IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Reliability & Testing
Meeting 10-1 Minutes

Tuesday, January 19, 2010
Clearwater Beach, FL

Members Present:	Gopal Aravapalli	Jim Liming
	George Ballassi	Joe Napper
	John Beatty	Jim Parello
	Hamid Heidarisafa	Ted Riccio
	Sharon Honecker	Mansoor Sanwarwalla (Vice Chair)
	Dave Horvath	Glen Schinzel (Chair)
	Peter Kang	Yvonne Williams (Secretary)
	Jacob Kulangara	
Members Absent	Tom Crawford	Barry Sloane
	Ali Daneshpooy	John Stevens
	Rachel Gunnett	John Taylor (corresponding)
	Owen Scott	Kiang Zee
	Craig Sellers	

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

The meeting was called to order at 8:07 am by Glen Schinzel, Chair. After a quick review of safety considerations and exit doors, the attendee list was passed around for validation and the attendees introduced themselves. Several guests were present:

Kevin Lynn (for R Gunnett) from Advent
Richard Rusaw from EPRI
Robert Lane from ATC Nuclear
Suresh Channarasappa from Westinghouse
Kirk Melson from Excel Services
Singh Matharu from NRC
Thomas Koshy from NRC

Glen identified that the agenda is very full, with a long morning ahead of us. Some of the desired outcomes are to (1) give the status and activities of the working groups, with the actions needed and being taken (2) update the standard master schedule (3) examine membership requirements, especially categorization and balance.

The agenda was reviewed (attached). PAR for 1819 has not yet been approved, but a work in progress report will be provided to us today and to NPEC Wednesday. Whether it was appropriate for a work-in-progress presentation was discussed with NPEC and decided affirmatively. Additional information provided includes that Jim Liming will provide us (not to NPEC) a presentation on risk-informed insights and PRA applications;

also Mansoor's technical presentation will be given to us today and at the NPEC meeting Wednesday. Included with old business is to review the 5-year plan for SC3.

Added new business (as time is available) includes (1) conformance of the SC3 procedures and manual with the IEEE policies and procedures and (2) IEEE lapel pins. Gopal has developed an organization chart of IEEE relative to SC3, which will be reviewed during a break and discussed as time is available. Dave Horvath made a motion to accept the agenda as amended and Jim Parello seconded. The motion passed.

2.0 SC-3 Secretary's Report

- **Approval of SC3 09-2 Meeting Minutes**

There were several corrections to the minutes sent out by Ted; the changes were noted and will be reflected in the final meeting minutes. Mansoor made a motion to accept the minutes as amended and Dave seconded. The motion passed.

- **Action Item Status**

There were five open actions.
09-1-B – Post the SC3 Operating Guide on the website. The website has been updated and this action item is closed.
09-2-A – Contact with members who had missed 3 or more meetings was reported by Ted. Ali is busy but expects to attend later; Jim Liming noted that he had received the same information, but will contact him again. Craig Sellers is limited now on travel, but expects to be at the next meeting and to stay involved. Jacob Kulangara has come to this meeting.
09-2-B – Mansoor's action on removal of standards 500 and 934 from the working groups and putting them elsewhere is open; he will provide an update in the operating manual and send it to Rachel. Mansoor will send another revision to Rachel and Yvonne will determine status with Rachel.
09-2-C – Glen's action to report the outcome of NPEC activities associated with our 7 standards was accomplished by email after the 09-2 meeting.
09-2-D – While Ted did send out an email to determine their classification (in accordance with the Standards Association definitions), only about half the members responded; Ted guessed at those that did not respond. Glen summarized the categories; there is some confusion on the categorization versus the duties and responsibilities of the individuals. The intent is to re-validate during old business.

Current Action Items status can be found in the attachments (Action Items).

- **SC3 Membership**

Detailed discussion was deferred to Old Business discussion. Glen gave Yvonne the action to again poll the members to determine what "balance of interest" category they fit into, using guidelines from the IEEE website.

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MEETING ATTENDANCE (Rolling 8 meetings)

