IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 17-1 Minutes

Tuesday Morning, February 07, 2017
New Orleans, LA

Members Present:	George Ballassi	Ted Riccio
	Suresh Channarasappa	John Stevens
	Tom Crawford (Vice Chair)	Phil Ward
	Jim Liming	Yvonne Williams (Chair)
	Ed Mohtashemi	Kiang Zee
	Clint Pierce	
Members Absent:	Gopal Aravapalli (C)	Jacob Kulangara
	John Beatty	Kirk Melson
	John Erinc	Joe Napper (C)
	Edward Eustace (C)	James Parello (C)
	Hamid Heidarisafa (C)	Rebecca Steinman
	Sharon Honecker (C)	John Taylor (C)
	Steve Hutchins (C)	
Guests:	Malia Zaman (IEEE)	

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

  Yvonne Williams called the meeting to order at about 08:00 then reviewed the agenda. George moved to approve the agenda, John Stevens seconded, and the agenda was approved.

2.0 Secretary's Report

- **SC-3 Approval of S16-2 Meeting Minutes**

  Tom Crawford sent the draft meeting minutes to the membership via email prior to the meeting and received several editorial corrections. He reviewed the revised meeting notes for the S16-2 meeting in Denver. John Stevens moved to approve the corrected minutes and Jim Liming seconded. The minutes were approved as amended.

- **Action Item Status**

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

- **SC-3 Membership**

  Tom noted that there were 11 members in attendance; we have 16 members total at present; therefore, quorum was met for conducting business at the meeting. Marie Cuvellier has been dropped at her request. Edward Eustace has changed to Corresponding status. Phil Ward and Clint Pierce were appointed as new members. Phil contacted Vish Patel, who also requested to be dropped. The Rolling Attendance report is contained in Attachment 2. The current membership roster will be distributed separately. It was also announced that Clint has agreed to be the secretary for WG 3.3 and Phil secretary for WG 3.1.

- **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 purchased a spare bulb for the projector ($65.19), 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. It was noted 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.

- **NPEC Preparations**

  There are no preview or work-in-progress activities associated with SC-3 this meeting. Yvonne noted that Previews have not been handled properly in recent times – NPEC members need at least a 30 day review window prior to voting on a document, and she will raise this issue to ADCOM.

4.0 IEEE Patent Slides

Yvonne discussed the IEEE Patent Slides, which are contained in Attachment 9.

5.0 Working Group Reports

- **WG-3.1**

  The WG met Monday. Yvonne reviewed the Editor's comments on P1819 and will resolve them with help from members as needed.

- **WG-3.2**

  WG-3.2 is dormant at present. Yvonne will contact Randy Flowers about reconstituting the WG. IEEE 692 expires in 2023.

- **WG-3.3**

  The WG met Monday and John is reviewing the Editor's comments on IEEE 352.

- **WG-3.4**

  WG 3.4 is also dormant. IEEE 1205 was last issued in 2014. Rebecca continues as Chair.

6.0 Liaison Reports

Liaison reports were provided as follows:

- NRC – No report. Tom will attempt to obtain the NPEC report for the Minutes. [Tom subsequently received no reply to his request for the NPEC report.]
- ASME – The current report was submitted by Craig Sellers and is contained in Attachment 6.
- NRMCC – Jim Liming reported that NRMCC has been disbanded, as discussed during the 16-2 Meeting. Kiang verified this with Barry Sloane. The NRMCC activities will be absorbed back into the ASME/ANS Joint Committee on Nuclear Risk Management (JCNRM). Jim will contact Rick Grantom about future activities.

7.0 Old Business

Tom reviewed the draft revision of the SC-3 OPM. Changes had been made to address the latest NPEC WG P&P. It was noted that SC-3 previously made a deliberate decision to adopt the NPEC WG P&P wording into the SC-3 OPM to prevent each WG from having to develop its own P&Ps. After a brief discussion, Jim moved to approve the revision and George seconded; the motion passed. Tom will provide a clean copy of the revised OPM to Yvonne for signature.

Yvonne 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

Ted raised the issue of how to address 1819 in other standards, once issued. He presented the spreadsheet in Attachment 10, recommending means of addressing which other standards should reference 1819 in response to ***ACTION 16-2-A*** from the last meeting. His spreadsheet shows the applicable History, Status, Integration, and Future Changes recommended for each standard. Yvonne will talk to ADCOM about making a presentation to NPEC, with the N17-2 meeting suggested. George volunteered to lead the presentation. ***(ACTION 17-1-A)*** [ADCOM subsequently agreed to place the presentation on the N17-2 Agenda.] After some discussion, the group recommended the following statement for inclusion in the Overview or another up-front clause in each of the affected standards:

> *"Those facilities implementing a risk-informed approach should refer to IEEE Std 1819 in the application of this document."*

9.0 Action Items

Yvonne & Tom reviewed the action items. The revised AI List is provided in Attachment 4.

