fractions.

If you have any questions or require additional information, please do not hesitate to contact Richard Gropp at (610) 765-5557.

Respectfully,



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