Name	Bal	06-2 Williams-burg	07-1 Ft. Lauder-dale	07-2 Monterey	08-1 San Antonio	08-2 Toronto	09-1 Cocoa Beach	09-2 Salt Lake City	10-1 Clear-water Beach
Gopal Aravapalli	U	-	-	-	-	-	P	P	P
George Ballassi	G	P	P	P	P	P	P	P	P
John Beatty	P	-	-	-	-	Guest	P	P	P
Tom Crawford	U	-	-	-	P	A	P	P	A
Ali Daneshpooy	P	-	-	P	P	A	A	A	A
~~Larry Gradin~~	~~P~~	-	P	P	A	A	A	P	-
Rachel Gunnett	U	-	P	P	P	A	P	P	A
Hamid Heidarisafa	U	A	A	A	A	P	P	P	P
Sharon Honecker	I	-	-	-	-	Guest	P	P	P
David Horvath	U	A	P	P	A	P	P	A	P
Peter Kang	G	P	A	P	P	P	A	P	P
Jacob Kulangara	U	-	-	P	A	A	A	A	P
Bob Lane	P	-	-	-	-	-	-	-	P
James Liming	P	P	P	P	P	P	P	P	P
Singh Matharu	G	-	-	-	-	-	-	-	P
Kirk Melson	P	-	-	-	-	-	-	P	P
~~Ken Miller~~	~~G~~	-	-	-	-	-	P	A	-
Joe Napper	U	-	-	-	-	P	A	P	P
Jim Parello	P	-	-	Guest	P	P	P	P	P
Ted Riccio	U	P	P	P	P	P	P	P	P
Mansoor Sanwarwalla	U	A	P	P	P	P	P	P	P
Glen Schinzel	U	P	P	P	P	P	A	P	P
Owen Scott	U	-	-	P	P	P	A	P	A
Craig Sellers	I	-	-	Guest	P	A	A	A	A
Barry Sloane	I	-	-	-	-	-	P	A	A
John Stevens	P	-	-	P	P	P	P	P	A
John Taylor	I								
Yvonne Williams	U	-	-	-	P	P	P	P	P
Kiang Zee	U	-	-	-	P	P	A	P	A

P means Present A means Absent - Prior to attendance (blank) corresponding member

The current breakdown of SC 3 members by category is as follows:

Academic A	**General Interest I**	**Gov't/Military G**	**Producer P**	**User U**	**Total**
0	4	3	6 or 7	13 or 14	27*

* Includes corresponding members – Ali Daneshpooy, John Taylor

The SC-3 roster can be found on the IEEE/NPEC website at URL: http://grouper.ieee.org/groups/npec/private/sc3/sc-3.html: user name: [redacted] password: [redacted].

- **Alligator Fund**

The current balance (as of end of 09-2 meeting) was reviewed, along with the purpose of the alligator fund (to cover costs of the meetings). Sometimes there are costs associated with the meeting (e.g. rooms, projection screens, etc.). Several times the funds have been used for refreshments. Ted and Yvonne had decided to use some of the alligator fund to provide the coffee, tea and pastries for these meetings (Monday and Tuesday). Discussion followed about what the subcommittee members felt was useful and cost-effective. It was decided that coffee (2 gallons regular and 1 decaf) and tea was essential; the hotel typically provides water already. Other food is not cost-effective from the hotels; if allowed by the hotel, we can have a member bring in pastries from outside, such as Dunkin Donuts. Unless notified otherwise, members should handle rest of breakfast on their own. In order to maintain a balance of around $500 (considered prudent), it was agreed that $10 will be collected from each SC3 member. These amounts are not required from guests, but are welcome if provided. See summary in attachments.

Question from Jim Parello - does NPEC need our roster? George will address in ex officio report.

3.0 SC-3 Chair's Report

- **SC3 Leadership review - succession planning**

The chair (Glen) and vice chair (Mansoor) of SC3 were effective 09-1 meeting, the secretary 10-1 meeting. These offices will run through calendar year 2010. For the 11-1 meeting, we need to look at changeovers in leadership, so members should consider stepping up. Further discussion will follow at 10-2 meeting.

- **Leadership telecoms**

These telecons appear to be working well for maintaining communications, for keeping focus on action items and status of standard activities. The participants are Glen, Mansoor, Yvonne, George (as ex officio and as contact with NPEC), and the working group chairs (Ted, Jim Liming, Dave). They occur typically every 6 to 8 weeks, and last approximately an hour. We also have the capability to communicate via email if anything is appropriate for the general SC3 membership. The WG chairs also can email or conference call, as necessary.

- **PAR status**

This will be covered under Old Business.

- **NPEC meeting preparations**

The meeting starts at 7:30 Wednesday morning, in Cedarwood room. Members of SC3 are welcome to attend the NPEC meeting as guests. Ted will be providing a work-in-progress summary for P1819, and Mansoor will be providing a technical presentation. As chair, Glen will provide status summary and activities for SC3.
The NPEC members contribute for the NPEC alligator fund; guests are not obligated to pay. There is an option to participate in the lunch (and pay for it at guest rate). While the

agenda might provide information on items that could be of interest to individuals, the agenda is not set until too late to allow time to make hotel arrangements to stay over. The presentations to be made are sometimes finalized as little as two weeks ahead of the meeting. The slides for presentations made to NPEC are available on the NPEC website (eventually).
Suggestion was made for making the SC3 website more useful, e.g., to put our NPEC presentations onto SC3. Copyright issues may apply, so presentations should be read for information, not distributed or used as basis for other material.

4.0 Vice Chairman's Report

The SC3 Operations Manual serves as the basis for Mansoor's presentation here (attached). Persons who are not members of IEEE can be a member of SC on the basis of ability to contribute to our activities, but cannot vote on standards, except standard by standard. Granting of membership into the subcommittee has been handled informally, sometimes by appointment by chair, sometimes after subcommittee discussion.

Industry interests should be updated in the Operations Manual to match the new categories (academic, user, producer, government, general interest); this will be part of the update Mansoor will be providing for discussion at next meeting. Sometimes the five categories are difficult or ambiguous to determine for a particular standard.

