

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 22 – 2

Wednesday Morning, 27 Jul 2022
Chattanooga, TN

Members Present:	George Ballassi (PC)(T)	Jim Parello (C)
	Suresh Channarasappa	Clint Pierce
	Tom Crawford (PC)	Rebecca Steinman (Chair)
	Jacob Kulangara	Phil Ward
	Ed Mohtashemi (T)	Khadijah West (T)
	Khoi Nguyen	Yvonne Williams (PC)(T)

T – participating by WebEx or telephone

Members Absent:	John Beatty	Craig Sellers (C)
	Hamid Heidarisaafa (C)	Ted Riccio (H)
	Jim Liming (H)	Kiang Zee
	Joe Napper (C)	

Guests:	Christian Orlando	Jim Reddy
	Jigar Patel	

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

Rebecca called the meeting to order at 8:45 AM EST due to some technical issues. The meeting has met the quorum requirements to conduct business with 12 of 15 members present, as shown in Attachment 2.

Rebecca welcomed everyone, including those participating by Webex. She then presented the draft agenda. Tom moved to approve the agenda as corrected; Jacob seconded. The agenda was unanimously approved by voice vote. The approved agenda is included in Attachment 1.

Rebecca reviewed the Patent Slides and the Copyright slides; noting that these are available in iMeet Central. They are also included as Attachments 9 & 10.

Rebecca asked everyone to check their information in the SC-3 Roster during the break. People attending online should send their updates to Tom.

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2.0 Secretary's Report

- **SC-3 Approval of S22-1 Meeting Minutes**

The SC3 22-1 draft meeting minutes were reviewed, and several minor changes were identified. Jacob moved to approve the minutes as corrected, and Khoi seconded. The minutes were approved unanimously by voice vote.

- **Action Item Status**

Rebecca reviewed and updated the Action Item list.

- 17-2-B This item has been open 5 years with no update. Item will be closed effective S22-2.
- 21-2-C WG chairs confirmed no training is needed, Action is closed effective S22-2.
- 22-1-B Completed on 2/2/22. Action closed.
- 22-1-C Purchased for \$171.00. Action closed.

The updated action item list is provided in Attachment 4.

- **Alligator Fund**

There was one expense to the Alligator Fund to purchase the eLuna speakers for \$171.00 and no meeting fee was collected. Tom is the custodian of the Alligator Fund, whose beginning balance was \$680.72 and ending balance is \$509.72. Status is contained in Attachment 3.

3.0 Chair's Report

- **Leadership Review / Membership**

Rebecca Steinman is the Chair, but we still have no Vice Chair or Secretary. Rebecca cannot continue to perform all of the activities of the SC and run the technical aspects of her now active WG and indicated she would be doing some significant arm twisting this fall to find volunteers to help out. Khadija West graciously volunteered to become the new SC secretary and will take over those duties starting with the 23-01 meeting.

Khoi requested two PRA people from NRC be assigned to support SC-3 / WG-3.3, but was only allowed to bring one. Jigar Patel is the new NRC PRA participant.

There was an extended discussion about membership and our need to find additional support for all of our standards. It was suggested that we reach out to Universities (particularly graduate students) and to continue using the IEEE Call for Participation avenue to find interested parties. Rebecca also suggested that the SC reach out to other

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organizations such as NEI, NEDO, ANS Standards Chair, the owners groups, etc. to try to solicit participation by at least a liaison.

Jim Parello requested that he be returned to full SC3 member status. Tom motioned to change Jim from corresponding to full member, George seconded, and the motion was approved unanimously.

- **Leadership Telecons**

No Leadership telecons were held.

- **NPEC Preparations**

The NPEC meeting is scheduled to start at 9 am and end at 4 pm EST. Rebecca reviewed the NPEC Agenda. There is no virtual component to the NPEC meeting. Due to the generous support by Tennessee Valley Authority (TVA) there is also no meeting fee.

4.0 Liaison Reports

Liaison reports were provided as follows:

- NRC – Khoi provided highlights of his report; 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.

5.0 Working Group Reports

- **WG-3.1**

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

IEEE 338 PAR expires in 2022. The WG Preview was completed at N22-1. The initial Ballot completed, with Ballot comments resolved during S22-2. A Recirculation ballot is planned and on-track to publish before the end of 2022.

