

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 23 – 2

Wednesday Morning, 26 Jul 2023
Buffalo, NY

Members Present:	George Ballassi (PC) (T)	Jigar Patel
	Suresh Channarasappa	Clint Pierce
	Tom Crawford (PC) (T)	Jim Reddy
	Jacob Kulangara	Rebecca Steinman (Chair) (T)
	Ed Mohtashemi (T)	Khadijah West (S)
	Khoi Nguyen	Yvonne Williams (PC)

T – participating by WebEx or telephone

Members Absent:	John Beatty	Ted Riccio (H)
	Hamid Heidarisaifa (C)	Phil Ward (C)
	Jim Liming (PC) (H)	Kiang Zee
	Jim Parello	
	Joe Napper (C)	

Guests: None

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

Rebecca called the meeting to order at 8:43 AM EST. The meeting met the quorum requirements to conduct business with 12 of 15 members present, as shown in Attachment 2.

Rebecca welcomed everyone, and thanked those who were able to travel and attend in person as she was unable to do so. She announced all current SC-3 members have signed up in the Member Planet system. She then presented the draft agenda. Jacob moved to approve the agenda; Tom seconded. The agenda was unanimously approved by voice vote. The approved agenda is included in Attachment 1.

Khadijah reviewed the Patent Slides and the Copyright slides. They are also included as Attachments 9 & 10.

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2.0 Secretary's Report

- **SC-3 Approval of S23-1 Meeting Minutes**

The SC3 23-1 draft meeting minutes were reviewed, and a few minor changes were identified. Yvonne moved to approve as amended; and Tom seconded. The minutes were approved unanimously by voice vote.

- **Action Item Status**

Khadijah reviewed and updated the Action Item list.

The updated action item list is provided in Attachment 4.

- **Alligator Fund**

There were no expenses and no meeting fee was collected for this meeting. Tom is the custodian of the Alligator Fund, which has a current balance of \$407.36. Status is contained in Attachment 3.

3.0 Chair's Report

- **Leadership Review / Membership**

Rebecca is the Chair and Khadijah is Secretary. Call for participation in SC-3 for new members and to fill the Vice Chair position. Kudos to WG chairs for gaining new participation in activities. Rebecca encouraged WGs to elevate their participants to member status and to grow the membership of SC-3. Call for nominations for leadership of SC-3 welcoming someone to be Vice Chair. Due to other obligations, Rebecca may quit IEEE after 1205 is published at the end of 2024. SC-3 needs plan for future leadership in 2024.

Kiang Zee was contacted. Kiang indicated that he would like to become a corresponding member of SC-3. Khadijah moved to approve the change in membership status for Kiang from Full to Corresponding member; Yvonne seconded. The status change was unanimously approved by voice vote. Tom spoke with Jim Napper who confirmed that he wants to remain a corresponding member.

During the SC-3 meeting, John Beatty resigned from SC-3 via email. Yvonne moved to let John retire as desired; John will no longer be a member of SC-3 or the associated WGs. Suresh seconded the motion. The change in membership status was unanimously approved by voice vote.

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- **Leadership Telecons**

No Leadership telecons were held.

- **NPEC Preparations**

There are no activities planned for SC-3 in the NPEC 23-2 meeting. The NPEC meeting is scheduled from 9:00 am until 4:00 pm EST. Currently there is no option to attend virtually. There is a \$100 meeting fee, payable in cash or by credit card to Keith Bush. This fee applies to all attending NPEC meetings in person, as well as those who attend only SC or WG meetings.

In the coming January meeting, NPEC 24-1, participants will be able to pay the attendance fees online. The meeting will be co-located with the larger PES meeting. The NPEC meeting will remain the same.

ANS “Nuclear News” magazine is advertising NPEC meeting notices with links. Approximately 8,000 to 10,000 copies of the magazine are distributed.

4.0 Old Business

- **Standards Status**

A copy of the updated SC-3 standards schedule is provided in Attachment 8, which tracks regulatory guide endorsements by the NRC. The working group chairs should be aware of the corresponding regulatory guides and consider the exceptions taken by NRC when performing revisions of standards. The current NPEC SC-3 standards schedule is provided in Attachment 5.

Rebecca reminded everyone that all NPEC standards are on iMeet Central. The main location, “NPEC Standards Library” folder, avails current standards to all SCs and WGs. Each SC is responsible to update its standards in the main folder. The previous revision should be moved to the subfolder “Old”. If necessary, contact Rebecca to assist with updates.

