



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

April 20, 2018

MEMORANDUM TO: Eric E. Bowman, Acting Chief
Beyond-Design-Basis Management Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

FROM: Sunil D. Weerakkody, Senior Technical Advisor /RA/
for Probabilistic Risk Assessment
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: ADEQUACY OF IMPLEMENTATION OF VOLUNTARY
INDUSTRY INITIATIVE ON SHUTDOWN RISK REVISION 1

In May 2014, in Staff Requirements Memorandum (SRM)-SECY-13-0132, "U.S. Nuclear Regulatory Commission Staff Recommendation for the Disposition of Recommendation 1 of the Near-Term Task Force Report" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14139A104), the Commission approved the proposal to evaluate the current status of the implementation of the most risk-significant Type 2 voluntary industry initiatives (VIIs) and verify that these voluntary initiatives are being adequately implemented. The same SRM further directed the staff to provide the results of this verification process and any recommended improvements, if warranted, for Commission review and approval.

Consequently, on August 27, 2014, in a Commissioners' assistant note, the staff committed to providing a Commission paper by June 30, 2018, on the results of its evaluation. In that note, the staff identified two initiatives needing further verification. The staff informed the Commission that one of those initiatives, "Safety Culture," is being addressed by ongoing Substantive Cross-Cutting Issues working group activities with industry and does not impact the schedule for the Commission paper. The staff also informed the Commission that the other initiative, "Low Power/Shutdown Risk (or Shutdown Issue)," requires additional actions to verify implementation effectiveness. Specifically, the staff intended to complete assessing licensee implementation of Order EA-12-049, "Issuance of Order To Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS Accession No. ML12054A735). Known as the Mitigation Strategies Order, it includes mitigating strategies for extreme natural phenomena hazards in low-power and shutdown modes of plant operation. The staff requested 4 years to complete this activity and prepare recommendations as to whether the Commission should consider further regulatory actions on this initiative.

The enclosure to this memorandum conveys the staff's evaluation of the adequacy of implementation of the shutdown VII. In summary, in the area of shutdown risk, the staff has concluded that additional regulatory actions are unnecessary to ensure adequate

CONTACT: Steven Alferink, NRR/DRA
(817) 200-1548

Jerrod Demers, NRR/DRA
(301) 415-1145

implementation of the VII, in part because of the subsequent imposition of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65(a)(4) (the Maintenance Rule).

The staff based this conclusion on the following:

- a review of approximately 200 inspection findings from the last 5 years associated with Inspection Procedure (IP) 71111.13, "Maintenance Risk Assessments and Emergent Work Control," dated December 20, 2017 (ADAMS Accession No. ML17194A934), and IP 71111.20, "Refueling and Other Outage Activities," dated November 28, 2017 (ADAMS Accession No. ML17179A651)
- a review of licensees' obligations with respect to Nuclear Management and Resource Council (NUMARC) 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," issued December 1991 (ADAMS Accession No. ML14365A203)
- implementation of requirements and guidance associated with 10 CFR 50.65(a)(4)
- licensee activities to comply with the requirements in EA-12-049

During its assessments, the staff identified several follow-up activities that would refine oversight of shutdown risk-related actions consistent with the agency practice of incorporating operating experience:

- potentially updating IP 71111.20 and IP 71111.13 and Inspection Manual Chapter 0609, "Significance Determination Process," Appendix G, "Shutdown Operations Significance Determination Process," Phase 1, dated May 9, 2014 (ADAMS Accession No. ML13050A933)
- enhancing inspector awareness of industry obligations with respect to NUMARC 91-06 and NUMARC 93-01, Revision 3, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," issued April 2011 (ADAMS Accession No. ML11116A196)
- exploring ways to gather and analyze additional operational experience on shutdown events and sharing other insights gained from the review of the inspection findings with regional inspectors

The Division of Risk Assessment is collaborating with the Division of Inspection and Regional Support to follow up on these activities.

If you have additional questions about this issue, please contact Dr. Steven Alferink at (817) 200-1548 or Mr. Jerrod Demers at (301) 415-1145.

Enclosure:
Shutdown Risk Initiative

SUBJECT: ADEQUACY OF IMPLEMENTATION OF VOLUNTARY INDUSTRY INITIATIVE ON SHUTDOWN RISK REVISION 1 DATED APRIL 20, 2018

DISTRIBUTION:

Public
JDemers, NRR
SAIferink, NRR
SWeerakkody, NRR
MFranovich, NRR
RFelts, NRR
JMitman, NRR
MPohida, NRO
MHayes, NRO
RidsNrrDra_Resource
RidsNrrDlp_Resource

ADAMS Accession Package No. ML18113A300

*Concurrence by email

OFFICE	DRA:APHB	DRA/APHB	STA:DRA
NAME	JDemers	SAIferink*	SWeerakkody
DATE	04/20/2018	04/18/2018	04/20/2018

OFFICIAL RECORD COPY