

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 18-1 Minutes



Tuesday Morning, 23 January, 2018
New Orleans, LA

Members Present:	George Ballassi	Ngola Otto
	John Beatty	Clint Pierce
	Suresh Channarasappa	Ted Riccio
	Tom Crawford (Vice Chair)	John Stevens
	John Erinc*	Kiang Zee
	Hamid Heidarisaifa* (C)	
Members Absent:	Gopal Aravapalli (C)	Joe Napper (C)
	Edward Eustace (C)	James Parello (C)
	Sharon Honecker (C)	Vish Patel (C)
	Steve Hutchins (C)	Craig Sellers (C)
	Jim Liming (C)	Rebecca Steinman
	Jacob Kulangara	John Taylor (C)
	Kirk Melson	Phil Ward
	Ed Muhtashemi	Yvonne Williams
Guests:	Shelley Reid	Malia Zaman

* Joined the meeting via the web-based Join Me interface.

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

Tom Crawford called the meeting to order at about 08:05 then reviewed the agenda. George Ballassi moved to approve the agenda, John Erinc seconded, and the agenda was approved. See Attachment 1 for the approved agenda.

2.0 Secretary's Report

- **SC-3 Approval of S17-2 Meeting Minutes**

Rebecca sent the draft meeting minutes to the membership via email prior to the meeting. Tom reviewed the minutes. John Stevens questioned the total membership number, suggesting it should be 17 members, rather than 16. Tom took the action to re-verify the numbers [ACTION ITEM 18-1-A]. John Stevens moved to approve the corrected minutes, on the condition that the membership total be verified and George seconded. The minutes were approved conditionally. Tom subsequently determined that the total membership should be "17", rather than "16" since Jim Liming did not drop to

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 18-1 Minutes

“Corresponding” status until after the meeting, and thus should have been counted in the total. This will be reflected in the final minutes.

- **Action Item Status**

The status of the action items was reviewed; the updated action item list is provided in Attachment 4.

- **SC-3 Membership**

Tom reviewed the membership, noting that there were 9 voting members physically in attendance, plus 1 on telecon; we have 16 members total at present; therefore, a quorum was met for conducting business at the meeting. Tom also welcomed Hamid Heidarisaifa, who is a Corresponding (non-voting) member participating by telecon. There were some questions regarding status of those not present; Tom will attempt to contact them and request status updates [ACTION ITEM 18-1-B]. Tom will also ask Malia to identify which are SA members [ACTION ITEM 18-1-D]. The Rolling Attendance report is contained in Attachment 2. The current membership roster will be distributed separately.

- **Alligator Fund**

The status of the alligator fund was reviewed and it was noted that the fund balance has not changed since the last meeting. We paid to mail the projector for this meeting (\$52.16), and that will be deducted as an expense of this meeting. We agreed, once again, that there would be no collection for this meeting. The Alligator Fund status is contained in Attachment 3.

3.0 Chair’s Report

- **Leadership Review / Membership**

The current officers are: Yvonne Williams, Chair; Tom Crawford, Vice Chair; and Rebecca Steinman, Secretary. Tom noted that Yvonne is ready to step down, and we need a new SC-3 Chair. John Erinc asked if a Chair has to be able to be present for the meeting or rather can attend by teleconference. George suggested that 50% minimum in-person attendance would probably be appropriate. Suresh suggested we establish guidelines for face-to-face participation. Tom reiterated that new people need to step into the leadership roles, and that each committee member needs to push hard to bring in at least one potential new member.

- **Leadership Telecons**

There were no Leadership telecons since the previous meeting.

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 18-1 Minutes

- **NPEC Preparations**

There are no preview or work-in-progress activities associated with SC-3 this meeting. The NPEC presentation for IEEE 1819 interactions with other NPEC standards is on the N18-1 Agenda, with George Ballassi presenting. George's presentation was reviewed later in this meeting. We are tracking this as an update of Action Item 17-1-A in Attachment 4.