Yvonne stated that there is more attention on IEC standards and joint logo standards. She asked if there is a possibility of getting access to these standards on iMeet. Rebecca will mention it at AdCom.

5.0 New Business

Rebecca discussed that NPEC will be updating its Policies and Procedures (P&P), which was last updated in 2018. The NPEC P&P manual will be updated per the requirements of IEEE SA. Potential changes include: minor administrative changes, voting membership attendance will change from 4 of last 6 meetings to 2 of last 4 meetings, and a new IEEE SA membership requirement for SC voting members. After NPEC P&P

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update, WG P&Ps should be updated accordingly. Tom suggested that Rebecca ask AdCom to mention corresponding and honorary members.

Jacob asked about files for IEEE 692, whether the working files are in iMeet Central. He was concerned that if there were future interest in revising it that the files could be located.

6.0 Working Group Reports

- **WG-3.1**

IEEE 336 was published in September 2020. It will expire in 2030.

IEEE 338 was approved in December 2022. It will expire in 2032.

IEEE 1819 was published in 2016 and will expire in 2026.

WG meetings were held yesterday, 7/25, and will continue this afternoon, 7/26. Yvonne is working on a list of guests that participated in the meetings for 1819 after the call for participation. Work on the revision to 1819 is starting.

Ed stated that 1819 may face challenges in the license renewal arena. Utilities have differing views.

- **WG-3.2**

No report. IEEE 692 will be allowed to expire.

- **WG-3.3**

IEEE 577 was approved in February 2022. It will expire in 2032.

IEEE 933 expires in 2023. Khoi stated that the ballot for P933 initially failed because less than 50% of NPEC members voted. As of 7/10/23, the ballot passed. Ballot comments were discussed in the WG meeting.

IEEE 352 expires in 2026. The PAR was submitted in December 2022. Monthly virtual working meetings continue with a break in December due to the holiday season.

WG meetings were held yesterday, 7/25, and will continue this afternoon, 7/26.

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- **WG-3.4**

P1205 held a 100% virtual meeting this week on Monday 7/24. Rebecca stated that monthly meetings have achieved 70% completion of the revision. The normative review was completed on 7/24.

Plans to preview at NPEC 24-1 for P1205. The WG noticed an inconsistency in the standard and changed the scope but not the title. Need to submit a revised PAR and request extension. Fifteen members, with 8-12 engaged and attending regularly. Yvonne proposed not changing the title to remain focused on nuclear power in 10 CFR 50.

7.0 Action Items

Khadijah reviewed the Action Items from today's meeting:

- 23-2-A Follow up with Joe Napper so that he updates his iMeet Central account with current information.
- 23-2-B Each WG to provide desired input into standards forum presentation.
- 23-2-C Add Member Planet link to iMeet Central. (All new members need to sign up through Member Planet.)

8.0 Liaison Reports

Khoi provided the liaison reports provided as follows:

- NRC – The report was displayed for awareness. The full report is in Attachment 7 and on iMeet Central.
- ASME – No new report was available; Attachment 6 is not used.
- SCoRA – No new report was available.

Yvonne mentioned the upcoming IEEE standards development meeting with NRC on 9/13/23. The IEEE planning pre-meeting will be on 8/3/23.

9.0 Next Meeting

Upcoming meetings:

- NPEC 24-1 is scheduled for 1/7 – 1/11/2024 in New Orleans, LA. It will be a joint meeting with NPEC and Power & Energy Society (PES) Joint Technical Committee Meeting (JTCM).
- NPEC 24-2 is expected to take place in California.

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10.0 Adjournment

Yvonne made a motion for adjournment and Jacob seconded. The motion was approved by voice vote and the meeting was adjourned at 10:56 AM EST.