IEEE 1819 was published in 2016 and will expire in 2026. We will start working on 1819 after 338 work is complete. The PAR has been drafted and provided to AdCom for approval at N22-2. The current task is to encourage the NRC to endorse the standard.

- **WG-3.2**

The PAR for P692 expires in 2023. All efforts to recruit a chair and members for this WG have failed. The standard will be allowed to expire pending the outcome of Action 22-2-C.

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- **WG-3.3**

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

IEEE 933 expires in 2023. The PAR expires in 2025, but that is moot, since the standard expires sooner. WG is actively working on the revision and on-track to preview at N23-1.

IEEE 352 expires in 2026. Khoi developed a draft PAR that proposes to ballot the revised standard in 2025 and publish in June 2026. Khoi requested SC3 approval of the draft PAR. The motion was seconded by Jim and passed unanimously. The PAR was submitted to AdCom and is planned for electronic approval after N22-2.

- **WG-3.4**

WG 3.4 is meeting virtually once a month and is making significant progress on the review and revision effort of IEEE 1205, which expires in 2024. The PAR was approved March 24, 2022 and expires December 31, 2026. Preview is planned for N24-1, and the standard is expected to be published by the end of 2024. Rebecca plans to post the monthly meeting invitation to the SC3 iMeet calendar.

6.0 Old Business

- **Standards Status**

Tom reviewed the Master SC-3 Standards Schedule. It was noted that although the P1205 PAR doesn't expire until 2026, the standard itself was published in 2014 and therefore expires in 2024. Yvonne suggested and provided an update to the SC-3 Standards Schedule showing the standards endorsed by Reg Guides. A copy of the updated SC-3 standards schedule is provided in Attachment 8. The current NPEC SC-3 standards schedule is provided in Attachment 5.

7.0 New Business

- **NPEC Membership**

Tom proposed that SC recommend Khoi and Jim for NPEC membership. Jacob seconded the motion, which passed unanimously.

- **NPEC Standards Hierarchy Chart**

Jim noted that the NPEC Standards Hierarchy chart is being updated and will be discussed at AdCom. The following corrections were noted:

- List all SC-3 standards
- Correct 892 to 692

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- Add a double arrow between 933 and 352

- **NEI Discussion on IEEE 1819**

Victoria Andersen, NEI, and Roy Linthicum, Constellation, provided brief remarks on the NRC endorsement of IEEE 1819. Stated concerns include conflicts between NEI 00-04 and IEEE 1819 (no details provided); the fact that the NRC should not endorse alternative treatments (per the statements of consideration for 10 CFR 50.69), and asking for the business case for developing new IEEE standards. NEI also states their position that if NRC endorsement proceeds, they will request a new Regulatory Guide (RG) be developed instead of a revision of RG 1.201. To date, the industry is only adopting 50.69 for a few plant systems, not the whole plant (for example, Limerick's LAR only included 23 systems). Roy stated that his biggest concern is not with the categorization aspects of the standard, but with the proposed alternative treatments, specifically that utilities want to avoid having to defend their individual alternative treatments.

Following NEI's discussion, our internal SC-3 discussion concluded that we do not really understand NEI's reluctance to accept any guidance relative to alternative treatments.

8.0 Action Items

Yvonne reviewed the Action Items from today's meeting:

- 22-2-A Tom to purchase a long HDMI cable with adaptor before S23-1.
- 22-2-B Rebecca to suggest to AdCom that NPEC should write a letter to Universities requesting support and sharing the updated NPEC brochure. (NOTE: SC2 attempted this without success.)
- 22-2-C Jacob and Jim will attempt to find people to support IEEE 692 and investigate whether or not there is a corresponding IEC physical security standard.
- 22-2-D Locate April 2022 NPEC letter in ADAMS and post final version to iMeet
- 22-2-E Create a cross-reference table of each NPEC standard and the RG that endorses it. Add this table to the Standards Status Spreadsheet.

The revised Action Item List is provided in Attachment 4.

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9.0 Next Meeting

N23-1 will meet January 23-26, 2022 at the Holiday Inn Disney Springs in Orlando, FL. Currently, the plan for N23-2 is to meet in Buffalo, NY and for N24-1 to meet with PES JTCM in New Orleans, LA.

10.0 Adjournment

Jim made a motion for adjournment and Khoi seconded. The motion was approved by voice vote and the meeting was adjourned at 12:50 PM EST.