A motion for adjournment was made by George, seconded by Ted, and passed by acclamation.

Prepared by Tom Crawford, SC-3 Vice Chair.

SC-3 Website information:

http://grouper.ieee.org/groups/npec/private/sc3/sc-3.html
Login Name: [redacted] Password: [redacted]

NPEC Standards Website information:

http://sites.ieee.org/pes-npec/
Login Name: [redacted] Password: [redacted]

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
Attachment 7 NRC Liaison Report (None)	Attachment 8 SC-3 Standards Schedule	Attachment 9 IEEE Patent Slides
Attachment 10 Ted's Spreadsheet for 1819 Follow-Up		

Attachment 1

Agenda – Meeting 17-1 – New Orleans, LA

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

Meeting Date/Time:	Tuesday, 02/07/2017 0800-1200	**Chairman :** **Vice Chair:** **Secretary:**	Yvonne Williams Tom Crawford Rebecca Steinman

Desired Outcomes:	1. Review status/activities of each SC Working Group 2. Review status of membership and officers succession 3. Update SC3 standards master schedule

WHAT	WHO	WHEN
Welcome, Review Desired Outcomes • Meeting logistics • Introductions	Y. Williams All	0800-0810
Chairman's Introduction • Opening remarks • Review/approve agenda	Y. Williams	0810-0820
Secretary's Report • Approval of SC3 16-2 Meeting Minutes • Action Item review/status • SC3 membership review • Alligator fund report	T. Crawford / R. Steinman	0820-0845
Chairman's Report • SC3 Leadership – Officers and succession planning • Leadership telecons – none held • NPEC meeting preparations – no presentations by SC-3 or its WGs	Y. Williams	0845-0900
NPEC report, agenda for Wednesday meeting	T. Crawford	0900-0905
Patent slides	Y. Williams	0905-0910
BREAK	All	0910-0930
Working Group Reports • WG-3.1 (Testing) • WG-3.2 (Security) – will need to re-form shortly, std expires in 2023 • WG-3.3 (Reliability) • WG-3.4 (Aging)	Y. Williams none J. Stevens none	0930-0940 0940-0950
Liaison Reports • NRC Report • ASME Report • NRMCC Report	S. Ray T. Riccio / C. Sellers G. Ballassi/ J.Liming	0950-1005 1005-1015 1015-1025
Old Business • SC-3 O&Ps • Master schedule for Std review/updates	T. Crawford Y. Williams	1025-1035 1035-1045
New Business • 1819 approach with other standards • Standards development	All Jim Liming	1045-1050
Review of Action Items	T. Crawford	1050-1055
Next meeting hopefully more details at NPEC, but in Buffalo NY	Y. Williams	
Meeting closeout/adjournment		1105

Attachment 2

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

Attendance

Last	First	2015-1	2015-2	2016-1	2016-2	2017-1
Aravapalli	Gopal					
Ballassi	**George**		X		X	X
Beatty	**John**	X	X	X	X	
Channarasappa	**Suresh**	X		X	P - J. Erinc	X
Crawford	**Tom**	X	X	X	X	X
Cuvelier	Marie		Correspond			Dropped
Erinc	**John**	X			X	
Eustace	Edward					Correspond
Heidarisafa	Hamid					
Honecker	Sharon					
Hutchins	Steve			Correspond		
Kulangara	**Jacob**		X	X		
Liming	**Jim**	X	X	X	X	X
Melson	**Kirk**	X	X	X		
Muhtashemi	**Ed**		X			X
Napper	Joe		Correspond			
Otto	Ngola				X	
Parello	Jim					
Patel	Vish		X		Correspond	Dropped
Pierce	**Clint**				X	Appointed
Ray	Sheila	X			Correspond	
Riccio	**Ted**		X	X	X	X
Steinman	**Rebecca**			X	T	
Stevens	**John**	X		X	X	X
Taylor	John					
Ward	**Phil**				X	Appointed
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	9	11	10	12	11
TOTAL NON-PAYING ATTENDEES	0	0	0	0	0
TOTAL TELECON PARTICIPANTS				1	0
TOTAL ATTENDEES	9	11	10	13	11