Honorary member vs corresponding member is almost the same definition in the SC3 Operations Manual. Glen identified that we need more distinction and asked Mansoor to check the NPEC Operations Manual also. It would seem that honorary membership is recognition of past service, with no expectation of work, while a corresponding member is expected to do work.

Glen asked Mansoor to send out the Operations Manual for review at next meeting.

5.0 Ex Officio Report

George Ballassi indicated that co-logo standards work is ongoing with IEC, for common standards to provide unified standards for the pending resurgence of the nuclear industry. The G8 meeting endorsed nuclear power. NPEC is reviewing IEC standards to determine what topics can be covered by unified standards. Condition monitoring is one of the current hot topics, as is QA/QC.

George asked for opinions on meetings outside the United States. There is significant emphasis for NPEC to become more international in meeting locations. How available are SC3 members to participate in meetings outside the US? As an example, SC2 is meeting in Sweden next year. The response from members in general is that it is more challenging to get approval for international travel, about 80% -- both financial and security issues. Another potential issue is where the meeting is, and the perceived applicability to IEEE; resort cities also raise issues on perception, unless the city is seen as an established business meeting city.

A recent email was received about upcoming audits (starting in June) by AudCom (audit committee) to ensure that working groups have policies and procedures that are in conformance with IEEE policy. Action to ensure that SC3 is in conformance was added to previous action item for Mansoor, to update the Operations Manual, get electronic review and comments, and to make a presentation of changes at the 10-2 meeting. We will then vote for approval of the manual at that meeting.

6.0 IEEE-1819 (Risk Informed Standard)

Ted showed the work-in-progress slide presentation he would be making to NPEC. The standard has a number now - 1819. The PAR is not yet approved. Our intent in writing the standard is to provide a standard that NRC can endorse, that gives appropriate methodology for electrical and electronic equipment; existing guidance and information for categorization focuses on mechanical equipment. At the end of the presentation, the schedule was noted as being very ambitious.

Peter asked where this standard is seen as fitting in the regulatory environment. Ted responded that it provides guidance for implementation of 10CFR50.69 for US plants, and also international guidance for risk-informed treatments, for both new and existing plants, for both design and maintenance. Further discussions of the uses for the standard can be held at the 10-2 meeting. (The presentation as made to NPEC is attached.)

7.0 Working Group Reports

WG 3.1 Ted Riccio reported that the working group met yesterday for comment resolutions on IEEE 336. That work will continue this afternoon.

WG 3.2 Dave Horvath reported that on IEEE 692, the comments have been resolved and the recirc ballot resulted in more comments, but no negative votes. After resolutions, the standard has gone to RevCom and was approved yesterday for publication.

WG 3.3 Jim Liming reported the working group had an abbreviated meeting yesterday, then yielded to assist with WG 3.1. The reaffirmation work for standard 352 is complete and has been sent to NesCom for final approval (anticipated in March). For 577, comments have been received from the mandatory editorial review, and the draft will be sent out tonight to continue progress on it toward balloting.

WG 3.4 Dave reported that IEEE 1205 was reaffirmed around two years ago, and Dave is investigating whether there is a need to revise it. Reaffirmation could be an option, but there were several comments from last time that had as resolution that they would be addressed in the next revision. Dave is forming a committee to investigate further.

8.0 Liaison Reports

- **NRC Liaison Report**

  Peter presented the NRC report. See attachments.

- **ASME Liaison Report**

  Glen presented the ASME liaison report (attached). He indicated that ASME standards for risk-informed in-service testing (ISTE) and low safety significant SSCs standard (OM-29) could be referenced in our standards and we could deal with topics in a similar fashion. We need to ensure that our standards support both existing and new plants. These standards are due to be published in first quarter 2010.
  We need to maintain awareness of ASME activities relative to code cases, as noted in report.
  CNRM is shifting direction, from PRA modeling and more toward practical implementation activities, to making these tools more usable for stations and engineers (not the PRA people). Again, this is of interest to SC3.
  Questions:
  Who is our contact for CNRM? Answer – Glen normally gets some feedback from Rick Grantham, who is the chair; he is at South Texas Project.
  How can we get copies of these ASME standards? Answer - Glen has final form copies. Ted also has them and will provide them through emails.
  Are there ASME code cases yet on categorization and methodology? Answer - Glen will check on where these might be.

- **NEI/EPRI Liaison Report**

  There was no NEI or EPRI report.

8A Miscellaneous

IEEE Hierarchy -- Gopal developed a one-page hierarchy of IEEE zeroing down to SC3 and the working groups. This is draft right now. This figure is attached. This is a great start; if there are any comments, they should be sent to Gopal. The figure will then be discussed further at next meeting.
Standards development – Having a flowchart for the steps involved in preparation and approval of a standard would be very helpful. An action was assigned to George for development of a presentation for the 10-2 meeting.

9.0 Presentations

Jim provided a presentation on PRA applications. The payback for the work at an operating plant is approximately 20 to 1 per Jim. Glen seconded this, that payback is approximately 18 months.