Prepared by Rebecca Steinman / Tom Crawford

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iMeet Central SC-3 Workspace:

<https://ieeesa.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/>

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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	Attachment 11 N22-1 P338 Preview Slides	Attachment 12 NRC Endorsement of IEEE 1819 Presentation

Agenda – Meeting 22-2 – Chattanooga, TN w/ WebEx Option

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

Meeting Date/Time:	Wednesday, 07/27/2022 0830-1230 EST	Chairman:	Rebecca Steinman
	Hotel Meeting Room: Valley	Vice Chair:	TBD
		Secretary:	TBD

Desired Outcomes:	<ol style="list-style-type: none"> 1. Review status/activities of each SC Working Group 2. Review status of membership and officers 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 Slides • Introductions 	R. Steinman 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 22-1 Meeting Minutes • Action Item review/status • Alligator fund report 	R. Steinman	0845 - 0900
Chairman's Report <ul style="list-style-type: none"> • SC3 Leadership – Succession planning • Membership Status • NPEC meeting preparations & agenda for tomorrow's meeting and future meetings 	R. Steinman	0900 - 0920
Liaison Reports <ul style="list-style-type: none"> • NRC report 	K. Nguyen	0920 - 0940
Working Group Reports <ul style="list-style-type: none"> • WG-3.1 (Testing) – 336 expires in 2030, 338 expires in 2022, 1819 in 2026 • WG-3.2 (Security) – 692 expires in 2023 • WG-3.3 (Reliability) – 577 expires in 2022, 933 in 2023, 352 in 2026 • WG-3.4 (Aging) – 1205 expires in 2024 	Y. Williams N/A K. Nguyen R. Steinman	0940 - 1000 N/A 1000 - 1015 1015 - 1025
BREAK	All	1025 - 1045
Old Business <ul style="list-style-type: none"> • Master schedule for Std review/updates 	R. Steinman	1045 - 1110
New Business/Rumor Mill/Drumbeats	R. Steinman	1110 - 1130
Review of Action Items	R. Steinman	1130-1145
Wrap-up & Next Meeting Schedule	T. Crawford	1145 – 1155
Introduce guest speakers	R. Steinman	1155 - 1200
NEI Led Discussion of IEEE 1819 Alternative Treatment Concerns	V. Andersen T. Basso R. Linthicum	1200-1230
Meeting Closeout/Adjournment	T. Crawford	1230

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

Last	First	SC-3 Member	2020-2	2021-1	2021-2	2022-1	2022-2
Ballassi	George	X	T	T	X		X
Beatty	John	X	T	T	T		
Channarasappa	Suresh	X	T	T		X	X
Crawford	Tom	X	T	T	X	T	X
Heidarisafa	Hamid	C					
Kulangara	Jacob	X	T	T	X	X	X
Liming	Jim	H	N	N	Resigned/Honorary		
Mohtashemi	Ed	X	T			T	T
Napper	Joe	C					
Nguyen	Khoi	X	T	T	T	X	X
Parello	Jim	X	N			N	Appointed
Pierce	Clint	X	T	T		X	X
Riccio	Ted	H					
Sellers	Craig	C		N	N		
Singh	Gurshan	X		T			
Steinman	Rebecca	X	T	T	T	X	X
Ward	Phil	X	T	T		X	x
West	Khadija	x	Appointed	T	T		T
Williams	Yvonne	X	T	T	T	X	T
Zee	Kiang	X	T	T			

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		1	0	3	7	9
TOTAL NON-VOTING ATTENDEES	O		0	0	0	0	0
TOTAL VOTING TELECON PARTICIPANTS	T		13	13	5	2	4
TOTAL NON-VOTING TELECON PARTICIPANTS	N		2	2	1	1	0
TOTAL ATTENDEES			16	15	9	10	13
TOTAL VOTING MEMBERS PARTICIPATING						9	13
TOTAL VOTING MEMBERS		15					
<u>Legend</u>							
X	Voting Attendees						
O	Non-Voting Attendees						
T	Voting Telecon Participants						
N	Non-Voting Telecon Participants						

