



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

July 08, 2020

MEMORANDUM TO: Anna H. Bradford, Director
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

FROM: David L. Rudland, Senior Level Advisor */RA/*
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JUNE 25, 2020, PUBLIC MEETING WITH
THE NUCLEAR INDUSTRY TO DISCUSS TITLE 10 OF THE
CODE OF FEDERAL REGULATIONS SECTION
50.55a(b)(2)(xxvi) CONDITION ON THE PRESSURE TESTING
OF CLASS 1,2, AND 3 MECHANICAL JOINTS

On June 25, 2020, the U.S. Nuclear Regulatory Commission (NRC) staff held a public teleconference with representatives from the nuclear industry, including the Nuclear Energy Institute (NEI), Electric Power Research Institute (EPRI), American Society of Mechanical Engineers (ASME) and Entergy. The purpose of the meeting was to discuss the recent modification of the Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(b)(2)(xxvi) regulatory condition pertaining to the pressure testing of Class 1, 2 and 3 mechanical joints.

The public meeting notice can be found in the Agencywide Documents Access and Management Systems (ADAMS) under Accession No. ML20177A607. This meeting notice was also posted on the NRC public website located at <https://www.nrc.gov/reactors/new-reactors/design-cert/nuscale/documents.html>.

The Meeting Agenda and List of Participants can be found in Enclosures 1 and 2, respectively.

At the beginning of the meeting Greg Cranston, Senior Project Manager in the Division of New and Renewed Licenses, Office of Nuclear Reactor Regulation, welcomed everyone to the Category 2, public meeting and explained the ground rules for the meeting. He reinforced that the meeting was an information gathering dialogue only and as always for NRC public meetings, no regulatory decisions will be made. Luis Betancourt, Technical Assistant in the Office of Nuclear Reactor Regulations, provided instructions for using WebEx during the meeting.

CONTACT: David L. Rudland, Ph.D.
Senior Technical Advisor for Materials
NRR/DNRL

After the introductions, David Rudland, Senior Technical Advisor for Materials in the Division of New and Renewed Licenses, Office of Nuclear Reactor Regulation, presented the NRC staff's assessment of condition 10 CFR 50.55a(b)(2)(xxvi) (ML20176A286). He discussed the details of the NRC staff's risk-informed assessment of the condition. First, he provided a review of deterministic analyses that were conducted in an EPRI report (NP-5769), which illustrated margin to failure exists even with a flange that leaks with a rate greater than the technical specification.

The NRC staff presented the results of the risk analysis that included 11 scenarios and the use of the risk triplet (What can go wrong, how likely is it, and what are the consequences?). The NRC staff pointed out that the analyses and risk results were focused on the mechanical joint pressure test issue and were not meant to be generically applicable. Also, the NRC staff stated that the risk estimates were based on the NRC staff's estimate of leak likelihood and consequences, while considering the effectiveness of the licensee additional actions to provide assurance of the leak tightness and integrity of bolted connections. The NRC staff provided their thoughts on the other principles or risk informed decision making related to this issue focusing on areas where other measures are taken to assure leak tightness of the joints. Finally, the NRC staff presented the operational experience on the leakage and rupture of a bolted joint, pointing out that even though leaks may be somewhat likely, the chances of a leakage leading to structural integrity issues, is low.

The NRC staff concluded that when coupled with the sufficient performance monitoring, maintaining defense-in-depth and sufficient safety margin, the risk analyses suggest that the absence of the pressure test after repair/replacement activities imposes a minimal safety concern when taking to account the additional measures conducted by the industry to ensure leak tightness.

Finally, the NRC staff presented the following path forward on this issue:

- The NRC staff finds the industry position that the items in IWA-4540(b) are exempt from pressure tests, to be acceptable.
- For items not included in IWA-4540(b), the NRC staff are open to alternatives to 10 CFR 50.55a, related to this topic.
- The NRC staff will revisit this condition in the next ASME Code edition rulemaking update.

