August 25, 2016

MEMORANDUM TO: Sunil Weerakkody, Chief
PRA Operations and Human Factors Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Jerrod Demers, Reliability and Risk Analyst ***/RA/***
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SUBJECT: SUMMARY OF JULY 11, 2016 PUBLIC TELEPHONE CONFERENCE BETWEEN U.S. NUCLEAR REGULATORY COMMISSION STAFF AND INDUSTRY TO DISCUSS REGULATORY CHALLENGES ASSOCIATED WITH RISK AGGREGATION

On July 11, 2016, the US Nuclear Regulatory Commission (NRC) staff held a Category 2 public telephone conference (Telecon) to discuss regulatory challenges associated with risk aggregation with representatives of the nuclear industry. The primary objective of this teleconference was to receive industry perspectives of regulatory challenges when aggregated total core damage frequencies (CDF) or total large early release frequencies (LERF) or changes in those risk metrics (ΔCDF, ΔLERF) are near or exceed the acceptance guidelines in risk-informed licensing reviews, or thresholds used in risk significance characterization in the significance determination process (SDP), respectively. The meeting notice is available in the Agencywide Documents Access and Management System (ADAMS) Accession Number ML 16181A098.

During the teleconference, NRC staff provided their perspective to industry on the current challenges associated with risk aggregation. The staff is of the opinion that the summing of means for various risk contributors is the correct approach to aggregation and consistent with the acceptance criteria in RG 1.174. Staff recognizes that when contributions from various hazards are summed, the totals may reach or exceed acceptance guidelines for some licensees. In licensing regulatory activities, licensees whose total risk exceed the guidelines are subject to smaller acceptable risk increases and may be required to present arguments as to why steps should not be taken to reduce risk. The problem can manifest in the Significance Determination Process (SDP) as well. The staff also recognizes that additional detailed guidance on integrated decision making could enhance the predictability of regulatory outcomes. Staff believes that NUREG 1855, “Guidance on the Treatment of Uncertainties

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Associated with PRAs in Risk-Informed Decision Making" (RIDM) provides additional guidance for addressing risk aggregation in both licensing and SDP.

Nuclear Electric Institute, members of the industry, and other stakeholders (Union of Concerned Scientists) participated in the Telecon. Representatives from industry stated their concerns and provided additional details on their proposed approach to seek resolution. Industry also believes that NUREG-1855 provides a technical framework that is useful to address challenges associated with Risk Aggregation. Therefore, industry informed the staff that they would like RG 1.174 to make additional references to NUREG-1855 to improve clarity on how NUREG-1855 will be used by staff in LAR reviews to address risk aggregation. Industry also plans to provide comments on how to integrate key principles of RIDM discussed in RG 1.174 {i.e., numerical results, Defense in Depth, Safety Margins..} in RIDM, in part, to address risk aggregation.

During the teleconference, industry provided additional details on the Pressurized Water Reactor Owner's Group (PWROG) pilots (see Enclosure 1, PWROG Presentation on Risk Aggregation Pilot) and informed NRC staff that they plan to make a draft report on the pilots available in October 2016.

Enclosure 1:
PWROG Presentation on Risk Aggregation Pilot

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Enclosure 1:
PWROG Presentation on Risk Aggregation Pilot

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