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

Action Items List

Item No.	Subcommittee 3.0 Actions	Owner	Due Date	Closure Comments
17-2-B	Submit at least one topic to the SC-3 chair that you as a SC member would like to see presented as a 1-hr SC-3 training/technical session at a future mtg.	All Members	Ongoing	S18-2: Keep this item open and reminder all members to contribute ideas. S19-2: Kiang Zee suggested generating a list of training topics based on the Q&A of the 19-02 NPEC presentation on integrating IEEE 1819 into other NPEC standards. All members encouraged to submit technical presentation topics. Hold item open. S20-2: Action remains open. Rebecca suggests starting a discussion thread on iMeet Central to capture training topic suggestions. S21-1: Action remains open. Only suggested topic received to date transferred to WG 3.1 for action. Members are encouraged to submit ideas for future meeting technical presentation topics. S21-2: No updates. Action remains open. S22-1: No updates. Action remains open. S22-2: No updates. Action to be closed.
21-1-C	Schedule WebEx for WG chairs to learn how to update iMeet WG membership lists.	Steinman	22-1 mtg	S21-2: Rebecca targeting a phone call in the late fall 2021. S22-1: Rebecca to confirm all WG chairs have Admin rights. (Complete 1/20/22) WG chairs (Williams and Nguyen) to evaluate need for call and let Rebecca know. S22-2: No training needed. COMPLETE.
22-1-A	Develop and publish Call for Participants for IEEE 1819. Effort to be coordinated through Christian Orlando.	Steinman / Williams	23-1 Mtg	S22-2: Call for Participants will not be issued until after the PAR is approved.
22-1-B	Upload IEEE 692 / WG 3.2 files to iMeet.	Williams	22-2 Mtg	COMPLETE 2-2-2022.
22-1-C	Purchase eMeet Luna conference phones for SC3 from the Alligator Fund.	Crawford	22-2 Mtg	COMPLETE.
22-2-A	Purchase a long HDMI cable with adaptor for SC3 from the Alligator Fund	Crawford	23-1 Mtg	
22-2-B	Suggest that AdCom/NPEC should write a letter to Universities request support for standards development. Letter should include updated NPEC brochure.	Steinman	22-2 Mtg	
22-2-C	Attempt to find volunteers to support revision of IEEE 692. Investigate whether a corresponding IEC physical security standard exists.	Kulangara / Parello	23-1 Mtg	
22-2-D	Locate April 2022 NPEC letter to NRC in ADAMS and post to iMeet.	Steinman	23-1 Mtg	COMPLETE 9-6-2022.
22-2-E	Create a cross-reference table of each NPEC standard and the RG that endorses it. Add this table to the Standards Status Spreadsheet.	Williams / Steinman	23-1 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	0
Document 5 - 6 Years old	2
Document 7 - 8 years old	1
Document 9 or more years old	3
Total	8

PROJECT	Year	Standard Expiration	PAR Expiration	TITLE	Working Group	Chair	Vice Chair	Cycle Year	21-02	22-01	22-02	Status/Comments
336	2020	2030	N/A	IEEE Standard Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Facilities	1	Y. Williams		2				
338	2012	2022	Dec-2022	IEEE Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems	1	Y. Williams		10		Preview		SA Comment Resolution
352	2016	2026	N/A	IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Stations and Other Nuclear Facilities	3	K. Nguyen		6				
577	2022	2032	Dec-2022	IEEE Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Power Generating Stations	3	K. Nguyen		0				Standard Published
692	2013	2023	Dec-2022	IEEE Standard Criteria for Security Systems for Nuclear Power Generating Stations	2	Vacant		9				Will be moved to Inactive-Reserve since the WG is not active
933	2013	2023	Dec-2025	IEEE Guide for Definition of Reliability Program Plans for Nuclear Generating Stations and Other Nuclear Facilities	3	K. Nguyen		9				Draft Development
1205	2014	2024	Dec-2026	IEEE Guide for Assessing, Monitoring, and Mitigating Aging Effects on Class 1E Equipment used in Nuclear Power Generating Stations	4	R. Steinman	S. Channarasappa	8				Draft Development
1819	2016	2026	N/A	Standard for Risk-Informed Categorization and Treatment of Electrical Equipment in Nuclear Facilities	1	Y. Williams		6				

U.S. Nuclear Regulatory Commission (NRC) Liaison Report
IEEE NPEC, ESSB, ICC, & PSRC – July 2022

1. General

- a. The NRC released a response to an NRC Inspector General Report published April 2022 critical of an agency inspection at the Diablo Canyon nuclear power plant in California. - <https://www.nrc.gov/reading-rm/doc-collections/news/2022/22-019.pdf>
- c. The NRC awarded 25 grants to 20 academic institutions, including two minority-serving institutions, in 20 U.S. states, totaling more than \$9 million.

