



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

May 27, 2022

MEMORANDUM TO: Richard Chang, Chief
Licensing Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Ngola A. Otto, Project Manager **/RA/**
Licensing Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF DECEMBER 1, 2021, PUBLIC MEETING WITH
THE BOILING WATER REACTOR OWNER'S GROUP
EXECUTIVE OVERSIGHT COMMITTEE AND THE NUCLEAR
REGULATORY COMMISSION

On December 1, 2021, management of the U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Reactor Regulation (NRR) met with representatives of the Boiling Water Reactor (BWR) Owner's Group (BWROG) Executive Oversight Committee (EOC) in a hybrid public meeting. In-person participation was held at NRC headquarters and online with Teams. The purpose of the meeting was for the NRC and BWROG managers to discuss current BWR issues of interest. At the meeting, both the NRC staff and the BWROG representatives made presentations. The meeting notice is available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21312A555. A list of attendees is enclosed. The presentation slides used at the meeting can be viewed at ADAMS Package Accession No. ML22136A124.

The BWROG representatives presented the following topics:

- BWROG Introduction, Tim Hanley, the BWROG executive committee chairman
 - BWROG Overview and Mission, Structure, Leadership, Membership
 - BWROG Committees
- Emergency Procedures Committee and Emergency Procedures Guidelines (EPG)/Severe Accident Guidelines (SAG) Revision 4 Workshop Update, Steve Douglas, BWROG Executive Vice Chairman
- Risk Informed Consensus Standards (Institute of Electrical and Electronics Engineers, etc.) Licensing Committee Update, Robert Rishel, Integrated Risk Informed Regulation Committee Chair
 - Flex Operator Actions and Integrated Human Event Analysis System adoption

- BWROG Licensing and Technical Specifications Task Force (TSTF) Update, Ryan Joyce, BWROG Licensing Committee Chair
 - TSTF-576, “Revise Safety/Relief Valve [SRV] Requirements”
 - TSTF-582, “Reactor Pressure Vessel (RPV) Water Inventory Control (WIC) Enhancements”

The BWROG representatives provided the 1) introduction and EOC overview, membership, and committees (Special topic, System improvement, Plant performance, Core committee), 2) an overview of the BWROG emergency procedures committee purpose and products including EPGs/SAGs, technical support guidelines, and diverse and flexible coping strategies support guidelines. An update on the EPG/SAG Revision 4 implementation and December 2020 workshop with the NRC and industry representative was provided.

For Risk Informed Consensus Standards, the BWROG representative discussed standards for risk applications of interest to the BWROG, including Regulatory Guide (RG) 1.200, “Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities,” and Title 10 of the *Code of Federal Regulations* (10 CFR) 50.69, “Risk-informed categorization and treatment of structures, systems and components [(SSCs)] for nuclear power reactors.” The BWROG representative discussed their issue with the 1) low power shutdown portion of RG 1.200, Rev. 4, which is endorsed by the NRC; and 2) a concern of conflict, or over-prescriptive requirements when compared to 10 CFR 50.69 alternate treatments for SSCs. The BWROG representatives also mentioned having an industry discussion before issuing RG 1.200, Rev. 4.

The NRC staff asked about Human Reliability Analysis numbers. The NRC staff also discussed a recommended workshop, which would include public interaction before endorsement of RG 1.247, “Acceptability of PRA Results for Advanced non-LWRs Risk-Informed Activities.”

For the TSTF, a background and update on the TSTF-582 enhancements, adoption by the industry, and feedback from licensees was provided. The issues, review timeline, and current status was discussed for TSTF-576, including recent interactions.

It was noted that there was good interaction with the NRC and the TSTF task force. With respect to TSTF-576, it was noted that there is still work to figure out implementation. The NRC staff mentioned about convergence on the issue since both the NRC and the industry had invested significant time in the review. The BWROG representatives mentioned that there is a need to provide a TSTF that the industry will adopt. Also highlighted during the discussion is the fact that there was some level of commitment from the NRC staff and the industry in a meeting on November 23, 2021.

