



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

July 1, 2022

MEMORANDUM TO: Stephen Wyman, Acting Chief
Electrical Engineering Branch
Division of Engineering and External Hazards
Office of Nuclear Reactor Regulation

FROM: Bhagwat P. Jain, Project Manager */RA/*
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY JUNE 8, 2022 PUBLIC COMMENT GATHERING
MEETING ON THE NRC STAFF'S PLAN TO EXPAND THE
CURRENT COMMON-CAUSE-FAILURE POLICY FOR DIGITAL
INSTRUMENTATION AND CONTROLS SYSTEMS TO ALLOW
CONSIDERATION OF RISK-INFORMED ALTERNATIVES TO
THE STAFF REQUIREMENTS MEMORANDUM TO
SECY-93-087

On June 8, 2022, the U.S. Nuclear Regulatory Commission (NRC) staff held a second public comment gathering meeting with external stakeholders to inform and solicit their feedback on the staff's plan to expand the current NRC policy for addressing common-cause-failure (CCF) for digital systems to allow consideration of risk-informed alternatives to the Staff Requirements Memorandum (SRM) to SECY-93-087. The NRC staff made a formal presentation in the meeting. The stakeholders provided their feedback on the staff's plan. The meeting notice and agenda dated May 2, 2022, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML22122A063. Enclosed is a list of attendees at the meeting.

Meeting Summary

During the meeting, the NRC staff from the Office of Nuclear Reactor Regulation (NRR), Division of Engineering and External Hazards (DEX) and Division of Risk Assessment (DRA) presented the staff's plan (ML22155A001) to develop a SECY paper to allow consideration of risk-informed alternatives to the SRM to SECY-93-087.

The NRC staff provided background of the current digital instrumentation and controls (I&C) CCF policy, purpose of expanding the current policy, safety concern that the introduction of digital I&C may introduce new failure modes and behaviors, guiding principles for expanding the digital I&C CCF policy, and definition of risk-informed terminology. The staff discussed the proposed expanded CCF policy including the current and the risk-informed paths of the SECY policy paper development milestones and target completion date.

The NRC staff stated that Point 1 does not preclude the use of the risk-informed approach for defense-in-depth and diversity (D3) assessment, and that the risk-informed approach to Point 4 will not likely provide appreciable benefits.

The NRC staff also discussed, in detail, the risk-informed approach to Points 2 and 3 in the risk-informed path.

Overall, the NRC staff delivered the following key messages to stakeholders.

- The expanded policy will encompass the current points of SRM-SECY-93-087 (with clarifications) and expand the use of risk-informed approaches.
- Any use of risk-informed approaches will be expected to be consistent with the Safety Goal Policy Statement, Probabilistic Risk Assessment (PRA) Policy Statement, and SRM-SECY-98-0144.
- The current digital I&C CCF policy will continue to remain a valid option for licensees and applicants.
- The staff plans to send the SECY paper to the Commission in 2022.
- Upon approval of an expanded policy, the staff will begin updating the implementation guidance in the current Branch Technical Position (BTP) 7-19.

After the NRC staff's presentation, the stakeholders discussed the staff's overall risk-informed path in the proposed expanded CCF policy, and specifically, the risk-informed approach to Points 2 and 4.

The public comment gathering meeting met its objective of engaging the Nuclear Energy Institute (NEI) and other nuclear industry representatives and members of the public in a public discussion on the NRC staff's proposed plan to expand the CCF policy. The stakeholders provided their feedback and comments which are being captured and summarized herein. The meeting was well attended with over 100 participants. Stakeholders thoroughly discussed each step of the staff's proposed risk-informed path, but the bulk of their comments were focused on the risk-informed approach to Points 2 and 4. The staff will consider all stakeholder's feedback and inform the SECY paper as appropriate, to clarify its recommendations to the Commission regarding risk-informed approaches for digital I&C CCF in applications for new or amended licenses and design approvals.

A summary of feedback and comments expressed by members of the public are provided below.

Stakeholders' Comments on Point 2

- The existing policy in SRM-SECY-93-087 specifies that the analysis looks at the Chapter 15 events. The staff did not articulate how the defense-in-depth analysis would be approached in a risk-informed way.
- The staff needs to clarify the "principles of risk-informed decision making" and the scope of the applicability of guidance in Regulatory Guide (RG) 1.174, "An Approach for Using

Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” that rely on a quantitative measurement of risk. The risk cannot be quantified without significant uncertainties. A clarification is needed whether compliance with RG 1.174 is a requirement of the policy.

Stakeholders' Comments on Point 4

- Clarify what is meant by “effectively require” in the statement “the current regulations effectively require diverse and independent displays and controls.”
- The staff seems to be creating a broader implementation of diversity than was intended through either the regulations or through the policy statement on its own by adopting together different elements of regulation.
- A D3 analysis for each Updated Final Safety Analysis Report (UFSAR) Chapter 15 events is performed to cope with the CCF with or without diverse functions. However, regardless of the D3 analysis, Point 4 requires diverse displays and controls for critical safety functions. This complicates the process and does not really add any value. Instead, fold this requirement into the criteria in Point 3, instead of having a separate one for Point 4.
- Point 4 requires a diverse manual actuation of a critical safety function with the corresponding independent display. If, indeed, Points 3 and 4 are coupled, if you can risk-inform Point 3, why can't you risk-inform Point 4?
- Discuss the staff's plans to review the NEI guidance, NEI 20-07, Revision D, “Guidance for Addressing Software Common Cause Failure in High Safety-Significant Safety related Digital I&C Systems,” with respect to the revision of review guidance upon Commission's approval of the SECY policy paper.