Prepared by Khadijah West

iMeet Central SC-3 Workspace:

<https://ieee-sa.imeetcentral.com/npecsc3/>

SC-3 Website information:

<http://sites.ieee.org/npec-sc3/>

NPEC Standards Website information:

<http://sites.ieee.org/pes-npec/npec-standards/>

ATTACHMENTS

Attachment 1 Agenda	Attachment 2 Rolling Attendance	Attachment 3 Alligator Fund
Attachment 4 Action Items	Attachment 5 NPEC SC-3 Standards Status Spreadsheet	Attachment 6 ASME Liaison Report (None)
Attachment 7 NRC Liaison Report	Attachment 8 SC-3 Standards Schedule	Attachment 9 IEEE Patent Slides
Attachment 10 IEEE Copyright Slides		

Agenda – Meeting 23- – Buffalo, NY w/ WebEx Option

NPEC Subcommittee SC-3, Operations, Maintenance, Aging, Testing, and Reliability

Meeting Date/Time:	Wednesday, 07/26/2023 0830-1130 EST	Chairman:	Rebecca Steinman
	Hotel Meeting Room: Larkin	Vice Chair:	TBD
		Secretary:	Khadijah West

Desired Outcomes:	<ol style="list-style-type: none"> 1. Review status/activities of each SC Working Group 2. Review status of membership and officer succession 3. Update SC3 standards master schedule
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WHAT	WHO	WHEN
Welcome, Review Desired Outcomes <ul style="list-style-type: none"> • Meeting logistics • Patent and Copyright Slides • Introductions 	K. West All	0830 - 0840
Chairman's Introduction <ul style="list-style-type: none"> • Opening remarks • Review/approve agenda 	R. Steinman	0840 - 0845
Secretary's Report <ul style="list-style-type: none"> • Approval of SC3 23-1 Meeting Minutes • Action Item review/status • Alligator fund report 	K. West	0845 - 0900
Chairman's Report <ul style="list-style-type: none"> • Membership Status & Future Leadership • NPEC meeting preparations (tomorrow's meeting and future meetings) 	R. Steinman	0900 - 0915
BREAK	All	0915 - 0930
Working Group Reports <ul style="list-style-type: none"> • WG-3.1 (Testing) – 336 expires in 2030, 338 expires in 2032, 1819 expires in 2026 • WG-3.2 (Security) – 692 expires in 2023 • WG-3.3 (Reliability) – 577 expires in 2032, 933 balloting, 352 expires in 2026 • WG-3.4 (Aging) – 1205 expires in 2024 	Y. Williams N/A K. Nguyen R. Steinman	0930 - 0950 N/A 0950 - 1010 1010 - 1030
Old Business <ul style="list-style-type: none"> • Master schedule for Std review/updates • NPEC Standards on iMeet 	WG Chairs	1030 - 1045
New Business/Rumor Mill/Drumbeats <ul style="list-style-type: none"> • NPEC P&P Update 	R. Steinman	1045 - 1055
Liaison Reports <ul style="list-style-type: none"> • NRC report 	K. Nguyen	1055 - 1110
Review of Action Items	K. West	1110 - 1115
Wrap-up & Next Meeting Schedule <ul style="list-style-type: none"> • PES JTCM, January 8 – 11, 2024 Sheraton New Orleans, New Orleans, LA 	R. Steinman	1115 - 1125
Meeting Closeout/Adjournment	R. Steinman	1130

NPEC Subcommittee SC-3
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Attendance

Last	First	SC-3 Member	2022-1	2022-2	2023-1	2023-2
Ballassi	George	X		X		T
Beatty	John	X				Resigned
Channarasappa	Suresh	X	X	X	X	X
Crawford	Tom	X	T	X	X	T
Heidarisaifa	Hamid	C				
Kulangara	Jacob	X	X	X	T	X
Liming	Jim	H				
Mohtashemi	Ed	X	T	T	T	T
Napper	Joe	C			X	
Nguyen	Khoi	X	X	X	X	X
Parello	Jim	X	N	Appointed	N	
Patel	Jigar	X			Appointed	X
Pierce	Clint	X	X	X		X
Reddy	Jim	X			Appointed	X
Riccio	Ted	H				
Sellers	Craig	C				
Steinman	Rebecca	X	X	X	X	T
Ward	Phil	C	X	x		
West	Khadijah	X		T	X	X
Williams	Yvonne	X	X	T	X	X
Zee	Kiang	X				Corres.

Members are shown in **bold** and colored yellow as of end of most recent meeting.
Corresponding and Alternate members are shown in green.

TOTAL VOTING ATTENDEES	X		7	9	9	8
TOTAL NON-VOTING ATTENDEES	O		0	0	0	0
TOTAL VOTING TELECON PARTICIPANTS	T		2	4	4	4
TOTAL NON-VOTING TELECON PARTICIPANTS	N		1	0	1	0
TOTAL ATTENDEES			10	13	14	12
TOTAL VOTING MEMBERS PARTICIPATING			9	13	13	12
TOTAL VOTING MEMBERS		15				
Legend						
X	Voting Attendees					
O	Non-Voting Attendees					
T	Voting Telecon Participants					
N	Non-Voting Telecon Participants					

Attachment 3

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

Alligator Fund

The Alligator Fund is made up of voluntary contributions from SC-3 members to defray the cost of meeting rooms, refreshments, etc.