- **Website**

Tom announced that Rebecca has the SC-3 website working. He asked members to visit the site and identify any incorrect/missing information, then report it to Rebecca for revision.

4.0 IEEE Patent Slides

Tom discussed the new 2018 IEEE Patent Slides, which are contained in Attachment 9. Malia noted that we should review them at the beginning of the WG meeting in the future.

5.0 Working Group Reports

- **WG-3.1**

The WG met Monday. John Beatty reported on the review of George's IEEE 1819 presentation. Reviews of the updates to IEEE 336 and IEEE 338 were planned for the afternoon session.

- **WG-3.2**

WG-3.2 is dormant at present. Yvonne contacted Randy Flowers about reconstituting the WG. Randy is planning to retire later this year and agreed to contact the other WG members to try and recruit a replacement. IEEE 692 expires in 2023.

- **WG-3.3**

The WG met Monday. John Stevens reported on the review of the IEEE 577 PAR. Further review of the IEEE 577 draft was planned for the afternoon session.

- **WG-3.4**

WG 3.4 is also dormant. IEEE 1205 was last issued in 2014. Rebecca continues as Chair. IEEE 1205 expires in 2024. The WG is to be reconstituted in 2020.

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 18-1 Minutes

6.0 Liaison Reports

Liaison reports were provided as follows:

- NRC – No update was available.
- ASME – No update was available.
- SCoRA – Kiang reported that he is following SCoRA actions, and that Jerry Kindred is the Chair.

7.0 Old Business

Tom reviewed the SC-3 Master Schedule and NPEC SC-3 Standards Schedule. Copies of the updated schedules are provided in Attachments 8 & 5, respectively.

8.0 New Business

Tom noted that the proposed changes to the SC-3 name and scope are included in the NPEC P&P Manual revision to be voted on during Wednesday's meeting.

John Stevens reviewed the IEEE 577 PAR with SC-3, showing the actual IEEE input screen. Malia recommended adding a statement generally outlining the scope of changes needed; John then made the suggested change. Ted moved to accept the PAR with the changes, Kiang seconded, and the motion passed unanimously. (Note: The PAR was subsequently added to the Agenda and approved by ADCOM.)

We reviewed George's IEEE 1819 presentation for Wednesday's NPEC meeting. John Beatty moved to approve it, George seconded, and the motion passed unanimously.

Ted reported on the Fellowship Meeting that he attended for SC-3 on Sunday afternoon. During that meeting, Ted presented a summary of SC-3 work to Avinash Singh, a South Africa Safety regulator who is interested in SC3 & SC5, and to Ashar Khalid, from Malasia who is interested in SC6.

9.0 Action Items

John reviewed the new action items from this meeting. The revised AI List is provided in Attachment 4.

Tom reported that the next NPEC meeting (18-2) is scheduled for July 22-25, 2018 at the Hilton in Mystic, CT. This is the same location we met during the N13-2 meeting. George recommended flying in to Providence, RI for the meeting. Hotel reservation information will be distributed soon.

IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 18-1 Minutes

George moved to adjourn, John Stevens seconded. The motion was unanimously accepted, and the meeting adjourned at 11:10 AM.

Prepared by Tom Crawford, SC-3 Vice Chair and John Beatty, SC-3 Acting Secretary.

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SC-3 Website information:

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

To access members only content on the SC-3 web page:

1. Click the members only link you are interested in.
2. Login using your IEEE user ID and password.
3. Then when prompted for a second password, enter [REDACTED]

NPEC Standards Website information:

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

Login Name: [REDACTED]

Password: [REDACTED]

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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 (None)	Attachment 8 SC-3 Standards Schedule	Attachment 9 IEEE Patent Slides
Attachment 10 IEEE 1819 Usage Presentation		



Agenda – Meeting 18-1 – New Orleans, LA

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

Meeting Date/Time:	Tuesday, 01/23/2018 0800-1200	Chairman :	Yvonne Williams
		Vice Chair:	Tom Crawford
		Secretary:	Rebecca Steinman