Mansoor provided the presentation he will also make at NPEC, regarding emergency diesel generators and their reliability.

The presentations are attached.

10.0 Old Business

Glen reviewed the status of our standards.

The addressal of membership requirements was cut short by inadequate time remaining. Yvonne will send out an email asking what category individuals fit into.

Several guests indicated their desire to become SC3 members: Kirk Melson, Singh Matharu and Bob Lane. After these individuals were asked to step outside, the subcommittee agreed that new members are appropriate. Singh is essentially filling Ken Miller's place, Kirk has already shown his commitment by previous attendance, and several members know Bob Lane. The subcommittee approved by acclamation the membership of these three persons. After they returned into the room, Glen told them they had been approved as members and that we welcome their assistance.

11.0 New Business

New business was also cut short for time constraints. The issue of conformance with IEEE policies and procedures was already mentioned. Ted wanted to discuss whether anyone wanted to get IEEE lapel pins, but this was deferred.

12.0 Review of Action Items

There was no time left to discuss action items that had been assigned. Yvonne will email these out so that people are aware of them and working to close them.

13.0 Next Meeting

The next meeting will be July 19-21 at South Lake Tahoe, CA, with the 19th being working group meetings, the 20th for SC3 meeting and more working group meetings, and the 21st for the NPEC meeting (optional). Glen pointed out that we should sign up for rooms now, as the meeting rooms are free if we reach the quota set with the hotel.

14.0 Adjournment

Glen indicated that the meeting was out of time. Ted moved to adjourn the meeting; Jim Liming seconded the motion. The motion was passed, and the meeting was officially adjourned at 12:40 pm.

Prepared by Yvonne Williams SC-3 Secretary.

ATTACHMENTS

Attachment 1 Action Items Double click below	Attachment 2 Alligator Fund Double click below	Attachment 3 NRC Liaison Report Double click below
Action Items	Alligator Fund	NRC Liaison Report (1-18-10).doc
Attachment 4 ASME Liaison Report Double click below	Attachment 5 Liming Presentation Double click below	Attachment 6 Agenda Double click below
ASME Liason Report 0110.doc	RI-Apps Update 20100119.ppt	SC3 Agenda_1001.doc
Attachment 7 Sanwarwalla OPM Presentation Double click below	Attachment 8 Riccio P1819 Presentation Double click below	Attachment 9 Aravapalli IEEE Chart Double click below
Will be provided on SC-3 website if still available	P1819-WIP-NPEC-Jan2010.ppt	IEEE NPEC to SC3 chart.pdf
Attachment 10 Sanwarwalla DG Presentation Double click below		
Will be provided on SC-3 website		

Item No.	Subcommittee 3.0 Actions	Owner	Due Date	Closure Comments
09-1-B	Rachel to post SC3 Operating Guide on the web	Rachel	Prior to 09-2 meeting	Closed - see 10-1 items
09-2-A	Contact members with 3 or more missed meetings to see what their future intentions are or if they want to be corresponding members.	Ted	Prior to 10-1 meeting	Closed Ali D. -- busy but expects to join us again; Craig S. -- expects to make next mtg.; Jacob K. -- is here 10-1
09-2-B	Remove Stds 500 and 934 from working groups and place elsewhere	Mansoor	Prior to 10-1 meeting	open -- will update operating manual and send to Rachel - closed and incorporated into 10-1 A
09-2-C	Report outcome of NPEC activities associated with our 7 standards.	Glen	Prior to 10-1 meeting	Closed - done via email after 09-2 mtg
09-2-D	Contact all members to determine association in accordance with Standards Association classifications	Ted	Prior to 10-1 meeting	Closed but only about half responded - see 10-1-C
10-1-A	Update operating manual for (a) balance of interest categories (vs industry interests) (b) requirements for membership (c) honorary vs corresponding membership (using NPEC manual info) (d) as needed for conformance with IEEE policies (e) removal of Std 500 and 934	Mansoor	Prior to 10-2 meeting - send for electronic review/comment	anticipate approval 10-2 meeting
10-1-B	Develop presentation / flowchart for standards preparation (birth to approval) for next meeting	George	for presentation at 10-2 mtg	
10-1-C	Contact all members to determine balance of interest designation, sending out with the guidelines for choices	Yvonne	Prior to 10-2 meeting	

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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

Meeting 09-1	Meeting 09-2
Expenses –$12.00 Donuts Meeting contributions $180.00	Expenses –$92.54 Meeting contributions $210.00
Meeting 10-1	Meeting 10-2
Expenses –$380.90 Meeting contributions $220.00	Expenses – Meeting contributions

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2009 IEEE L50-S Financial Report

Received from individuals	$390.00
Meeting expenses	$104.54
Cash on hand beginning of the year	$409.20
Total cash at end of year	$694.66