Meeting	Beginning Balance	Meeting Contributions	Expenses	Ending Balance
S14-1	\$906.36	\$0.00	\$0.00	\$906.36
S14-2	\$906.36	\$0.00	\$0.00	\$906.36
S15-1	\$906.36	\$0.00	\$0.00	\$906.36
S15-2	\$906.36	\$0.00	\$0.00	\$906.36
S16-1	\$906.36	\$0.00	\$0.00	\$906.36
S16-2	\$906.36	\$0.00	\$0.00	\$906.36
S17-1	\$906.36	\$0.00	\$65.19	\$841.17
S17-2	\$841.17	\$0.00	\$51.08	\$790.09
S18-1	\$790.09	\$0.00	\$52.16	\$737.93
S18-2	\$737.93	\$0.00	\$0.00	\$737.93
S19-1	\$737.93	\$0.00	\$0.00	\$737.93
S19-2	\$737.93	\$50.00	\$50.00	\$737.93
S20-1	\$737.93	\$50.00	\$107.21	\$680.72
S20-2	\$680.72	\$0.00	\$0.00	\$680.72
S21-1	\$680.72	\$0.00	\$0.00	\$680.72
S21-2	\$680.72	\$0.00	\$0.00	\$680.72
S22-1	\$680.72	\$0.00	\$0.00	\$680.72
S22-2	\$680.72	\$0.00	\$171.00	\$509.72
S23-1	\$509.72	\$0.00	\$102.36	\$407.36
S23-2	\$407.36	\$0.00	\$0.00	\$407.36

Attachment 4**NPEC Subcommittee SC-3**
*Operations, Maintenance, Aging, Testing, and Reliability***Action Items List**

Item No.	Subcommittee 3.0 Actions	Owner	Due Date	Closure Comments
23-1-A	Ask C. Orlando whether IEEE can notify local IEEE organizations to offer participation in SC-3 WGs.	Steinman	23-2 Mtg	
23-1-B	Suggest to AdCom/NPEC that we advertise upcoming NPEC meetings in ANS Nuclear News and ANS News (email).	Steinman	23-2 Mtg	
23-2-A	Follow up with Joe Napper to get him to update iMeet Central account	Steinman	24-1 Mtg	
23-2-B	Each WG provides desired input into standards forum presentation.	Nguyen/Williams/Steinman	8/21/23	
23-2-C	Add Member Planet link to iMeet Central	Steinman	24-1 Mtg	

SC-3 "Operations, Maintenance, Aging, Testing & Reliability"

Chair: Rebecca Steinman

Color Code	
Document 0 to 2 years old	2
Document 3 - 4 years old	1
Document 5 - 6 Years old	0
Document 7 - 8 years old	2
Document 9 or more years old	3
Total	8

PROJECT	Year	Standard Expiration	PAR Expiration	TITLE	Regulatory Guide Ref/Endorsment	Working Group	Chair	Vice Chair	Cycle Year	23-01	23-02	24-01	Status/Comments
336	2020	2030	N/A	Recommended Practice for Installation, Inspection, and Testing for Class 1E Power, Instrumentation, and Control Equipment at Nuclear Facilities	1.30R0 - 1972 IEEE-336_1971 1.128R2	1	Y. Williams		3				
338	2023	2033	Dec-2022	Standard for Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems	1.118R3 - 1995 IEEE-338_1987	1	Y. Williams		0				SA Comment Resolution Complete. IEEE Editorial issues are being addressed. Formal issue be in 2023
352	2016	2026	Dec-2027	Guide for General Principles of Reliability Analysis of Nuclear Power Generating Station Systems and Other Nuclear Facilities		3	K. Nguyen		7				New PAR Submitted-NesCom Jan23
577	2022	2032	Dec-2022	Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Power Generating Stations and Other Nuclear Facilities		3	K. Nguyen		1				Standard Published
692	2013	2023	Dec-2022	Standard Criteria for Security Systems for Nuclear Power Generating Stations		2	Vacant		10				WG is not active-Std will be moved to Inactive reserve
933	2013	2023	Dec-2025	Guide for the Definition of Reliability Program Plans for Nuclear Generating Stations and Other Nuclear Facilities		3	K. Nguyen		10	Pre view			Balloting
1205	2014	2024	Dec-2026	Guide for Assessing, Monitoring, and Mitigating Aging Effects on Electrical Equipment Used in Nuclear Power Generating Stations and Other Nuclear Facilities	1.248R0 - 2022 IEEE-1205_2014	4	R. Steinman	S. Channarasappa	9				Draft Development
1819	2016	2026	Dec-2026	Standard for Risk-Informed Categorization and Treatment of Electrical and Electronic Equipment at Nuclear Power Generating Stations and Other Nuclear Facilities		1	Y. Williams		7				Draft Development