After the NRC staff's presentation, there were several questions from the industry. First a question was asked if an alternative to 10 CFR 50.55a was required for those exemptions in IWB-4540(b). Dave Rudland replied that since the NRC staff agreed with the industry's position, that those items in IWB-4540(b) were exempt and an alternative was not required. However, for those items not in IWB-4540(b), an alternative is needed.

Rick Swayne (Reedy Engineering) asked if it was the NRC staff's intension to have the industry change their ISI programs based on this condition. Mr. Rudland replied that it was never the intent of the NRC staff to change the condition to add requirements. While he could not speak on individual details in the Owners' ISI programs, Mr. Rudland commented that the meeting today focused on those items that are exempt per IWA-4540(b).

A participant asked if an alternative is required if a utility replaced a bolt during a repair/replacement activity. Mr. Rudland again emphasized that the NRC staff agrees with the position that those items in IWB-4540(b) are exempt from pressure tests, and since bolts are part of IWA-4540(b)(10), then they would be exempt. The same participant asked about those plants whose code of record is prior to 2017, edition where bolts were not mentioned in IWA-4540(b). Tom Basso (NEI) stated an alternative was required, and Mr. Rudland agreed. A participant asked about the use of RIS-2004-16. Mr. Rudland stated that he could not remember the details of that RIS, but licensees need to follow their Code of record. Rick Swayne stated that it was ASME's interpretation that a pressure test is not required after replacing bolts. Mr. Basso said he was incorrect about the alternative. Mr. Rudland stated that the NRC does not endorse ASME interpretations, and the NRC staff's position on IWA-4540(b) exemptions was clear.

Mr. Basso asked for more details about the NRC staff's plan to revisit this condition in the 2019, edition rulemaking. Mr. Rudland stated that based on the information presented during the meeting, the condition wording would be assessed, and changes would be proposed in the 2019, edition draft rule. Mr. Basso asked to verify that the public would have an opportunity to comment of the revision to the condition. Mr. Rudland verified that this was part of the NRCs normal rulemaking process.

The floor was opened to questions from the public, but no additional questions were asked.

After the public comment period, the NRC staff and NEI made closing statements thanking everyone for the information presented at the meeting. The meeting was adjourned at 2:00 p.m. Eastern Standard Time.

Docket No. 52-048

Enclosures:
As stated

SUBJECT: SUMMARY OF THE JUNE 25, 2020, PUBLIC MEETING WITH THE NUCLEAR INDUSTRY TO DISCUSS TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* SECTION 50.55a(b)(2)(xxvi) CONDITION ON THE PRESSURE TESTING OF CLASS 1,2, AND 3 MECHANICAL JOINTS
 DATED: JULY 08, 2020

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OFFICE	NRR/DNLR	NRR/DNRL/NRLB: LA	NRR/DNRL/EPNB
NAME	DRudland	CSmith*	MMitchell*
DATE	07/08/2020	0708/2020	07/08/2020
OFFICE	NRR/DNRL/EPNB	NRR/DNRL/NRLB	
NAME	KHoffman*	GCranston*	
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TO DISCUSS TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* SECTION
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MECHANICAL JOINTS**

Meeting Agenda

June 25, 2020

<u>Time</u>	<u>Topic</u>	<u>Organization</u>
1:00 p.m. – 1:05 p.m.	Introductions	NRC
1:05 p.m. – 1:35 p.m.	NRC safety analysis discussion and path forward	NRC
1:35 p.m. – 2:45 p.m.	Discussion	NRC/NEI/ASME
2:45 p.m. – 3:00 p.m.	Public Comments	All
3:00 p.m.	Adjourn	All

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List of Attendees

June 25, 2020

<u>NAME</u>	<u>AFFILIATION</u>
Dave Rudland	U.S. Nuclear Regulatory Commission (NRC)
Rob Taylor	NRC
Anna Bradford	NRC
Matt Mitchell	NRC
Keith Hoffman	NRC
Greg Cranston	NRC
Luis Betancourt	NRC
Bill Holston	Emc2
Tom Basso	Nuclear Energy Inc.
Rick Swayne	Reedy Engineering, Inc.
Joe Weicks	Entergy