NRC LIAISON REPORT
BY PETER KANG
OFFICE OF NEW REACTORS (NRO)
US NUCLEAR REGULATORY COMMISSION
January 18-19, 2010

US NRC Activities Related to New Reactor Licensing

Since the inception of NRO in October 2006, NRO has been conducting licensing reviews under 10 CFR part 52 process for three Design Certification (DC) applications, one DC amendment, and 17 Combined Operating License (COL) applications while learning the details of a licensing process which had not been applied to COL applications in the past and trying to enhance NRO processes and a new scheduling system. Unlike Part 10 CFR Part 50, the 10 CFR Part 52 is a streamlined licensing process, such that once a particular DC is approved for a COL application (RCOL). Its subsequent applicants (SCOL) are only addressed the departures and site-specific items such as offsite power system, ultimate heat sink (UHS) makeup water system, and cooling water system. This makes new plant licensing more stable and predictable. Most of all, it reduces the financial risk to licensees. The DC is valid for 15 years.

The Nuclear Regulatory Commission staff is currently reviewing the following DC and COL applications:

US APWR (Mitsubishi) DC Application

On December 31, 2007, Mitsubishi Heavy Industries submitted an application for a DC for the US-APWR. The US-APWR is a 4451-megawatt (thermal) pressurized-water reactor (PWR) designed by Mitsubishi. It is an evolutionary design with active safety features to be used in a 1538-megawatt electric reactor planned for the Tsuruga Power Station in Japan. The US-APWR by Mitsubishi Heavy Industries (MHI) proposes to use four (50 percent) gas turbines instead of diesel driven emergency diesel generators (EDGs) for safety-related emergency power supply system. Issues facing the use of gas turbine for USAPWR are reliability as no credible reliability data is available. Since MHI proposes gas turbines (Kawasaki) to be used for both EDG and station blackout (SBO) purpose, it faces a diversity issue that prefers two power sources to be different (i.e., diesel engines for safety-related function and gas turbines for SBO). With 50 percent capacity turbines, MHI proposes to be able to operate the plant with three turbines.

US EPR (AREVA) DC Application

On December 14, 2007, AREVA submitted its DC application for the Evolutionary Power Reactor (EPR). The EPR is an evolutionary power reactor design based on the latest French plant (AREVA). UniStar submitted a COL application for Calvert Cliffs Unit 3. The Calvert Cliffs COL application is to be certified the first plant for the EPR design and is designated as referenced COL applicant (RCOLA) and its subsequent COL plants are designated as SCOL. Unlike MHI, the US EPR design has four (100 percent) diesel generators and it requires all four diesels to be operable for power operation.

DC Reviews Approved or Currently Under Review are:

Approved Designs

ABWR B Advanced Boiling Water Reactor by General Electric
AP1000 - AP1000 Reactor by Westinghouse Electric Company

Designs under Review
ESBWR - Economic Simplified Boiling Water Reactor by General Electric
USEPR - U.S. Evolutionary Power Reactor by AREVA Nuclear Power
USAPWR - U.S. Advanced Pressurized Water Reactor by Mitsubishi Heavy Industries, Ltd.

COL Applications Currently Under Review:
South Texas Project (2 units) ABWR
Bellefonte (2 units) AP1000
Calvert Cliffs (1 unit) EPR
North Anna (1 unit) ESBWR
William Lee Nuclear Station (2 units) AP1000
Harris (2 units) AP1000
Grand Gulf (1 units) ESBWR
Vogtle (2 units) AP1000
Summer (2 units) AP1000
Victoria County (2 units) ESBWR
Fermi (1 unit) ESBWR
Comanche Peak (2 units) USAPWR
River Bend (1 unit) ESBWR
Callaway (1 unit) EPR
Nine Mile Point (1 unit) EPR
Bell Bend (1 unit) EPR
Turkey Point (2 units) AP1000

Advanced Reactors

The NRC staff is working with representatives of the U.S. Department of Energy (DOE) on the next generation nuclear systems known as "Generation IV reactors." The NRC has received several letters of intent for applications for design certifications and design approvals.

Design	Applicant
International Reactor Innovative and Secure (IRIS)	Westinghouse Electric Company
NuScale	NuScale Power, Inc.
Pebble Bed Modular Reactor (PBMR)	PBMR (Pty.), Ltd.
Super-Safe, Small and Simple (4S)	Toshiba Corporation
Hyperion	Hyperion Power Generation, Inc.
Power Reactor Innovative Small Module (PRISM)	GE Hitachi Nuclear Energy
mPower	Babcock and Wilcox Company

2009 Smart Grid Conference

From September 21-24, 2009, the NRC staff attended the Grid Week 2009 conference held in Washington, DC. This conference was attended by approximately 1400 people from around the world. During this conference, industry experts from both inside and outside the U.S. shared their views on rapidly-emerging smart grid developments and deployments and also discussed the potential for real smart grid implementations to increase energy efficiency and expand the use of energy from renewable sources including cyber security issues, interoperability standards

development, and modernization of existing grid infrastructure.