U.S. Nuclear Regulatory Commission (NRC) Liaison Report
IEEE NPEC, SC2, ESSB, ICC, & PSRC – July 2023

1. General

- a. Vogtle 3 has generated electricity for the first time, and the unit has successfully synchronized and connected to the electric grid.

2. Operating Reactors

- a. Open Phase Condition – All inspections are completed (bulletin closure letters issued for individual plants); Bulletin 2012-01 was closed on March 06, 2023 (See Federal Register Notice <https://www.federalregister.gov/documents/2023/03/06/2023-04501/nrc-bulletin-2012-01-design-vulnerability-in-electric-power-system>).
- b. The Power Operated Valve (POV) inspections started at the beginning of 2020 and no major EQ issues have been identified to date. There was a public meeting on December 8, 2020, to share with Industry and the Public the findings and lessons learned while implementing IP 71111.21N.02, "Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements," inspections in 2020. The inspectors will continue to look at EQ as part of the design basis and licensing conditions of components they inspect. NRC Information Notice 2021-01 (May 6, 2021) discusses lessons learned from initial POV inspections. The inspections have been completed.
- c. Commercial Grade Dedication inspections began in January 2023.
- d. Subsequent License Renewal (North Anna, Point Beach, Oconee, St. Lucie, and Monticello) and initial License Renewal (Comanche Peak) reviews currently underway.
- e. Vendor Inspections – Inspection reports for various vendor inspections that have been performed over the past year can be found on the NRC website - <https://www.nrc.gov/reactors/new-reactors/how-we-regulate/oversight/quality-assurance/vendor-insp/insp-reports.html>

3. New Reactors

- a. NuScale submitted their standard design approval (SDA) application for a US460 Small Modular Reactor in December 2022. The NRC performed the acceptance review and identified technical sufficiency issues in the SDA application related to density wave oscillation. The NRC staff has concluded that supplemental information on this topic is required before the NRC staff could accept the SDA application for docketing and conduct a detailed technical review of all aspects of the application.

4. Advanced Reactors

- a. The NRC is evaluating technical reports from multiple advanced reactor designs (i.e., pre-application stage). <https://www.nrc.gov/reactors/new->

[reactors/advanced/licensing-activities/pre-application-activities.html](https://www.nrc.gov/reactors/advanced/licensing-activities/pre-application-activities.html)

- b. Under an MOU with DOE that was signed in early 2021, the NRC has provided 2 staff members on rotation to Idaho National Labs to support the National Reactor Innovation Center. The staff is working on different projects related to Advance reactors, including the Advance Construction Technology Initiative, to assess ways of reducing cost and schedule for new nuclear power plant builds (e.g., SMRs and Advanced Reactors).

5. Research Reactors

- a. The NRC completed the safety evaluation of the Hermes construction permit application in June 2023. Kairos Power LLC is a U.S. based company developing a fluoride salt cooled high temperature reactor (KP-FHR) using TRISO fuel in pebble form. <https://www.nrc.gov/reactors/non-power/hermes-kairos.html>
- b. The NRC accepted for review a construction permit application from Abilene Christian University, which requests permission to build its Molten Salt Research Reactor facility on the university's campus in Abilene, Texas.
- c. The NRC has concluded the National Institute of Standards and Technology has satisfied the requirements to safely restart the NIST research reactor in Gaithersburg, Maryland.