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 • Introductions 	T. Crawford All	0800-0810
Chairman's Introduction <ul style="list-style-type: none"> • Opening remarks • Review/approve agenda 	T. Crawford	0810-0820
Secretary's Report <ul style="list-style-type: none"> • Approval of SC3 17-2 Meeting Minutes • Action Item review/status • SC3 membership review • Alligator fund report 	T. Crawford	0820-0845
Chairman's Report <ul style="list-style-type: none"> • SC3 Leadership – Officers and succession planning • Leadership telecons – none held • NPEC meeting preparations – 1819 presentation planned by G. Ballassi • SC3 website updates – Rebecca Steinman is webmaster, WG information is out of date 	T. Crawford	0845-0900
NPEC report – agenda for Wednesday meeting	T. Crawford	0900-0905
Patent slides	T. Crawford	0905-0910
BREAK	All	0910-0930
Working Group Reports <ul style="list-style-type: none"> • WG-3.1 (Testing) – 336 expires in 2020, 338 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 	J. Beatty none J. Stevens none	0930-0940 0940-0950
Liaison Reports <ul style="list-style-type: none"> • NRC Report • ASME Report • SCoRA Report 	N. Otto C. Sellers K. Zee	0950-1005 1005-1015 1015-1025
Old Business <ul style="list-style-type: none"> • Master schedule for Std review/updates 	T. Crawford	1025-1035
New Business/Rumor Mill/Drumbeats <ul style="list-style-type: none"> • Review & Approve 1819 Presentation for NPEC • IEEE-577 PAR Review/Approval • Summary of "Fellowship Meeting" on Sunday 	T. Crawford/ G. Ballassi J. Stevens T. Riccio	1035-1105
Review of Action Items	J. Beatty	1105-1115
Next meeting	T. Crawford	1115-1120
Meeting closeout/adjournment	T. Crawford	1120

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

Last	First	2016-1	2016-2	2017-1	2017-2	2018-1
Aravapalli	Gopal					
Ballassi	George		X	X	X	X
Beatty	John	X	X			X
Channarasappa	Suresh	X	P - J. Erinc	X		X
Crawford	Tom	X	X	X	T	X
Erinc	John		X			T
Eustace	Edward			Correspond		
Heidarisaifa	Hamid					T (C)
Honecker	Sharon					
Hutchins	Steve	Correspond				
Kulangara	Jacob	X				
Liming	Jim	X	X	X	X	Correspond
Melson	Kirk	X				
Muhtashemi	Ed			X	X	
Napper	Joe					
Otto	Ngola		X		Appointed	X
Parello	Jim					
Pierce	Clint		X	Appointed		X
Ray	Sheila		Correspond			Resigned
Riccio	Ted	X	X	X		X
Steinman	Rebecca	X	T		X	
Stevens	John	X	X	X		X
Taylor	John					
Ward	Phil		X	Appointed	X	
Williams	Yvonne		X	X	X	
Zee	Kiang	X	X	X	X	X

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

TOTAL PAYING ATTENDEES	10	12	11	8	9
TOTAL NON-PAYING ATTENDEE	0	0	0	0	0
TOTAL TELECON PARTICIPANTS	0	1	0	1	1
TOTAL ATTENDEES	10	13	11	9	10