The NRC staff presented the following topics:

- NRC Transformation Update
 - Accepting Risk in Decision Making, Ian Tseng, Acting Branch Chief, Division of Engineering and External Hazards (DEX), Nuclear Reactor Regulation (NRR)
 - Systematic Approach to Risk-informed Licensing, Anders Gilbertson, Division of Risk Analysis, Office of Research
 - Licensee billing process update, Jawanza Gibbs-Nicholson, Fee Billing Team Lead, Office of the Chief Financial Officer

- Update on Inspection Plans and Schedule for EPG/SAG Revision 4 Implementation, Jeffrey Bream, Division of Reactor Oversight (DRO), NRR
- Update on Power Operated Valve (POV) Inspections, Tom Scarbrough, Michael Farnan, DEX, NRR and Douglas Bollock, DRO, NRR
- 10 CFR 50.55a(b)(3)(xi) Rulemaking and American Society of Mechanical Engineers (ASME) Code Case, Tom Scarbrough and Michael Farnan, DEX, NRR and Douglas Bollock, DRO, NRR
- Digital Instrumentation and Controls (I&C), Jeanne Johnston, Branch Chief, DEX, NRR
- Accident Tolerant Fuel (ATF), Joe Donoghue, Director, Division of Safety Systems, NRR

The NRC staff provided an update on the culture of accepting risk in decision making and systematic approaches to risk-informed licensing, focusing on NRR Office Instruction LIC-206 Revision 1, "Integrated Risk-Informed Decision-Making for Licensing Reviews (ML19263A645)," including its implementation. In addition, the NRC staff discussed other systematic uses of risk in licensing, such as RG 1.200 and 10 CFR 50.69; this discussion focused on the consensus probabilistic risk assessment (PRA) standards, regulatory guides for the consensus standards, and implementation of RG 1.200. For the licensee billing process update, the NRC staff discussed the licensee billing process focusing on the Nuclear Energy Innovation and Modernization Act (NEIMA) standard for accurate invoicing, including invoice and billing data structure redesign, standardization of the fee billing validation process, and electronic (e)-billing.

For the update on inspection plans and schedule for EPG/SAG Revision 4 implementation, the NRC staff discussed the reactor oversight process for the oversight of severe accident management guidelines (SAMGs), including NRC staff revised inspection procedure (IP) 71111.18, "Plant Modifications," to inspect SAMG commitments, inspection samples completed and next steps.

The NRC staff provided an update on the POV inspection program, including the POV inspection program, status, results, lessons learned, and POV Region panels. In summary, the NRC staff highlighted the success of the implementation of IP 71111.21N.02, "Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements," for POV inspections, the importance of lessons learned, and the NRC staff's planned completion of the POV inspections in 2022.

The NRC staff provided a background, applicable guideline, status, and next steps for 10 CFR 50.55a(b)(3)(xi) and the ASME Code Case. For the next steps, the NRC staff planned to review licensee requests to implement the ASME Code for Operations and Maintenance of Nuclear Power Plants Case OMN-28, complete the safety evaluation on Electric Power Research Institute Technical Report 3002019621, and complete the review of public comments on the 10 CFR 50.55a proposed rule.

The NRC staff digital I&C presentation focused on NRC's modernization strategy, accomplishments, guidance, completed review activities, and ongoing work. The NRC staff discussed a plan to have a future workshop to get industry feedback on IP-52003, "Digital Instrumentation and Control Modification Inspection (ADAMS Accession No. ML21113A169)," alternate review process (ARP).

This is used to verify that the licensee has performed enhanced vendor oversight activities, as defined by the Vendor Oversight Plan for designs licensed by the NRC staff using the digital I&C Interim Staff Guidance-06 Revision 2. The NRC staff also discussed updated guidance, Branch Technical Position 7-19, "Guidance for evaluation of defense in depth and diversity to address common-cause failure (CCF) due to latent design defects in digital safety systems (ADAMS Accession No. ML20339A647)," Revision 8, used CCF in digital systems.

For ongoing work, the NRC staff also discussed that NEI 17-06, "Guidance on Using IEC 61508 Safety Integrity Level (SIL) Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications," was developed to support key aspects of the commercial grade dedication process for dedicating digital I&C equipment for use in safety applications. The NRC staff highlighted early engagement as a key for digital I&C reviews.