Qualification of ESBWR & AP1000 Extended Duty Cycle Batteries
At present there are no regulatory guides or industry standards available that provide procedures and/or assessment methods to qualify a battery for the 72-hour duty cycle duration. IEEE Std.535, has opened a PAR to incorporate guidance on qualification of Vented Lead-Acid (VLA) batteries for extended duty cycles. Extended duty cycles are those that go beyond 8 hours. The objective of qualification plan is to demonstrate that the batteries and racks used in the ESBWR & AP1000 designs, as installed, will perform their required safety-related Class 1E function throughout their 20-year qualified life. Westinghouse and GEH have submitted their qualification plan requirements for qualifying 24 –hour and 72-hour duty cycle batteries. The objective of this type test qualification is to demonstrate that the batteries and racks as installed, will perform their required safety-related Class 1E function throughout their qualified life.

License Renewal Applications under Review:
1. Cooper
2. Duane Arnold
3. Crystal River
4. Salem
5. Hope Creek
6. Diablo Canyon

License Renewal Applications Approved in 2009:
1. Beaver Valley Power Station, Units 1 and 2
2. Three Mile Island Nuclear Station, Unit 1
3. Prairie Island Nuclear Generating Units 1 And 2
4. Susquehanna Steam Electric Station Units 1 And 2
5. Indian Point Nuclear Generating Unit Nos. 2 and 3
6. License Renewal Application For Salem Nuclear Generating

Information Notices (Ins)

Document Number	Date	Description
in2009-16	09/15/2009	Spurious Relay Actuations Result In Loss Of Power To Safeguards Buses
in2009-10	07/07/2009	Transformer Failures - Recent Operating Experience
in2009-03	03/11/2009	Solid State Production System Card Failure Results in Spurious Safety Injection and Reactor Trip
in2009-02	02/23/2009	Biodiesel In Fuel Oil Could Adversely Impact Diesel Engine Performance

IEEE NPEC SC-3 Meeting **January 19, 2010**

ASME Liaison Report

Glen E. Schinzel - STARS

Risk-Informed In-service Testing (IST) standard

The approved Risk-Informed Inservice Testing standard (entitled ISTE) continues to await ASME publication – publication should occur early this year. This standard provides guidance for testing affected pumps and valves, with the scope and frequency of testing commensurate with the component's safety significance. This standard offers useful insights into possible future IEEE implementation of risk technology applications.

Treatment Standard for Low Safety Significant SSCs

Standard OM-29 is approved and will be published early this year. This standard addresses treatment of safety-related, low safety significant pumps and valves. IEEE WG3.1 is factoring in the insights of this ASME standard in the pursuit of a risk-informed IEEE standard per SC3 Risk-Informed White Paper, Option 3.

ASME Interactions on 10CFR 50.69

10CFR 50.69 allows the special treatment requirements (Class 1E, EQ, etc) currently invoked on safety-related, low safety significant equipment to be reduced. Two ASME Code Cases, N-660 and N-752, are relied upon for passive categorization of both components and pressure boundary. Code Case submittals have been reviewed by the NRC, and further industry action is being considered. These further actions may impact/influence the WG3.1 risk-informed standard development.

Committee on Nuclear Risk Management (CNRM)

ASME's Committee on Nuclear Risk Management is considering development of additional standards to establish consistent approaches on integrated decision-making panels, use of expert panels, and approaches for practical programmatic applications using risk insights. Much of the focus of the CNRM activities is on practical standard development that will aid the practitioner in effective implementation.

This is an area for IEEE to monitor. The approaches established in these ASME standards may be useful for future IEEE consideration and inclusion in future IEEE standards.

Nuclear Risk Management Coordinating Committee (NRMCC)

ASME and the American Nuclear Society (ANS) head a joint industry oversight group to better align various Standards Development Organizations (SDOs) when developing risk-related standards within the nuclear industry. IEEE's representative on this industry group is the NPEC Vice Chairman (Satish Aggarwal). A separate report on the activities of this committee will be provided by the NPEC Vice Chair.

Other

Much of ASME's focus is on validating current standards to support new nuclear construction and to develop new standards to support this new construction where deficiencies in existing standards are noted. ASME is also focused on the next generation of nuclear plant development and developing the necessary standards to support these new technology applications. It appears that most of the current standards are supportive of the expected and planned construction efforts, but this review continues to proactively assess the needs of the industry to ensure that necessary standards are available when required.

Current Status of Risk-Informed Performance-Based Applications

By

James K. Liming

IEEE NPEC Subcommittee 3, Working Group 3.3

Presented to the

IEEE NPEC Subcommittee 3

January 19, 2010

Presentation Objectives

- Provide the IEEE SC-3 with an overview of the current status of Risk-Informed Performance-Based Applications.
- Provide a starting point for developing a presentation for the IEEE NPEC on this subject.

