



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

September 28, 2017

INDUSTRY GROUP/
LICENSEE: Nuclear Energy Institute; Duke Energy Progress, LLC; Southern Nuclear Operating Company, Inc.; and Entergy Operations, Inc.

FACILITIES: Vogtle Electric Generating Plant, Units 1 and 2; Shearon Harris Nuclear Power Plant, Unit 1; and Grand Gulf Nuclear Station, Unit 1

SUBJECT: SUMMARY OF AUGUST 17, 2017, MEETING WITH NUCLEAR ENERGY INSTITUTE, DUKE ENERGY PROGRESS, LLC, SOUTHERN NUCLEAR OPERATING COMPANY, INC., AND ENTERGY OPERATIONS, INC., TO DISCUSS DEVELOPMENT OF TORNADO MISSILE EVALUATOR METHODOLOGY (CAC NOS. MG0109, MG0110, MG0111, AND MG0112)

On August 17, 2017, the U.S. Nuclear Regulatory Commission (NRC) staff conducted a Category 1 public meeting with the Nuclear Energy Institute (NEI), Duke Energy Progress, LLC (Duke Energy), Southern Nuclear Operating Company, Inc. (SNC), and Entergy Operations, Inc. (Entergy), at NRC Headquarters, 11555 Rockville Pike, One White Flint North, Rockville, Maryland. The purpose of the meeting was to discuss the NRC's efforts in support of the development of the NEI's Tornado Missile Risk Evaluation Tool. Revision 0 of NEI 17-02, "Tornado Missile Risk Evaluator (TMRE) Industry Guidance Document," was provided in support of a previous meeting and is available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML17181A307. The NRC staff's presentation is available in ADAMS under Accession No. ML17229B439.

BACKGROUND

The meeting was a follow-up from a July 6, 2017, public meeting with the NRC staff, where NEI provided an overview of the TMRE development and discussed the planned schedule for receipt of pilot plant amendment requests and eventual submittal of a final TMRE industry implementation guide. The NRC staff mentioned that the fee waiver for the three pilot plants submitting license amendment requests for the tornado missile issue had been approved, and also mentioned that when plants are submitting license amendment requests, they should start with what the original tornado missile protection design basis was for the plant and historical licensing basis change, and their present-day licensing basis. The NRC had a number of comments and questions during the industry's presentation, including how the TMRE process categorized elevated versus near-ground targets, as well as how missiles and targets were categorized. The NRC also indicated it had a strong interest in how licensees categorized the penetrations as too small to exclude from consideration in the TMRE calculation. The NRC also voiced some concerns that since the TMRE methodology assumes a non-recoverable loss of offsite power, the estimated change in risk may be non-conservative as a result of masking the risk insights. Additionally, the NRC mentioned that industry should make sure the licensees include all five principles of risk-informed regulation in their license amendment applications as detailed in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in

Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” including an evaluation of plant-specific defense-in-depth considerations and use of performance measurement strategies to monitor the change.

Specific to the NRC staff’s comment regarding non-recoverable offsite power, the industry replied that they felt the loss of offsite power being non-recoverable was actually more realistic in a tornado scenario, and that they would address the basis for this in their submittals.

DISCUSSION

The NRC staff began the meeting by identifying some information that would support a sufficient license amendment submittal by the pilot plants. This discussion included a reminder to include a no significant hazards consideration (NSHC) that focused on the effect of both the outcome of the methodology and the inclusion of the methodology itself on the facility. An example of a good NSHC was requested; the NRC staff indicated that an attempt would be made to provide an example. The NRC staff stated that submittals would be expected to contain discussions related to all of the elements of risk-informed decision-making as explained in Regulatory Guide 1.174. The NRC staff expressed the concern that the more deterministic elements often were not fully developed for past risk-informed submittals and referred to the risk outcome as the basis for acceptability. Further, the NRC staff reinforced that all seven considerations for the defense-in-depth element should be addressed in the submittals.

It was further emphasized that applications to use the methodology should explicitly identify all deviations from the guidance. The pilot plant representatives indicated that there should be no deviations from the guidance since a revised version of NEI 17-02 will be provided either before the submittal of the first pilot or as an attachment to the first pilot submittal. It was noted that temporary conditions, such as short-term construction activities, etc., that deviated from the guidance, were determined to not fall into the listing.

There were discussions regarding NRC staff’s positions related to the use of Section 50.59 to Title 10 of the *Code of Federal Regulations* (10 CFR) to address future non-conformances following approval of an amendment that used TMRE. The NRC staff indicated that future issues regarding compliance were not within the responsibility of the NRC staff present. Additionally, an industry member requested a position from the NRC regarding the use of a minimum opening size (de minimus penetrations) for screening items out of the walkdowns. The NRC staff questioned whether the industry’s position had been submitted consistent with 10 CFR 50.4 for NRC review, approval, or interpretation. The representative indicated that it had not. The NRC staff indicated that should a request be appropriately submitted by any stakeholder, the request would be handled and a response provided under the appropriate process.