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
S05-1	\$312.14	\$207.18	\$359.82	\$159.50
S05-2	\$159.50	\$240.00	\$0.00	\$399.50
S06-1	\$399.50	\$220.00	\$178.67	\$440.83
S06-2	\$440.83	\$160.00	\$335.00	\$265.83
S07-1	\$265.83	\$200.00	\$201.70	\$264.13
S07-2	\$264.13	\$600.00	\$340.87	\$523.26
S08-1	\$523.26	\$300.00	\$347.80	\$475.46
S08-2	\$475.46	\$320.00	\$386.26	\$409.20
S09-1	\$409.20	\$180.00	\$12.00	\$577.20
S09-2	\$577.20	\$210.00	\$92.54	\$694.66
S10-1	\$694.66	\$220.00	\$380.90	\$533.76
S10-2	\$533.76	\$425.00	\$474.90	\$483.86
S11-1	\$483.86	\$200.00	\$14.00	\$669.86
S11-2	\$669.86	\$430.00	\$480.50	\$619.36
S12-1	\$619.36	\$340.00	\$203.00	\$756.36
S12-2	\$756.36	\$150.00	\$0.00	\$906.36
S13-1	\$906.36	\$0.00	\$0.00	\$906.36
S13-2	\$906.36	\$0.00	\$0.00	\$906.36
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

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
12-2-B	Develop a Template / Strawman for gap analysis for SC3 standards	Yvonne	13-2 mtg.	No follow-on as of S17-2 meeting. Jim Liming offered to help Yvonne. Consider dropping if no action by 18-1 mtg.
14-1-B	Present the conflict to SA for resolution relative to meeting notice distribution in section 6.0 of the IEEE SA Working Group Policies & Procedures manual template.	Malia	17-2 mtg.	Action pending. During the S16-1 meeting, Malia reported that SA is developing a new template, and we should wait and see if that resolves the issue. S17-2: Follow-up with Malia as to whether the revision addressed the concern.
15-2-A	Review the CD of files from WG-3.2 for unresolved comments and also contact Randy Flowers concerning WG-3.2 plans.	Yvonne	18-2 mtg.	Yvonne contacted Randy in Spring 2017; he will be retiring soon, but agreed to reach out to other WG members to try and recruit a replacement.
17-1-A	Presentation to NPEC on coordination/integration of risk-informed standard 1819 with the other NPEC standards	Yvonne / George	18-1 mtg.	Yvonne contacted ADCOM to recommend that SC-3 make a presentation to NPEC on the history, status, and future integration of P-1819 with other NPEC standards [Complete]. George Ballasi developed the presentation, and SC-3 reviewed and approved it for presentation at NPEC 18-1 meeting on 24 Jan 2018.
17-2-A	Investigate IEEE service/resource for storing important SC-3 and WG documents.	Rebecca	18-1 mtg.	Rebecca has been working with SC-5 to help them with their web site. SC-5 uses the IEEE Join Me service for all of the subcommittee and working group meetings because most members cannot travel regularly. IEEE offers a complementary service called IMeet Central (replaces Central Desktop) for online collaboration and file storage. SC-5 found IMeet Central cumbersome for collaboration, but said they used it as an archive location for files since Malia could access information in the future if needed. See page 3 of 8 of the SA Toolkit for additional information.
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	11/30/17	
18-1-A	Double check S16-2 membership numbers and update Minutes as appropriate.	Tom	18-2 mtg.	Tom confirmed that the Minutes should show 17 members, as of the time of the S17-2 meeting. The total dropped to 16 again after the meeting, when Jim Liming changed to "Corresponding" status.
18-1-B	Send an email to Corresponding members requesting that each update his/her status.	Tom	18-2 mtg.	
18-1-C	Contact Joe Napper regarding his status.	Hamid	18-2 mtg.	
18-1-D	Request Malia to identify which of our members are SA members.	Tom	18-2 mtg.	