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
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

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
11-2-C	SC-3 name in NPEC needs to reflect reliability	Yvonne	Next AdCom mtg.	Bring up at AdCom meeting 11-2. 12-1 mtg: more complicated - Jim to bring up at 12-1 AdCom meeting to make sure what is required and then get those actions started. 13-1 mtg: Will affect NPEC P&P and O&P. Malia confirmed that it could be handled as an editorial change. It just will take time to process. Jim to bring up to ADCOM. Preferred name is: "Operations, Maintenance, Aging, Testing, and Reliability". Request Submitted 01/22/13; see S13-1 Meeting Notes, Attachment 5. No NPEC action, as of the close of the N14-1 Meeting. S15-2 Meeting -- Yvonne will bring up at ADCOM again; in the mean time, our documents will reflect the proposed name. George will check ADCOM meeting minutes to determine whether the name change request was ever followed-up on. We may need to write a letter to NPEC.
12-2-B	Develop a Template / Strawman for gap analysis for SC3 standards	Yvonne	13-2 mtg.	No follow-on as of S14-1 meeting. S15-2 Meeting -- Yvonne will look at this specifically considering 336 & 338.
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. No update as of S15-2 meeting. 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. No update as of S17-1 meeting.
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	16-1 mtg.	Action pending; no action as of 17-1 mtg.
15-2-C	Prepare initial Draft of SC-3 P&P's to align with the NPEC WG P&P's	Tom	17-1 mtg.	Preliminary draft presented at the S16-2 meeting; Tom will distribute for SC-3 review, then vote during the S17-1 meeting. Draft APPROVED during S17-1 meeting; Action CLOSED.
16-2-A	Survey NPEC Stds for potential applicability of 1819.	Ted	17-1 mtg.	Ted reviewed the NPEC stds and prepared a spreadsheet, which he presented during the S17-1 meeting. Discussed during S17-1 meeting; follow-up Action Item is 17-1-A. This item is CLOSED.
17-1-A	Presentation to NPEC on coordination/integration of risk-informed standard 1819 with the other NPEC standards	Yvonne / George	17-2 mtg.	Yvonne to cotact 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 - Scheduled for N17-2 meeting]. George to develop the presentation and present to NPEC [Scheduled for N17-2 meeting].

Attachment 5

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	N16-1	N16-2	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	2020			IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Stations and Other Nuclear Facilities	3				3	J. Stevens	1	Preview						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.
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 PAR 692A was issued in 2011 to ammend the standard. Were these corrections included in the 2013 issuance? If so the PAR needs to be withdrawn. I'm not seeing that any PAR on 692 is still active, so not sure what needs doing. Initial thought was to amend, but it was evaluated to need revision instead. Based on what Dave Horvath said for its history back then, so yes, I would say the revision subsumed the amendment issues
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

Attachment 6

ASME Liaison Report to IEEE
OM Subcommittee Risk-Informed Activities

The subcommittee addressed most of the comments received on latest ballot for Subsection ISTE, Rev. 3d.

ISTE establishes requirements for risk-informed inservice testing. It includes requirements for component classification into High Safety Significant Components (HSSCs) and Low Safety Significant Components (LSSCs), requirements for inservice testing treatments, and component performance monitoring.

Comments were primarily on definitions, evaluation of aggregate effects, and regulatory guidance which will be placed into a non-mandatory appendix currently being developed.

Comment resolution and development of a non-mandatory appendix addressing RG 1.174 is continuing.

We plan for second consideration ballot on Subsection ISTE, Rev. 3 and global review and comment on nonmandatory appendix addressing RG 1.175 prior to Summer 2017 Standards Committee meeting.

Attachment 8

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		577	
2017-2	336		577	
2018-1	336		577	
2018-2	336		577	
2019-1	336		577	
2019-2	338		933	
2020-1	338	692	933	
2020-2	338	692	933	
2021-1	338	692	933	1205
2021-2	338	692	933	1205
2022-1	338	692		1205
2022-2	338	692		1205
2023-1	1819	692		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: 07/13/2016	Time left (yrs)
336	9/30/2010	9/30/2020	5.8	4.2
338	3/23/2012	3/23/2022	4.3	5.7
352	Working			10.0
577	10/19/2012	10/19/2022	3.7	6.3
692	9/30/2013	9/30/2023	2.8	7.2
933	1/10/2014	1/10/2024	2.5	7.5
1205	5/16/2014	5/16/2024	2.2	7.8
1819	Working			10.0

Balloting and Approval Includes:

1 Preview, ballot pool, ballot, receive comments

2 Resolve comments, recirc

3 Submit to/ revcom approval/publish

Attachment 9

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:**
  - The 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 the IEEE is not aware. Additionally, neither the 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 12 and 12a 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.