Key Documents

- 10 CFR 50.69, “Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors,” Title 10 of the U. S. Code of Federal Regulations, Chapter 50, Section 69, 69 FR 68047, November 22, 2004.
- ANSI/ANS-58.21, “External-Events PRA Methodology,” American National Standards Institute/American Nuclear Society National Standard 58.21, 2007.
- ANSI/ANS-58.22, “Low Power and Shutdown PRA Methodology,” American National Standards Institute/American Nuclear Society National Standard 58.22, Draft #8C for Ballot, 2008.
- ANSI/ANS-58.23, “Fire PRA Methodology,” American National Standards Institute/American Nuclear Society National Standard 58.23, 2007.
- ASME-RA-S-2002, “Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications,” American Society of Mechanical Engineers, 2002; with updates through ASME-RA-Sa-2009.
- EPRI TR-105396, “PSA Applications Guide,” Electric Power Research Institute, August 1995.
- IEEE Std 338TM-2006, “IEEE Standard for Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems,” Institute of Electrical and Electronics Engineers, December 6, 2006.
- NEI 00-02, “Probabilistic Risk Assessment (PRA) Peer Review Process Guidance,” Nuclear Energy Institute, March 2000.
- NEI 00-04, “10 CFR 50.69 SSC Categorization Guideline,” Nuclear Energy Institute, July 2005.
- NEI 04-10, “Risk-Informed Technical Specifications Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies, Industry Guidance Document,” Revision 1, Nuclear Energy Institute, April 2007.
- NEI 06-09, “Risk-Informed Technical Specifications Initiative 4B, Risk-Managed Technical Specifications (RMTS) Guidelines,” Nuclear Energy Institute, November 2006.

Key Documents

- NFPA 805, “Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,” National Fire Protection Association, 2006 Edition.
- RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” Regulatory Guide 1.174, Revision 1, U.S. Nuclear Regulatory Commission (NRC), November 2002.
- RG 1.175, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing,” Regulatory Guide 1.175, U.S. Nuclear Regulatory Commission (NRC), August 1998.
- RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications,” Regulatory Guide 1.177, U.S. Nuclear Regulatory Commission (NRC), August 1998.
- RG 1.178, “An Approach for Plant-Specific, Risk-Informed Decisionmaking for Inservice Inspection of Piping,” Regulatory Guide 1.178, Revision 1, U.S. Nuclear Regulatory Commission (NRC), September 2003.
- RG 1.182, “Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants,” Regulatory Guide 1.182, Revision 1, U.S. Nuclear Regulatory Commission (NRC), May 2000.
- RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed Activities,” Regulatory Guide 1.200, Revision 2, U.S. Nuclear Regulatory Commission (NRC), March 2009.
- RG 1.201, “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance, Regulatory Guide 1.201, Revision 1, U.S. Nuclear Regulatory Commission (NRC),” May 2006.
- RG 1.205, “Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants,”

  Regulatory Guide 1.205, Revision 1, U.S. Nuclear Regulatory Commission (NRC), December 2009.

Activities Update

- Reg Guide 1.200 Revision 2
- 10 CFR 50.69 (Formerly Graded QA)
- Fire PRA
- Tech Spec initiatives 4B and 5B
- Maintenance Rule (a)(4)
- ILRT interval extension
- Risk informed ISI
- Digital Instrumentation
- PRA peer review
- NRC Risk Assessment of Operational Events (RASP) Handbook Comments

Draft NRC Regulatory Guide 1.200 R2

- Addresses combined ASME/ANS PRA standard with internal events, fire, and external events (seismic)
- Comment period has closed
- NRC issued Revision 2 for use in March 2009
- NEI requested NRC provide additional public meeting to discuss Reg Guide prior to issuance
  - Significant comments were made addressing applicability, implementation schedule, and other issues
  - ASME/ANS combined standard addendum issued and incorporated into Reg Guide

10 CFR 50.69 – Special Regulatory Treatment

- Final rule issued in late 2005
- Reg Guide 1.201 issued with industry concerns resolved. Endorses NEI 00-04 for active component categorization
  - ASME code cases (N-660, N752) intended to address passive categorization
  - WCNOC/PWROG submittal of passive categorization provides alternative to code case; NRC draft SE under review
- NRC issued draft safety evaluation for 10 CFR 50.69 passive categorization method (WCAP 16308 NP)
- Effort is important to establish viability of §50.69
  - Alternative to ASME code case N660
  - Requires large break assumption with no credit for operator action (diminishes benefit)
  - Expectations for programmatic treatment of low safety significant SSCs are inconsistent with Regulatory Guide 1.201
  - Issue has been elevated to NRC senior management

Fire PRA Developments

- NUREG/CR-6850 improvement effort:
  - Process continues through EPRI/NRC RES MOU
    - Many interactions with team
  - Some level of progress on identified technical issues
    - Oil fires
    - Non suppression probabilities
    - Hot short duration
    - Cabinet fire location

Fire PRA Developments

- NUREG/CR6850 improvements (cont)
  - Lack of substantial progress on some key issues
    - Incipient detection credit
    - Transient fire growth rate
    - Fire ignition frequencies
  - NRC research staff continues to suggest bounding or conservative values
    - Reluctance to accept realistic methods required for PRA
    - Lack of involvement by NRC PRA experts