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

Chair: Yvonne Williams

PROJECT	Year	Standard Expiration	Re-Affirmation	PAR Expiration	TITLE	Sub-Committee	Regulatory Guide	IEEE Revision Section B Discussion	IEEE Revision Section C Guidance	Working Group	Chair	Cycle Year	N17-1	N17-2	N18-1	N18-2	Status/Comments
336	2010	2020		Dec-2020	IEEE Standard Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Facilities	3	1.30 - 1972	1971	1971	1	Y. Williams	7					Published on 30 Sept 2010 PAR approved by ADCOM at 16-02 and submitted to RevCom. PAR approved by SB 9/22/16
338	2012	2022			IEEE Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems	3	1.118 - 1995	1987	1987	1	Y. Williams	5					Std approved by SB Feb. 6, 2012 Published on 23 March 2012
352	2016	2026			IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Stations and Other Nuclear Facilities	3				3	J. Stevens	1					Resolving initial ballot comments. May need PAR extension by October 17, 2016 Standard revision approved by SB Dec. 7, 2016 Have not received edit proofs yet. Standard revision approved by SB Sept, 2016
577	2012	2022			IEEE Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Power Generating Stations	3				3	J. Stevens	5					Approved by SASB Aug. 30, 2012 Published on Oct. 19, 2012
692	2013	2023			IEEE Standard Criteria for Security Systems for Nuclear Power Generating Stations	3				2	R. Flowers	4					Issued by Sd bd Aug. 2013. Published on 30 Sept 2013
933	2013	2023			IEEE Guide for Definition of Reliability Program Plans for Nuclear Generating Stations and Other Nuclear Facilities	3				3	J. Stevens	4					Approved by SA BD on Dec. 11, 2013 Published 10 Jan 2014
1205	2014	2024			IEEE Guide for Assessing, Monitoring, and Mitigating Aging Effects on Class 1E Equipment used in Nuclear Power Generating Stations	3	1.218 - 2012	2000	None	4	R. Steinman	3					Approved by SB March 27, 2014 Published 16 May 2014
1819	2016	2026			Standard for Risk-Informed Categorization and Treatment of Electrical Equipment in Nuclear Facilities	3				1	Y. Williams	1					PAR approved by SB 3/29/2012 Approved for ballot at NPEC 15-1. Submitted for Revcom and on Sept. 2016 agenda Standard revision approved by SB Sept, 2016 Received 1st edit proofs 1/31/17

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

	WG 3.1	WG 3.2	WG 3.3	WG 3.4
2014-1	1819		352	1205
2014-2	1819		352	
2015-1	1819		352	
2015-2	1819		352	
2016-1	1819		352	
2016-2	1819		352	
2017-1	336		352	
2017-2	336			
2018-1	336		577	
2018-2	336		577	
2019-1	336		577	
2019-2	338		577	
2020-1	338	692	577	
2020-2	338	692	577	
2021-1	338	692	933	1205
2021-2	338	692	933	1205
2022-1	338	692	933	1205
2022-2	338	692	933	1205
2023-1	1819	692	933	1205
2023-2	1819		352	
2024-1	1819		352	
2024-2	1819		352	
2025-1	1819		352	
2025-2	1819		352	
2026-1	1819		352	
2026-2				

STD	Issued	Expires	Age as of: 01/22/2018	Time left (yrs)
336	09/30/2010	09/30/2020	7.3	2.7
338	03/23/2012	03/23/2022	5.8	4.2
352	12/07/2016	12/07/2026	1.1	8.9
577	10/19/2012	10/19/2022	5.3	4.7
692	09/30/2013	09/30/2023	4.3	5.7
933	01/10/2014	01/10/2024	4.0	6.0
1205	05/16/2014	05/16/2024	3.7	6.3
1819	09/22/2016	09/22/2026	1.3	8.7

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 WG 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 ... do formally object.

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 Std 1819-2016 - IEEE Standard for Risk-Informed Categorization and Treatment of Electrical and Electronic Equipment at Nuclear Power Generating Stations and Other Nuclear Facilities

HISTORY AND APPLICATION TO NPEC STANDARDS

History

- ▶ In 1995 the NRC issued a policy statement that encouraged the use of PRA in all regulatory matters. Subsequently, the NRC issued Reg Guide 1.174 that describes a “risk-informed integrated decision-making process”. In 2004, the NRC issued 10 CFR 50.69, a voluntary rule that allows SSC categorization using PRA and other insights and exempts low risk SSCs from a host of special treatment regulations.
- ▶ The Risk Informed (RI) approach has been generally accepted and formalized as a process worthy of industry development and implementation. It allows users to focus resources on risk significant equipment (regardless of their safety classification), thereby increasing nuclear safety.
- ▶ In February 2006, NPEC tasked SC-3 to develop a recommendation to incorporate risk-informed (RI) approach to NPEC standards.