(Optional to be shown)

Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- **Participants [Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2]:**
  - **"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**
    - **"Personal awareness" means that the participant "is personally aware that the holder may have a potential Essential Patent Claim," even if the participant is not personally aware of the specific patents or patent claims**
  - **"Should inform the IEEE (or cause the IEEE to be informed)" of the identity of "any other holders of such potential Essential Patent Claims" (that is, third parties that are not affiliated with the participant, with the participant's employer, or with anyone else that the participant is from or otherwise represents)**
- **The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group**
- **Early identification of holders of potential Essential Patent Claims is strongly encouraged**
- **No duty to perform a patent search**

Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.

Patent Policy is stated in these sources:

IEEE-SA Standards Boards 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 or visit http://standards.ieee.org/about/sasb/patcom/index.html

This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt

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:
  - Either speak up now 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
  - Cause an LOA to be submitted

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, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
      - Technical considerations remain 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.**

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

Attachment 10

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

IEEE 1819 Follow-Up -- Integration with Other NPEC Standards

Document	Number	SC	Affected	Reason	How
IEEE Standard for Class 1E Power Systems for Nuclear Power Generating Stations	308	4	Yes	This is a design document. However, it discusses a probabalistic assesment in Clause 4.10. This could be amplified by recommending the use of 1819 to help make that assesment.	Somewhere in the Overview or in Clause 4.10, it should be noted that 1819 may be applied.
IEEE Standard for Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations	317	4	Yes	Certain EESCs within the scope of this standard may be considered RISC-2 or RISC-3	Somewhere in the Overview, it should be noted that 1819 may be able to be applied.
IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations	323	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the standard, it should be noted that 1819 may be applied.
IEEE Standard for Type Testing of Continuous Duty Class 1E Motors for Nuclear Power Generating Stations	334	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Recommended Practice for Installation, Inspection, and Testing for Class 1E Power, Instrumentation, and Control Equipment at Nuclear Facilities	336	3	Yes	Although a Recommended Practice, standards such as IEEE690 require its use. (This was a standard before)	
IEEE Standard for Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems	338	3	No	No EESCs and has risk biult-in informed criteria for testing	
IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations	344	2	Yes	Recommended Practice. However, certain requirements within the scope of this standard may be considered RISC-2 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
Guide for General Principles of Reliability Analysis for Nuclear Power Generating Stations and Other Nuclear Facilities	352	3	No	Guide for activity with no EESCs	
IEEE Standard Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems	379	6	No	Standard for activity with no EESCs	

Attachment 10

Document	Number	SC	Affected	Reason	How
IEEE Standard for Qualification of Safety-Related Actuators for Nuclear Power Generating Stations	382	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Standard for Qualifying Electric Calbles and Splices for Nuclear Facilities	383	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits	384	6	No	This is a design document.	
IEEE STANDARD CRITERIA FOR DIESEL-GENERATOR UNITS APPLIED AS STANDBY POWER SUPPLIES FOR NUCLEAR POWER GENERATING STATIONS	387	4	Yes	Certain EESCs within the scope of this standard may be considered RISC-2 or RISC-3	Somewhere in the Overview, it should be noted that 1819 may be able to be applied.
IEEE Standard for the Design and Qualification of Class 1E Control Boards, Panels, and Racks Used in Nuclear Power Generating Station	420	6	Yes	If the subject equipment does not support any RISC-1 components, 1819 may be used to provide alternate treatments.	
IEEE Standard Criteria for Accident Monitoring Instrumentation for Nuclear Power Generating Stations	497	6	Yes	Certain EESCs within the scope of this standard may be considered RISC-2 or RISC-3	
IEEE Standard for Qualification of Class 1E Connection Assemblies for Nuclear Power Generating Stations	572	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Powe Generating Stations	577	3	Yes	Can be used to help with establishing alternate treatments	Include in scope
IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations	603	6	Yes	This standard is normally used for initial design. It is assumed that the proper risk assessments are made prior to implementation. However, the standard may address 1819 in determing the scope of appicability.	
IEEE Recommended Practice for the Design and Installation of Electric Heat Tracing Systems for Nuclear Power Generating Systems	622	6	Yes	Recommended Practice. Certain requirements within the scope of this standard may be considered RISC-2 application	Somewhere in the Recommended Practice, it should be noted that 1819 may be applied.