The discussion included preliminary feedback regarding NEI 17-02, Revision 0. In most cases, the NRC staff requested additional detail for several topics, including spalling and shielding, be provided in the guidance. The NRC staff did reiterate several concerns provided during the July 6th meeting. In the area of de minimus penetrations, the guidance still was lacking sufficient justification to support the approach. Both SNC and Entergy indicated that their pilot submittals would not be providing a de minimus penetrations example in their submittals. Duke Energy indicated that one penetration was selected to exercise the methodology guidance. The NRC communicated again the concerns with the potential nonconservative effect that some conservative assumptions for estimating the base risk could have on the estimated change in risk. A focus of that conversation was the assumption that a loss of offsite power was

nonrecoverable. The NRC staff also indicated concern that the values in several tables in Section 7.0 and Appendix C of NEI 17-02 could not be validated. The industry indicated that for some of the tables, an effort was already underway.

The industry proposed weekly public meetings to support the pilot submittal reviews and development of the methodology. The NRC staff committed to status meetings once a week to discuss logistical aspects of the reviews. The NRC staff further indicated that public meetings to address technical issues would be scheduled taking into account available NRC resources, and at whatever periodicity needed by the NRC technical staff to support an efficient and effective review of the pilot submittals. The NRC also indicated that additional TMRE methodology-related public meetings are planned at the completion of the pilot acceptance review process tentatively in mid-November and the request for additional information stage tentatively early next year.

Members of the public were in attendance. No public Meeting Feedback forms nor comments were received.

Sincerely,

/RA/

Eva A. Brown, Senior Project Manager
Special Projects and Process Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-400, 50-416, 50-424,
and 50-425

Enclosure:
List of Attendees

cc: Listserv

Attendees
U.S. Nuclear Regulatory Commission
Public Meeting Concerning Tornado Risk Evaluator Methodology
August 17, 2017

U.S. NUCLEAR REGULATORY COMMISSION

Greg Casto
Robert Dennig
Doug Broaddus
G. Ed Miller
Thomas Dodamead
Mike Orenak
Nageswara Karipineni
Gordon Curran
Alex Schwab
Mehdi Reisi-Fard
Bernie Grenier
Simone Nazareth
Candace De Messieres
Eva Brown

EXTERNAL STAKEHOLDERS

John Caves, Duke Energy Progress (Duke Energy)
James Hallenbeck, Entergy Operations (Entergy)
Ken Lowery, Southern Nuclear Operations Company
Jack Grobe, Exelon
Brenda Simril, Tennessee Valley Authority
Fernando Ferrante, Electric Power Research Institute
Leo Shanley, Jensen Hughes
Randall Wilson, Ameren
Renee Millison, Entergy
John Conly, Certrec
Benjamin Krebs, Arizona Public Service
Christopher Riedl, Tennessee Valley Authority
Ken Huffman, Electric Power Research Institute
Russell Thompson, Tennessee Valley Authority
Ryan Sprengel, Exelon
Vincent Bacanskas, Entergy
Stephen Vaughn, Nuclear Energy Institute
Timothy Brown, Duke Energy
Alex Holder, Duke Energy
Monica Chlastosz, Tennessee Valley Authority

ENCLOSURE

SUBJECT: SUMMARY OF AUGUST 17, 2017, MEETING WITH NUCLEAR ENERGY INSTITUTE, DUKE ENERGY PROGRESS, LLC, SOUTHERN NUCLEAR OPERATING COMPANY, INC., AND ENTERGY OPERATIONS, INC., TO DISCUSS DEVELOPMENT OF TORNADO MISSILE EVALUATOR METHODOLOGY (CAC NOS. MG0109, MG0110, MG0111, AND MG0112) DATED SEPTEMBER 28, 2017

DISTRIBUTION:

PUBLIC

PM File Copy
RidsAcrs_MailCTR
RidsNrrDorl
RidsNrrDorlLspb
RidsNrrDraAplb
RidsNrrDssSbpb
RidsNrrLAIBetts
RidsNrrLAJBurkhardt
RidsNrrPMGrandGulf
RidsNrrPMShearonHarris
RidsNrrPMVogtle
RidsOgcMailCenter
RidsRgn2MailCenter
RidsRgn3MailCenter
RidsRgn4MailCenter
NKaripineni
MReisi-Fard
GCurran
BGrenier
ASchwab
CDe Messieres
GEMiller
TWertz, NRR
TClark, EDO

Public

JCaves (jcaves@duke-energy.com)
JHallenbeck (jhallen@entergy.com)
KLowery (kglowery@southernco.com)
JGrobe (john.grobe@exeloncorp.com)
BSimril (bfsimril@tva.gov)
FFerrante (fferrante@epri.com)
LShanley (Lshanley@jensenhughes.com)
RWilson (rwilson5@ameren.com)
RMillison (rmillis@entergy.com)
JConly (john.conly@certrec.com)
BKrebs (Benjamin.krebs@aps.com)
CRiedl (Criedl@tva.gov)
KHuffman (khuffman@epri.com)
RThompson (Rrthompson@tva.gov)
RJacobus (Robert.T.Jacobus@dominionenergy.com)
RSprengel (Ryan.Sprengel@exeloncorp.com)
VBacanskas (vbascas@entergy.com)
SVaughn (svj@nei.org)
TBrown (Timothy.Brown@duke-energy.com)
MChlastosz (mkalal@tva.gov)
AHolder (Alex.Holder@duke-energy.com)

ADAMS Accession No.: ML17244A074

NRC-001

OFFICE	NRR/DORL/LSPB/PM	NRR/DORL/LSPB/LAIt	NRR/DORL/LSPB/LA	NRR/DORL/LSPB/BC
NAME	EBrown	IBetts	JBurkhardt	DBroaddus (SWall for)
DATE	09/28/17	09/08/17	09/11/17	09/28/17

OFFICIAL RECORD COPY