2. Operating Reactors

- a. Open Phase Condition (OPC) – On June 6, 2019, Nuclear Energy Institute (NEI) submitted Revision 3 to the voluntary industry initiative (VII) (ADAMS Accession No. ML19163A176), and subsequently submitted the accompanying guidance document, 19-02 “Guidance for Assessing Open Phase Condition Implementation Using Risk Insights,” (ADAMS Accession No. ML19172A086) on June 20, 2019. Revision 3 of VII includes an option for not enabling the Open Phase Isolation System (OPIS) automatic functions based on assessing the change in risk between operating with automatic functions versus reliance on operator manual action to isolate a power supply affected by an OPC. The staff revised Temporary Instruction (TI) 2515/194 to verify adequacy of licensees’ implementation of VII Rev. 3. The staff currently working on issuing the Bulletin 2012-01 closure letters to licensees who had the TI 2515/194 inspection completed. The NRC staff is making progress with closing out NRC Bulletin 2012-01 for the sites it inspected as bulletin closure letters have been issued for approximately 85 percent of the operating plants. The NRC had completed revising the Reactor Oversight Process Inspection Procedures and Inspection Manual Chapter to provide periodic oversight of licensee’s implementation of the voluntary industry initiative to address the open phase vulnerabilities. When all inspections are completed (bulletin closure letters issued for individual plants), the staff will prepare an overall report to close the bulletin or for any additional action for consideration of the Commission.
- 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.
- c. Subsequent License Renewal (North Anna, Point Beach, Oconee, and St. Lucie) reviews currently underway.
- d. Vendor Inspections - <https://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp/insp-reports/2022/index.html>
 - N/A

3. New Reactors

- a. NuScale Rulemaking is ongoing.
- b. The NRC is currently engaged in review activities of the Hermes construction permit application. 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>

4. Advanced Reactors

- a. The NRC is evaluating technical reports from multiple advanced reactor designs (i.e., pre-application stage).

5. Rulemaking

- a. The NRC staff is developing 10 CFR Part 53 rulemaking, which will establish a new framework for licensing and regulating advanced nuclear reactors. Public meetings with stakeholders are ongoing.

6. Research

- a. Below is the status of some of the RGs as well as additional updates:
 - Environmental Qualification: RG 1.89
 - To endorse IEC/IEEE Std. 60780-323-2016
 - Received public comments
 - Addressing public comments currently
 - Final Publication expected third quarter 2022
 - Environmental Qualification of Connection Assemblies: RG 1.156
 - To endorse IEEE Std. 572-2019
 - DG-1400 Issued for public comment April 2022
 - Public comments received and being addressed
 - Environmental Qualification of Safety-Related Battery Chargers, Inverters, and UPSs: RG 1.210
 - To endorse IEEE Std. 650-2017
 - Expected to be published for public comment (DG-1412) in Fall 2022
 - Onsite Emergency AC Power Sources: RG 1.9
 - Management decision to defer work on this RG
 - Assessing, Monitoring, and Mitigating Aging Effects: new RG
 - To endorse IEEE Std. 1205-2014
 - DG-1393 issued for public comment in Feb 2022
 - Received public comments and addressing them
 - Risk-Informed Categorization of Electrical and Electronic Equipment
 - To endorse IEEE Std. 1819-2016
 - Determining path forward of endorsing in a new RG or an existing RG 1.201 on categorization of SSCs
 - 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
 - To endorse IEEE Std. 450-2020
 - Expected to be out for public comment (DG-1401) in Summer 2022