History

- ▶ SC-3 authored a white paper (2006-2007) to explore options to accomplish the NPEC tasking. They are:
 - ▶ (1) replace existing standards that stipulate deterministic criteria and requirements for IEEE Class 1E equipment with one risk-informed standard that stipulates equipment criteria based on safety significance determination
 - ▶ (2) add sections or addenda to existing standards that stipulate deterministic criteria and requirements for IEEE Class 1E equipment that do not supersede deterministic requirements, but offer an alternative acceptable risk-informed approach
 - ▶ (3) develop one new standard that does not specifically supersede existing deterministic criteria and requirements for IEEE Class 1E equipment, but offers an acceptable risk-informed approach that **can be used in conjunction with existing deterministic standards.**

History

- ▶ SC-3 recommended, and NPEC approved option 3, a new guidance standard, as the most viable and practical choice.
- ▶ It best enables IEEE to focus and control the new standard development to be consistent with and complementary to similar risk-informed standards and industry activities currently planned and/or being pursued by other industry groups (e.g., ASME, ANS, NEI, EPRI, reactor vendor owners' groups, etc.),

Why Employ RI?

- ▶ The existence of risk is a common, everyday reality that we literally grow up with and as such becomes a built-in measurement tailored on an individual basis.
- ▶ Winter driving, climbing ladders, jumping in the deep end are all activities where the individual “measures” the risk before proceeding. However, the measurement is a qualitative measure, without the benefit of numbers and hard data.
- ▶ Qualitative measurement can actually lead to an unfounded decision as the emotions (fear, bravado) cloud the conclusion.
- ▶ Formalizing risk using empirical data and sound analysis can reveal options and weaknesses heretofore hidden.

Why Employ RI?

- ▶ RI enhances plant safety by providing additional means of analyzing challenges to operation of the plant. Uncovering operational challenges to the plant systems can reduce plant threats, increase plant availability, and focus resources on safety significant items.
- ▶ RI by itself **does not** eliminate/replace existing deterministic methods. It is one of the inputs to an integrated decision-making process. **That is why the process is referred to as “risk-informed” rather than “risk-based”.**

Potential Benefits

- ▶ Avoidance of replacement power costs associated with forced outages
- ▶ Costs savings associated with avoiding potential technical specification notifications
- ▶ Surveillance testing labor and material cost savings (IEEE STD-338)
 - ▶ Reduced risk of surveillance induced trips
 - ▶ Reduced Wear and Tear on Equipment

Potential Benefits



- ▶ Reduced burden on low safety significant equipment and increased focus on high safety significant equipment
- ▶ Cost savings associated with low safety significant equipment being exempted from many regulatory requirements
- ▶ More flexibility in dealing with the issue of equipment obsolescence
- ▶ For U.S. plants, support various efficiency bulletins required under Delivering the Nuclear Promise

What Does 1819 Do?



- ▶ IEEE 1819 provides the guidance to categorize equipment based on its safety significance and can support other standards that could include a RI approach.
- ▶ IEEE 1819 supports implementation of 10 CFR 50.69.
- ▶ IEEE 1819 can be applied to standards that govern particular components and those that are concerned with system level topics.

How Does 1819 Affect NPEC Standards?

- ▶ Option 3: Develop one new standard that does not specifically supersede existing deterministic criteria and requirements for IEEE Class 1E equipment, but offers an acceptable risk-informed approach that can be used in conjunction with existing deterministic standards.
- ▶ How can we do this? SC-3 recommends that IEEE 1819 be included for consideration as a reference with the following statement in the body of the standard: **"Those facilities implementing a risk-informed approach should refer to IEEE 1819 in the application of this document."**

THANK YOU

▶ QUESTIONS??????