Attachment 10

Document	Number	SC	Affected	Reason	How
Standard for Qualification of Equipment Used in Nuclear Facilities	627	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Standard Criteria for the Design, Installation, and Qualification of Raceway Systems for Class 1E Circuits for Nuclear Power Generating Stations	628	4	No	This is a design document.	
IEEE Standard for Qualifying Class 1E Motor Control Centers for Nuclear Power Generating Stations	649	2	Yes	Static Battery Charges and Inverters would be expected to have one or more RISC-1 EESCs. However, certain requirements within the scope of this standard may be considered RISC-2 application.	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Standard for Qualification of Class 1E Static Battery Charges and Inverters for Nuclear Power Generating Stations	650	2	Yes	Static Battery Charges and Inverters would be expected to have one or more RISC-1 EESCs. However, certain requirements within the scope of this standard may be considered RISC-2 application.	Somewhere in the Overview, it should be noted that 1819 may be applied.
DESIGN AND INSTALLATION OF CABLE SYSTEMS FOR CLASS 1E CIRCUITS	690	4	No	This standard refers to other standards for actual requirements.	
IEEE Standard for Criteria for Security Systems for Nuclear Power Generating Stations	692	3	No	Security systems not considered to be part of reactor protection.	
IEEE RECOMMENDED PRACTICE FOR THE PROTECTION OF ELECTRIC EQUIPMENT IN NUCLEAR POWER GENERATING STATIONS FROM WATER HAZARDS	833	4	Yes	Recommended Practice that applies to 1E and non-1E EESCs. Certain requirements within the scope of this standard may be considered RISC-2 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Guide for the Evaluation of Human-System Performance in Nuclear Power Generating Stations	845	5	No	Guide for activity with no EESCs	
IEEE Guide for the Definition of Reliability Program Plans for Nuclear Generating Stations and Other Nuclear Facilities	933	3	No	Guide for activity with no EESCs	
IEEE Recommended Practice for the Application of Human Factors Engineering to Systems, Equipment, and Facilities of Nuclear Power Generating Stations and Other Nuclear Facilities	1023	5	No	Recommended practice activity with no EESCs	
IEEE Guide for Incorporating Human Action Reliability Analysis for Nuclear Power Generating Stations	1082	5	Yes	Discusses use of Human Reliability Analysis in development of PRA. 1819 discusses use of PRA in 5.2.2	1819 should reference this Guide and this Guide should list 1819 as a reference document

Attachment 10

Document	Number	SC	Affected	Reason	How
IEEE Guide for Assessing, Monitoring, and Mitigating Aging Effects on Class 1E Equipment used in Nuclear Power Generating Stations	1205	3	No	Guide for activity with no EESCs	
IEEE Guide for the Application of Human Factors Engineering in the Design of Computer-Based Monitoring and Control Displays for Nuclear Power Generating Stations	1289	5	No	Design Guide for activity with no EESCs	
Draft Guide for Motor-Operated Valve (MOV) Motor Application, Protection, Control, and Testing in Nuclear Power-Generating Stations	1290	4	Yes	Certain EESCs within the scope of this guide may be considered RISC-2	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Draft Trial-Use Standard for Qualifying Fiber Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems of Nuclear Power Generating Plants	1682	2	Yes	Certain requirements within the scope of this standard may be considered RISC-2 or RISC-3 application	Somewhere in the Overview, it should be noted that 1819 may be applied.
IEEE Recommended Practice for the Investigation of Events at Nuclear Facilities	1707	5	No	Recommended practice activity with no EESCs	
IEEE Guide for Human Factors Applications of Computerized Operating Procedure Systems (COPS) at Nuclear Power Generating Stations and Other Nuclear Facilities	1786	5	No	Guide for activity with no EESCs	
IEEE Standard Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations	7-4.3.	6	Yes	Section 5.3.6 (Software project risk management) may be supported by 1819 categization and treatment. 5.5.4 (Prioritization of functions) should address 1819 RISC priorities.	
IEEE Standard Criteria for the Protection of Class 1E Power Systems and Equipment in Nuclear Power Generating Stations	741/742	4	No	This is a design document.	
IEEE Standard for Preferred Power Supply (PPS) for Nuclear Power Generating Stations (NPGS)	765/1792	4	No	This is a design document.	
Standard for Seismic Qualification Testing of Protective Relays and Auxiliaries for Nuclear Facilities	C37.98	2			
Intelligent Digital Devices for use Nuclear Power Generating Stations	PAR 1891	6			