For ATF, no slides were used for this topic, however, the NRC staff asked the BWROG representatives about industry plans regarding ATF. BWROG agreed to provide a response to the NRC at a later date.

No comments or questions were received by members of the public.

Enclosure:
Attendees List

**U.S. Nuclear Regulatory Commission Public Meeting Attendance
Boiling Water Reactor Owner's Group Executive Oversight Committee
December 1, 2021**

NAME	ORGANIZATION
Denver Atwood	SNC, Boiling Water Reactor Owner's Group (BWROG) Chair
Steve Douglas	TVA, BWROG EOC Executive Vice Chair
Pete Gardner	Xcel Energy, BWROG CNO Sponsor
Tim Hanley	Constellation, BWROG Executive Chair
Robert Rishel	BWROG/Duke Energy
Gregory Holmes	BWROG/GE Hitachi
Ryan Joyce	BWROG/SNC
Kenneth Knaide	PSEG, BWROG EOC At Large Member
James Burke	GEH, BWROG EOC At Large Member
Lucas Martins	BWROG/GE Hitachi
Bill Williamson	BWROG/TVA
Robert Brightup	BWROG/Constellation
Gary DeMoss	BWROG/PSEG
Shawn Gibby	Duke, BWROG EOC At Large Member
Mike King	Nuclear Regulatory Commission (NRC)
Caroline Carusone	NRC
Joseph Donoghue	NRC
Kristy Bucholtz	NRC
Jeffrey Bream	NRC
Douglas Bollock	NRC
Mihaela Biro	NRC
Luis Colon Fuentes	NRC
Victor Cusumano	NRC
Evan Davidson	NRC
Michael Farnan	NRC
Jawanza Gibbs-Nicholson	NRC
Anders Gilbertson	NRC
Raymond Hoffman	NRC
Zachary Hollcraft	NRC
Jeanne Johnston	NRC
Michelle Kichline	NRC
Kenneth Kolaczyk	NRC
John Lane	NRC
Michael Marshall	NRC
Dennis Morey	NRC
Jordan Natreon	NRC
Ngola Otto	NRC
Robert Pascarelli	NRC
Jessie Quichocho	NRC
Robert Rivera-Roche	NRC
Tom Scarbrough	NRC
Ian Tseng	NRC
Michael Waters	NRC
Robert Wolfgang	NRC
Antonios Zoulis	NRC

Enclosure

SUBJECT: SUMMARY OF DECEMBER 1, 2021, PUBLIC MEETING WITH THE BOILING WATER REACTOR OWNER'S GROUP EXECUTIVE OVERSIGHT COMMITTEE AND THE NUCLEAR REGULATORY COMMISSION DATED MAY 27, 2022

DISTRIBUTION:

PUBLIC	AGilbertson, RES
RidsNrrLADHarrison	RHoffman, NSIR
RidsNrrDorLLpb	JJohnston, NRR
NOtto, NRR	MKichline, NRR
KBucholtz, NRR	KKolaczyk, NRR
JBream, NRR	JLane, NRR
DBollock, NRR	MMarshall, NRR
MBiro, NRR	RPascarelli, NRR
LColon Fuentes, OCHCO	JQuichocho, NRR
VCusumano, NRR	RRivera-Roche, NRR
EDavidson, NRR	TScarbrough, NRR
JGibbs-Nicholson, OCHCO	ITseng, NRR
RChang, NRR	MWaters, NRR
MFarnan, NRR	RWolfgang, NRR
NJordan, NRR	AZoulis, NRR

ADAMS Accession Nos.:**Package: ML22136A124****Mtg. Summary: ML22144A066****NRC Presentation: ML22136A126****BWROG Presentation: ML22136A125**

OFFICE	NRR/DORL/LLPB/PM	NRR/DORL/LLPB/LA	NRR/DORL/LLPB/BC	NRR/DORL/PLPB/PM
NAME	NOtto	DHarrison	RChang	NOtto
DATE	5/24/2022	5/26/2022	5/26/2022	5/27/2022

OFFICIAL RECORD COPY