- Criteria for the Protection of Class 1E Power Systems and Equipment: new RG
 - To endorse IEEE Std. 741-2022
 - Draft in development
 - Sizing lead-acid batteries: RG 1.212
 - To endorse IEEE Std. 485-2020
 - Draft in development
 - Installation Design & Installation of Vented Lead-Acid Batteries: RG 1.128
 - To endorse IEEE Std. 484-2019
 - Draft in development 1.156
 - Guidelines for Lightning Protection: RG 1.204/DG-1409 (Roy - RES)
 - To endorse various IEEE, UL, and NFPA standards
 - Draft in development
- c. In 2014, 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.
- On September 24, 2012, 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.
 - On December 10, 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. Below is an update on the project's major milestones:
 - On May 9th, 2022, Kinectrics begun the 150Mrads (plus 10% margin) Radiation Accident Dose at the Southwest Research Institute (SWRI). The Radiation Accident Dose is scheduled to be completed by June 17th, 2022.
 - Once the Radiation Accident Dose and Post-Radiation Accident Dose Functionality Tests are complete, The LOCA Test will commence on July 25th, 2022, and conclude on August 29th, 2022.
 - Immediately after the LOCA Test, the Post-LOCA Tests will begin on August 29th, 2022, and will last until September 2nd, 2022.
 - The final report will be issued by November 15, 2022.
- d. The NIST project was completed on September 15, 2021. The period of performance for the Kinectrics research project is from 12/10/2021 – 11/15/2021.
- e. The submerged cable tan delta test criteria research has been completed. The Research Information Letter should be published by summer 2022.

7. Part 21 Reports

a. The following Part 21 Reports were issued in the past 6 months (more information available on the NRC website under the Part 21 Reports webpage):

- i. 2022-01-00 - Report Under 10 CFR 21 of Noncompliances to Specification for N7030 Temperature Transmitter
- ii. 2022-02-00 - Engine Systems, Inc. Part 21 Reportable Notification on a Pressure Regulator Valve
- iii. 2021-23-00 – Flowserve Part 21 Notification for Limitorque Supplied DC Motor

8. Generic Communications

a. N/A

SC-3 Standards Schedule

STD	Standard		Age as of: 01/31/2022	Time left (yrs)
	Approved	Expires		
336	09/24/2020	09/24/2030	1.4	8.6
338	02/06/2012	02/06/2022	10.0	0.0
352	12/07/2016	12/07/2026	5.2	4.9
577	08/30/2012	08/30/2022	9.4	0.6
692	08/23/2013	08/23/2023	8.4	1.6
933	12/11/2013	12/11/2023	8.1	1.9
1205	03/27/2014	03/27/2024	7.8	2.2
1819	09/22/2016	09/22/2026	5.4	4.6

PAR	Status notes
Expires	
-	
12/2022	
-	PAR to RevCom 9/2022
12/2022	
12/2022	Allow to go inactive
12/2025	
12/2026	
-	PAR to RevCom 9/2022

Endorsing Reg Guide Information				
RG number	Rev	Date	Date of Std	Staff review
1.30	0	Aug-72	1971	2018 - revise
1.118	3	Apr-95	1987	2012 - no issues
1.218 cables, sorta	0	Apr-12	2000 w/Cor	
				evaluating how to cover

	WG 3.1	WG 3.2	WG 3.3	WG 3.4
2020-1	338	692	577	
2020-2	338	692	577	
2021-1	338		933	
2021-2	338		933	
2022-1	338		933	1205
2022-2	338		933	1205
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	

the schedule for WG3.3
has fallen behind
577 has stretched to 2022
933 working now
352 may not start until 2023-2 or 2024-1

work on 1819 may stretch to later - but ok
336 can have delayed start and end - but ok

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.

PARTICIPANTS HAVE A DUTY TO INFORM THE IEEE

- 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

OTHER GUIDELINES FOR IEEE WORKING GROUP MEETINGS

- **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

INSTRUCTIONS FOR CHAIRS OF STANDARDS DEVELOPMENT ACTIVITIES

At the beginning of each standards development meeting the chair or a designee is to:

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- Advise the standards development group participants that:
 - IEEE SA's copyright policy is described in Clause 7 of the IEEE SA Standards Board Bylaws and Clause 6.1 of the IEEE SA Standards Board Operations Manual;
 - 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;
- Instruct the Secretary to record in the minutes of the relevant meeting:
 - That the foregoing information was provided and that the copyright slides were shown (or provided beforehand).

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<https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7>
 - Clause 6.1 of the IEEE SA Standards Board Operations Manual
<https://standards.ieee.org/about/policies/opman/sect6.html>
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- IEEE SA Copyright FAQs
 - <http://standards.ieee.org/faqs/copyrights.html/>
- IEEE SA Best Practices for IEEE Standards Development
 - 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>