6. Rulemaking

- a. The NRC staff is developing 10 CFR Part 53, "Risk Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors" rulemaking, which will establish a new framework for licensing and regulating advanced nuclear reactors. On September 30, 2022, the NRC staff released the draft proposed Part 53 rulemaking package. Part 53 info: <https://www.nrc.gov/reactors/new-reactors/advanced/rulemaking-and-guidance/part-53.html>

7. Regulatory Guide (RG) Status

- Environmental Qualification: RG 1.89, Rev 2
 - Endorsement of IEC/IEEE Std. 60780-323-2016
 - Issued April 2023
- Environmental Qualification of Connection Assemblies: RG 1.156
 - Endorsement of IEEE Std. 572-2019
 - Issued in Feb 2023
- Environmental Qualification of Safety-Related Battery Chargers, Inverters, and UPSs: RG 1.210
 - Endorsement of IEEE Std. 650-2017
 - Draft Guide published for public comment in Feb 2023
- Risk-Informed Categorization of Electrical and Electronic Equipment
 - Endorsement of IEEE Std. 1819-2016
 - Determining path forward of endorsing in a new RG or an existing RG 1.201 on categorization of SSCs

Attachment 7

- The NRC held a public meeting in February 2022 to further discuss the staff's consideration of the potential endorsement for IEEE Std. 1819-2016.
- Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications: RG 1.129
 - Endorsement of IEEE Std. 450-2020
 - Issued in March 2023
- Criteria for the Protection of Class 1E Power Systems and Equipment: new RG
 - Endorsement of IEEE Std. 741-2022
 - Draft in development
- Sizing lead-acid batteries: RG 1.212
 - Endorsement of IEEE Std. 485-2020
 - Issued June 2023
- Installation Design & Installation of Vented Lead-Acid Batteries: RG 1.128
 - Endorsement of IEEE Std. 484-2019
 - Periodic Review issued May 2023 – ML23102A032
 - Draft in development
- Guidelines for Lightning Protection: RG 1.204
 - Endorsement of various IEEE, UL, and NFPA standards
 - Draft Guide 1409 issued May 2023 (public comments due 6/2)
- Environmental Qualification of Safety-Related Actuators: RG 1.73
 - Endorsement of IEEE Std. 382-2019
 - Draft Guide published in May 2023
- Criteria for Class 1E Power Systems: RG 1.32 and incorporate RG 1.41
 - To endorse IEEE Std. 308-2020
 - Draft in development
- Installation, Inspection and Testing of Instrumentation and Electric Equipment: RG 1.30
 - To endorse IEEE Std. 336-2020
 - Draft in development
- Motor-Operated Valve Motor Application, Protection, Control, and Testing: new RG
 - To endorse IEEE Std. 1290-2015
 - Draft in development
- Criteria for Programmable Digital Devices in Safety-Related Systems of Nuclear Power Plants: RG 1.152
 - Endorsement of IEEE Std. 7-4.3.2-2016
 - Issued July 2023

8. Research

- a. NRR submitted user need requests (UNR 2011-014 and UNR 2016-012) to RES to perform research on aging cables and methods of condition monitoring.
 - A research project contract was awarded to NIST to perform the following tasks: confirm the adequacy of the condition-monitoring methods, including: (a) mechanical conditions of tensile test (elongation at break), and compressive modulus (indenter method); (b) dielectric condition indicators (insulation resistance, and frequency domain reflectometry) (c)

chemical indicators (oxidation time/temperature, Fourier transform infrared spectroscopy, mass loss Thermogravimetric analysis).

- The objective of the research project was to confirm the adequacy of commonly used condition monitoring methods to track the aging of cables.

The NIST Project contract was completed September 2021.

- A research project contract was awarded to Kinectrics to perform the following tasks: 1) perform a Loss-of-Coolant Accident (LOCA) Test on the cables aged during the NIST Project to simulate 50, 60, and 80 years of operation, 2) Determine if the condition monitoring techniques evaluated during the NIST Project are suitable to perform Condition Based Equipment Qualification.
 - Kinectrics conducted the 150Mrads (plus 10% margin) Radiation Accident Dose at the Southwest Research Institute (SWRI).
 - Once the Radiation Accident Dose and Post-Radiation Accident Dose Functionality Tests were completed, the LOCA and Post-LOCA Tests were completed by Kinectrics.

The final NUREG report is expected to be issued in the summer 2023.

- The EPRI tan delta approach to management of submerged cable confirmatory research was completed, and the final Research Information Letter was published Jan 2022.
- b. NRR submitted a research assistance request (RAR-NRR-2022-003) to RES to conduct a literature search on the Assessment of the Harmonics Effects on Voltage Relays in Nuclear Power Plants (NPPs). The final Technical Letter Report is expected to be issued June 2023.

