

SC-3 WG 3.4 23-05 Meeting Minutes June 23, 2023 11 am -12 pm EDT WebEx

1. Call to Order: Chair called the meeting to order at 11:01 EST
2. Roll Call - Quorum NOT met [9 of 15], see attached list
3. IEEE Patent and Copyright Policy Review, slides attached
4. 23-04 Minutes: No quorum, approval accomplished by email poll.
5. Previous Action Items
 - i. Contact Christian Orlando about using EPRI lifetime visual (Copywrite concerns?) – Rebecca – Item closed, Christian is working on the graphic. Item Closed – need to include graphic in final draft.
 - ii. EPRI NP-1558 Rev 1 (3002018283) – Activation Energy Use & Verification – Revised [B37].
 - iii. Put copies of older IEEE transactions and other historical items into a reference archive on iMeet. – Rebecca added reference documents to the **NPEC WG 3.4/Standard Development/References** folder on iMeet Central. Add more as they become available.
 - iv. **All members** review the Appendix G and Rev. 0e proposed changes, make comments, if any, in writing. Ed Mohtashemi comments in Agenda Item 7 below.
6. Comment resolution of Annex G – review of Annex G resulted in changes from Rev 0e of the draft standard for the following 28 items: [B1] to [B4], [B7], [B8], [B37], [B40], [B73], [B109] to [B114], insert new [B115] to [B120] (and renumber subsequent entries), REVISED NUMBERS [B121] to [B128].

Rebecca uploaded a number of references to the IEEE dashboard that are not currently in Annex G. It was identified we should consider adding TR-10084, Nuclear Power Plant Common Aging Terminology, Nov 1992 to Annex G. A review of comments indicated Chris Abernathy had already identified item B40 should be TR-10084 instead of RP-2927 so this will already be in Annex G.
7. Ed Mohtashemi comments
 - a. Suggests changing title to “Draft guide for assessing, monitoring and mitigating aging effects for *safety related equipment used in Nuclear Power Generating stations and at other Nuclear facilities*”

This wording was selected on purpose. Facilities encompasses NPPs and other facilities. The application is described in both Purpose and Scope. NPEC has changed their mind and is considering changing to our title format

We should confirm the NPEC change in approach and consider changing to “Nuclear Facilities” instead of simply “Facilities.”

- b. Add IEC/IEEE 60980-344 to Annex G since Table D-1 identifies vibration as an aging mechanism. Ed to provide full citation.
- c. Clause 6.7.3 add “Arrhenius Methodology should only be used for thermal aging analysis of the safety related equipment to determine estimation of thermal life at a given temperature. The Arrhenius model shall not be used to shorten LOCA/DBE post accident testing time duration considering that humidity aging and degradation effect resulting from LOCA/ DBE accident environment is a time dependent degradation mechanism to determine any impact should hydrolization develops based on real time test duration, not accelerated time. This will ensure any degradation damage due to humidity can be detected during entire accident profile and prevention fix can be developed.”

Discussion:

- Chris pointed out the standard deals with aging assessment rather than qualification of equipment in accident scenarios.
- Ed identified that real time testing has indicated this caveat is necessary because severe accident conditions may exceed “normal” effects and should be included to enhance awareness.
- Jacob is inclined to agree with Ed, but noted 6.7.3 may not be the appropriate place. He also pointed out his discussion on a similar topic in the last meeting had been closed with no action required.
- Rebecca noted the standard is a higher level of aging assessment rather than a discussion of equipment environmental qualification.
- Ed noted there is a gap that should be filled in discussion of qualifications.
- Team decided to share this discussion with members of SC-2 to discuss the proper place in IEEE standards to close this gap.

8. Action Item Recap

- i. **All**. Evaluate content of EPRI NP-1558 Rev 1 (3002018283), Activation Energy Use & Verification, activation energy may require changes to the standard. ALL team to consider the issues.
- b. **Rebecca**. Issue standard draft 0g containing Annex G updates.
- c. **Rebecca**. Report on NPEC change in approach to titles for standards.
- d. **All**. Consider change title from “...Facilities” to “...Nuclear Facilities.” ALL be prepared to discuss at the next meeting.
- e. **Ed Mohtashemi**. Provide full citation for IEC/IEEE 60980-344 to add reference to Annex G prior to the next meeting.
- f. **Rebecca**. Discuss identification of accident scenario evaluations for environmental qualification using the Arrhenius method in IEEE standards with SC-2. Rebecca

9. Action Items on Hold for later evaluation
 - a. Include EPRI lifetime graphic in final version.
10. Next Meeting
 - a. Monday, July 24, 2023, 3-5 pm EDT
10. Meeting adjourned at 12:15 EST.

WG 3.4 June 23, 2023 Meeting Attendees Roster

Members:

Name	Affiliation	Present
Rebecca Steinman	Self/Constellation	x
Suresh Channarasappa	Westinghouse	x
George Kyle	Self	x
Chris Abernathy	TVA	x
George Ballassi	GD/Electric Boat	
James Gleason	Self	
Steven Graham	Duke Energy	x
John Kickhofel	Apollo+ Nuclear	
Robert Konnick	Marmon Innovation and Technology	x
Tom Koshy	DNSFB	
Jacob Kulangara	DOE/NASA	x
G. Singh Matharu	NRC	x
Ed Mohtashemi	Self	x
Khoi Nguyen	NRC	
Eric Rasmussen	R-SCC	

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