Conclusion

At the end of the meeting, NRC management gave closing remarks. No regulatory decisions were made. NEI and other nuclear industry representatives and members of the public provided comments. Public Meeting Feedback forms were not received.

Enclosure:
List of Attendees

LIST OF ATTENDEES

JUNE 8, 2022, PUBLIC COMMENT GATHERING MEETING ON
NRC STAFF'S PLAN TO EXPAND THE CURRENT COMMON-CAUSE-FAILURE POLICY
FOR DIGITAL INSTRUMENTATION AND CONTROL SYSTEMS TO ALLOW
CONSIDERATION OF RISK-INFORMED ALTERNATIVES TO THE
STAFF REQUIREMENTS MEMORANDUM TO SECY 93-087

Microsoft Teams
Meeting

ATTENDEE	ORGANIZATION¹
Eric Benner	U.S. Nuclear Regulatory Commission (NRC)
Wendell Morton	NRC
Bhagwat Jain	NRC
Shilp Vasavada	NRC
Steve Wyman	NRC
Kaitlyn Cottrell	NRC
Mo Sadollah	NRC
David Rahn	NRC
Sergiu Basturescu	NRC
Sunil Weerakkody	NRC
Bill Roggenbrodt	NRC
Ismael Garcia	NRC
Norbert Carte	NRC
Paul Rebstock	NRC
Steven Alferink	NRC
Erick Martinez	NRC
Christopher Cook	NRC
Manuel Ruiz Diaz	NRC
Sheldon Clark	NRC
Duane White	NRC
Joseph Ashcraft	NRC
Richard Stattel	NRC
Samir Darbali	NRC
Jason Drake	NRC
Roy Hardin	NRC
David Desaulniers	NRC
Hang Vu	NRC
Ian Jung	NRC
Jack Zhao	NRC
Steve Ruffin	NRC
Michael Marshall	NRC

¹ Unknown' organization indicates that the participant's affiliation was not provided by the issuance of this meeting summary.

ATTENDEE	ORGANIZATION¹
Derek Halverson	NRC
Khoi Nguyen	NRC
John McKirgan	NRC
Andrea Kock	NRC
Kamishan Martin	NRC
Mauricio Gutierrez	NRC
Michael Waters	NRC
Sushil Birla	NRC
Christina Antonescu	NRC
Jennifer Dixon-Herrity	NRC
Charles Peabody	NRC
Robert Krsek	NRC
Jana Bergman	Curtiss-Wright
Svetlana Lawrence	Idaho National Laboratory
George Raymond	INPO
Alan Campbell	Nuclear Energy Institute
Warren Odess-Gillett	Westinghouse Electric Company LLC
Rachelle Johnson	Constellation Energy Generation, LLC (Constellation)
Nathan Faith	Constellation
Philip Tarpinian	Constellation
Zachary Ballert	Constellation (Contractor)
Mark Dirado	Constellation
Raymond Herb	Southern Company
David Herrell	MPR
Richard Supler	Enercon Services, Inc
Mark Burzynski	Sunport
Robert Chenkovich	Dominion Energy
Brian Haynes	Framatome -ICSP
Ron Jarrett	Framatome
Anil Julka	NextEra Energy, Inc.
Mack Jarrett	NextEra Energy, Inc
Mike Wiwel	PSEG Nuclear LLC
Rob Burg	EPM
Fernando Ferrante	Electric Power Research Institute
Neil Archambo	Unknown
Gary Johnson	Unknown
Bob Hirmanpour	Unknown
Maribel Valdez	Unknown
Steven Erickson	Unknown
Eric Thornsby	Unknown
Arthur Holtz	Unknown
Tom Gurdziel	Unknown
Fred Madden	Unknown
Ben Burnett	Unknown
Roger Wyatt	Unknown
Erin Wisler	Unknown
Omran Samadi	Unknown
Shawn Gibby	Unknown

ATTENDEE	ORGANIZATION¹
John Weglian	Unknown
Mike Montecalvo	Unknown
Brian Kwiatkowski	Unknown
Jerry Mauck	Unknown
Chris Lauderbaugh	Unknown
Ted Quinn	Unknown

SUMMARY: JUNE 8, 2022 PUBLIC COMMENT GATHERING MEETING ON THE NRC STAFF'S PLAN TO EXPAND THE CURRENT COMMON-CAUSE-FAILURE POLICY FOR DIGITAL INSTRUMENTATION AND CONTROLS SYSTEMS TO ALLOW CONSIDERATION OF RISK-INFORMED ALTERNATIVES TO THE STAFF REQUIREMENTS MEMORANDUM TO SECY-93-087 DATED JULY 1, 2022

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ADAMS Accession No.: ML22167A159***by email**

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NAME	SWyman	BJain	
DATE	6/30/2022	7/1/2022	

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