9. Part 21 Reports

a. The following Part 21 Reports were issued in the past year (more information is available on the NRC website under the Part 21 Reports webpage - <https://www.nrc.gov/reading-rm/doc-collections/event-status/part21/index.html>):

- 2022-01-00 - Report Under 10 CFR 21 of Noncompliances to Specification for N7030 Temperature Transmitter
- 2022-02-00 - Engine Systems, Inc. Part 21 Reportable Notification on a Pressure Regulator Valve
- 2022-05-00 - 10 CFR Part 21 Notification for a Curtiss-Wright Supplied RCS/Dresser Actuator, P/N SURE-24-10-4
- 2022-07-00 – Notification of the Potential Existence of Defects Pursuant to 10 CFR Part 21
- 2022-08-00 - 10 CFR Part 21 Notification – Arnold Magnetics Power Supply Part Number PBM-24-106
- 2022-09-00/01/02/03 - Potential Defect in Configuration of Quick Disconnect Connector Cable Assemblies (P/N: 913602-111)
- 2022-10-00 - Solenoid Coil Failure of Model 38878-8 Solenoid Valve at Catawba Nuclear Station for use on FWIV Actuator

Attachment 7

- 2022-11-00 - Notification of 10 CFR Part 21 Defect and Failure to Comply: Relay - Failure to Change State
- 2022-12-00/01 - Part 21 Interim Report Notification – Premature Failures of Valcor Coil Shell Assemblies
- 2022-13-00 –16-AAT907B Power Supply 10 CFR Part 21 Notification
- 2022-14-00 - Interim Potential Part 21 on Siemens Medium Voltage Circuit Breakers with 3AF Operators Sold to Wolf Creek Nuclear Generating Station
- 2022-15-00 - Interim 10 CFR 21.21(a)(2) Report Regarding Framatome Supplied Siemens Medium Voltage Circuit Breakers
- 2022-19-00 - Notification under 10 CFR Part 21 for Rosemount 3153N Series Pressure Transmitter with Rosemount 3159 Remote Seals with the LG1 option
- 2022-21-00 - NRC 10 CFR Part 21 Notification, Nutherm, written notification of potential defect found in Nutherm/Sola Hevi-Duty Uninterruptible Power Supply (UPS), S4K2U1000-NM 191
- 2022-22-00 - Basic Component Which Fails to Comply or Contains a Defect (Woodward 2301A Emergency Diesel Generator Electronic Speed Control Module)
- 2022-23-00/01/02/03 - Notification under 10 CFR Part 21 for Schneider Electric P/N: ASP840-000 Modicon Primary/Secondary Power Supply
- 2022-24-00 - 10 CFR Part 21 Report 38878-8 Solenoid Valve at Duke, Catawba Flowserve Evaluation #105
- 2022-25-00/01 - Report Notification Pursuant to 10 CFR Part 21.21, Regarding QualTech NP Supplied Eaton TRM5 Timing Relays
- 2022-26-00/01/02 - Report Notification Pursuant to 10 CFR Part 21.21, Regarding Peerless 56 Frame DC Motors
- 2023-01-00/01 - Interim Report Notification Pursuant to 10 CFR Party 21.21, Regarding Deviation or Failure to Comply Associated with a Limitorque Actuator
- 2023-02-00 - Interim Report Notification Pursuant to 10 CFR Party 21.21, Regarding Siemens Medium Voltage Circuit Breakers
- 2023-03-00/01 - Report Notification Pursuant to 10 CFR Part 21.21 Defect identified in Automatic Transfer Switch PN: NLI-ATS480A400X1
- 2023-04-00 - Initial Report Notification Pursuant to 10 CFR Part 21.21 Defect identified in Automatic Transfer Switch PN: NLI-ATS480A400X1
- 2023-05-00 - Initial Report Notification Pursuant to 10 CFR Part 21.21, Regarding DS-206DC/416/632/II-516 Breakers – Erroneous Change of State (Eaton Corporation Breakers)
- 2023-06-00 - Interim Report Notification Pursuant to 10 CFR Party 21.21, Regarding Deviation or Failure to Comply Associated with a GE HFA Relay

10. Generic Communications - None

NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, and Reliability
SC-3 Standards Schedule

NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, and Reliability
SC-3 Standards Schedule

Attachment 8

Based on previous NPEC spreadsheet, G. Johnson xref of stds, and nrc.gov

STD	Standard		Age as of: 7/26/2023	Time left (yrs)	PAR Expires	Status notes
	Approved	Expires				
336	9/24/2020	9/24/2030	2.8	7.2	-	
338	12/3/2022	12/3/2032	0.6	9.4	-	
352	12/7/2016	12/7/2026	6.6	3.4	12/2027	
577	2/9/2022	2/9/2032	1.5	8.5	-	
692	8/23/2013	8/23/2023	9.9	0.1	-	Allow to go inactive
933	12/11/2013	12/11/2023	9.6	0.4	12/2025	
1205	3/27/2014	3/27/2024	9.3	0.7	12/2026	
1819	9/22/2016	9/22/2026	6.8	3.2	12/2026	

Endorsing Reg Guide Information				
RG number	Rev	Date	Date of Std	Staff review
1.30	0	Aug-72	1971	2022 - Revise
1.118	3	Apr-95	1987	2023 - Revise
1.248	0	Oct-22	2014	

	WG 3.1	WG 3.2	WG 3.3	WG 3.4
2023-1	1819		933	1205
2023-2	1819		933	1205
2024-1	1819		352	1205
2024-2	1819		352	1205
2025-1	1819		352	
2025-2	1819		352	
2026-1	336		352	
2026-2	336		352	
2027-1	336			
2027-2	336			
2028-1	336			
2028-2	336		577	
2028-1	338		577	
2028-2	338		577	
2028-1	338		577	
2028-2	338		577	
2029-1	338		577	
2029-2	338		577	

Balloting
and
Approval

Includes:

- 1 Preview, ballot pool, ballot, receive comments
- 2 Resolve comments, recirc
- 3 Submit to/ revcom approval/publish

INSTRUCTIONS FOR THE WG CHAIR

The IEEE SA strongly recommends that at each WG meeting the chair or a designee:

- Show slides 1 through 4 of this presentation
- Advise the WG attendees that:
 - IEEE's patent policy is described in Clause 6 of the *IEEE SA Standards Board Bylaws*;
 - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
 - There may be Essential Patent Claims of which IEEE is not aware. Additionally, neither IEEE, the WG, nor the WG Chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
- Instruct the WG Secretary to record in the minutes of the relevant WG meeting:
 - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
 - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
 - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.
- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG Chair review the guidance in *IEEE SA Standards Board Operations Manual* 6.3.5 and in FAQs 14 and 15 on inclusion of potential Essential Patent Claims by incorporation or by reference.

Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE SA Standards Board.

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- Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
- Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims

**Early identification of holders of potential
Essential Patent Claims is encouraged**

WAYS TO INFORM IEEE

- **Cause an LOA to be submitted to the IEEE SA (patcom@ieee.org); or**
- **Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or**
- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

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- **All IEEE SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
 - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
 - **Don't discuss specific license rates, terms, or conditions.**
 - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
 - **Technical considerations remain the primary focus.**
 - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
 - **Don't discuss the status or substance of ongoing or threatened litigation.**
 - **Don't be silent if inappropriate topics are discussed. Formally object to the discussion immediately.**

For more details, see *IEEE SA Standards Board Operations Manual*, clause 5.3.10 and *Antitrust and Competition Policy: What You Need to Know* at <http://standards.ieee.org/develop/policies/antitrust.pdf>

PATENT-RELATED INFORMATION

The patent policy and the procedures used to execute that policy are documented in the:

- ***IEEE SA Standards Board Bylaws***
(<http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6>)
- ***IEEE SA Standards Board Operations Manual***
(<http://standards.ieee.org/develop/policies/opman/sect6.html#6.3>)

Material about the patent policy is available at
<http://standards.ieee.org/about/sasb/patcom/materials.html>

**If you have questions, contact the IEEE SA
Standards Board Patent Committee
Administrator at patcom@ieee.org**

IEEE SA
STANDARDS
ASSOCIATION



IEEE SA COPYRIGHT POLICY

NOVEMBER 2019

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 - Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy;
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<https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7>
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<https://standards.ieee.org/about/policies/opman/sect6.html>
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 - http://standards.ieee.org/develop/policies/best_practices_for_ieee_standards_development_051215.pdf
- Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)
 - <https://standards.ieee.org/about/policies/opman/sect6.html>