




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

February 28, 2018

MEMORANDUM TO: Michelle Kichline, Acting Chief
PRA Operations and Human Factors Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Alexander Schwab, Project Manager
ROP Support and Generic Communications Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation 

SUBJECT: SUMMARY OF THE FEBRUARY 6, 2018, PUBLIC TELECONFERENCE
BETWEEN STAKEHOLDERS AND THE U.S. NUCLEAR REGULATORY
COMMISSION STAFF TO DISCUSS CHALLENGES TO CREDITING
DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) IN RISK-
INFORMED DECISION MAKING

On February 6, 2018, a Category 2 public teleconference was held between the U.S. Nuclear Regulatory Commission (NRC) and stakeholders. The purpose of the teleconference was to discuss key challenges related to crediting diverse and flexible coping strategies (FLEX) in regulatory applications.

The NRC staff started the meeting by discussing their expectations to obtain access to the operational experience data for FLEX consistent with the Commission's PRA policy statement, which states, "PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review." Industry representatives summarized the current progress on this issue and informed NRC staff that the industry Risk Informed Steering Committee (RISC) has assumed the lead role for facilitating the path forward at the next public RISC meeting on February 20th. The industry stated that there were some issues in deriving failure probabilities due to incomplete data and data quality. The NRC staff shared that Idaho National Laboratory (INL), a contractor for the NRC, has resolved similar challenges in data analysis, and it was suggested that industry discuss these issues with INL. Industry was receptive to this idea, and indicated they were already planning on discussing other unrelated data issues with INL. Industry also asked what reliability numbers should be used in the near term for license amendments before sufficient data is obtained. The NRC replied that the guidance is contained in Regulatory Guide (RG) 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" which endorses the ASME/ANS PRA standard with exceptions. Regulatory Guide 1.200 describes one acceptable approach for determining whether the technical adequacy of the PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that the PRA can be used in regulatory decisionmaking for light-water reactors. The NRC has received the industry developed guidance in Nuclear Energy Institute (NEI) 16-06, "Crediting Mitigating Strategies in Risk Informed Decision Making" (Agencywide Documents Access and Management System (ADAMS) Number ML16286A297). It was not requested nor has the NRC pursued endorsement of NEI 16-06. However, an internal NRC memo (ADAMS Accession Number ML17031A269) assessing tier 3 of NEI 16-06

which highlights the gaps as compared to RG 1.200 is publicly available and expresses some of the NRC staff's concerns with the approaches outlined.

The next topic discussed was gaps and limitations in current human reliability analysis (HRA) methods for certain FLEX decisions/actions. The NRC staff discussed their ongoing work to leverage the Integrated Human Event Analysis System (IDHEAS) HRA method, to develop a methodology that uses existing tools building on the strong technical basis that exists for the IDHEAS method. The IDHEAS method is described in NUREG-2199, "An Integrated Human Event Analysis System (IDHEAS) for Nuclear Power Plant Internal Events At-Power Application." The NRC communicated their desire to have industry experts support an expert elicitation that will be used by the NRC to develop the new methodology. The NRC will be supporting the industry by sending NRC staff to participate in the upcoming EPRI HRA workshop to discuss HRA challenges.

The final topic discussed was pre-operational and integrated testing of FLEX equipment. Functionality verification of the FLEX equipment was required as part of the "Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" Order, EA 12-049 (77 FR 16091; March 19, 2012). The NRC staff stated that the testing required by the order may or may not be sufficient for crediting the FLEX equipment in other regulatory activities. The industry discussed the testing requirements found in NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" (ADAMS Accession No. ML12242A378) with an assertion that if the use of the equipment is the same as specified in the FLEX strategies, the testing required for the orders should be sufficient. The industry also stated that the guidance contained in NEI 16-08, "Guidance for Optimizing the Use of Portable Equipment" is not intended to be used to justify the use of portable equipment to satisfy the minimum design basis requirements identified in the plant technical specifications or the accident analysis portion of the plant Final Safety Analysis Report and is only intended to be used to identify appropriate compensatory measures and defense-in-depth strategies using portable equipment. As with NEI 16-06, the NRC has received a copy of NEI 16-08 for information only, without a request for endorsement. The NRC staff stated that there could be situations where the testing required by NEI 12-06 may very well be sufficient, but there have been applications submitted where the use was significantly different than the strategies defined by NEI 12-06 and it should not be assumed that the testing requirements are appropriate. The NRC staff reinforced that the licensee should acknowledge the testing that was completed and why it is sufficient for the application without the need for multiple rounds of requests for additional information. The NRC staff closed the topic by stating that this was a new concern and discussions would be continuing to ensure that regulatory positions are appropriate without unnecessary burden to the licensees.

During the meeting the attendees were reminded that although their comments were discussed with the staff, no decisions would be made at the meeting. A list of meeting attendees is enclosed.

Please direct any inquiries to Alexander Schwab, Project Manager, at 301-415-8539, or via e-mail to Alexander.Schwab@nrc.gov.

Enclosure:
List of Attendees

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REGULATORY COMMISSION STAFF TO DISCUSS CHALLENGES TO CREDITING
DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) IN RISK-INFORMED DECISION
MAKING**

(CATEGORY 2 MEETING)

February 6, 2018

Name	Organization
Greg Krueger	NEI
John Conly	Certrec Corporation
Jeff Stone	Exelon
Fernando Ferrante	EPRI
Roy Linthicum	PWROG
Mike Powell	APS
Nathan Hall	SWRI
Tracy St. Clair	FirstEnergy
Gary DeMoss	PSEG Nuclear
Kurt Rowland	Dominion Energy
Joe Vasquez	Dominion Energy
Brenda Kovarik	American Electric Power
Young G Jo	Southern Nuclear
Andrew J. Howe	EPM, Inc.
Woody Layne	Energy Northwest
Russell Thompson	TVA
Eric Rumfelt	VC Summer
Jana Bergman	Curtiss-Wright
Paul Farish	Duke Energy
Tim Sande	Enercon
Randy Mundy	SAFER
David Crawley	SAFER
Lesa Hill	SAFER
Rebecca Retherford	SAFER
Sunil Weerakkody	NRC/NRR/DRA
Jeff Mitman	NRC/NRR/DRA
Jim Hickey	NRC/NRR/DSS
James Chang	RES/DRA/HFRB
Michelle Kichline	NRC/NRR/DRA
Matt Humberstone	NRC/NRR/DRA
Alexander Schwab	NRC/NRR/DIRS

Enclosure