Fire PRA Developments

- EPRI will publish proposed enhancements to methods for use by plants implementing NFPA 805
  - These are the methods that have been proposed to the NRC 6850 team and are still under discussion
  - NFPA 805 schedule constraints result in need for methods now
  - First methods were published in December (ignition frequencies, credit for incipient detection, main feed pump oil fires)
  - NUREG/CR-6850 discussions will be continued as a longer term effort

Fire PRA Developments

- Industry meeting with NRC senior management
  - NRC regulatory approach for PRA technical adequacy is through consensus standards, peer review and Regulatory Guide 1.200
  - Prescriptive methods (e.g., NUREG CR/6850) are not regulatory requirements
  - EPRI enhancements are consistent with combined ASME/ANS standard requirements for fire PRA and will be used by licensees
- Industry PRA infrastructure continues to be challenged by FPRA development
  - Internal events and fire PRA must essentially conform to Regulatory Guide 1.200
    - Significant raising of bar for technical adequacy and documentation
  - FPRA development costs increasing (~$3M)
  - PRA peer review, support of other peer reviews, and addressing findings will be resource intensive
  - Industry training new PRA personnel through EPRI
    - Strong utility attendance

Risk-Informed Technical Specifications

- Initiative 4B – Flexible completion times
  - TSTF under development
  - SONGS 4B pilot withdrawn
  - Other plants considering 4B piloting
  - STP has identified issue with scope of 4B
    - Control room dose
  - Mitsubishi has applied for 4B and 5B approvals for US-APWR

Risk Informed Technical Specifications

- Initiative 5B – Removal of surveillance intervals
  - Two recent 5B approvals (Diablo, STP)
  - Additional 5B plants in pipeline for submittal
    - Most BWR plants planning 5B submittals in 2009
  - TSTF 425 (initiative 5) CLIIP notice released for comment
    - Industry comments provided
    - No show stoppers
    - NRC continues to encourage 5B submittals

Maintenance Rule (a)(4)

- Meetings with NRC staff held in 2009
- NRC RIS on inclusion of external events and fire in (a)(4) scope
  - Compliance backfit basis expected
  - 30 day public comment period
  - NEI will provide comments
  - NEI creating task force to support guidance development
- NRC 12/24/08 memorandum to CRGR with proposed draft RIS released to ADAMS
  - Proposed compliance backfit as expected
- NEI provided response to CRGR on January 9
- NRC and NEI letters are included in CRMF materials

Maintenance Rule (a)(4)

- NEI provided qualitative guidance to address fire to industry in May 2006
  - Does not address shutdown
- NFPA 805 requires development of shutdown configuration control for fire
  - FAQ 0040 to NEI 04-02
  - Applies to higher risk POS
- EPRI has developed qualitative shutdown guidance for ANS LPSD PRA standard
  - Does not address fire
  - Significant raising of bar from existing guidance
- NRC staff pushing for more shutdown guidance in general
  - Perception of increasing trend of events

ILRT Interval Extension

- NRC safety evaluation issued June 25, 2008
  - The SE finds that NEI 94-01 and EPRI Report 1009325 are acceptable for referencing by licensees proposing to amend their technical specifications to permanently extend the ILRT surveillance interval to 15 years. This acceptance is subject to limitations and conditions identified in the SE.
- NEI issued letters to administrative points of contact in 2008
  - Additional letter to be issued in near future
- Revise reference in Tech Spec administrative controls – TSTF in process
- Revisions to NUMARC 94-01 and EPRI 1009325 have been issued
  - LAR requires discussion of RG 1.200 applicability
  - Type C test grace period changed from 15 to 9 months
  - This is a problem and we are re-engaging NRC to return 94-01 to previous Type C grace period

PRA Peer Review Task Force Efforts

- Update industry peer review guidance
- Discuss standard interpretation issues emerging from peer reviews
- Facilitate uniformity and consistency across peer reviews
- Handle miscellaneous issues related to peer reviews as they arise

PRA Peer Review Task Force Efforts

- Issued NEI 05-04, Rev. 2
  - Changes based on feedback from peer reviews
  - Reflects issuance of Addendum A of combined standard
- Issued final NEI 07-12, Rev. 0
  - Addressed NRC comments from DG 1200
  - Reflects issuance of Addendum A of combined standard
- Both documents sent to NRC for endorsement in RG 1.200, Rev. 2
- Sent to industry on 12/22/08

PRA Peer Review Task Force Efforts

- Gathering best practices to be distributed through owners groups
- Compared summary data from peer reviews to ascertain level of consistency
  - For almost every element, the average number of suggestions was higher than the average number of findings
  - The number of SRs assessed as CC II or higher vs. CC I or not met was fairly consistent across all the peer reviews

PRA Peer Review Task Force Efforts

- Miscellaneous work
  - Clarifying peer review preparation expectations
    - Joint OG letter in progress
  - Maximizing usefulness of peer reviews
  - Communicating purpose of PRA peer reviews with utility personnel outside PRA community

Digital I&C PRA

- NRC Management and ACRS of opinion that the state of the art for modeling digital systems is not sufficiently advanced to support applications
  - Steering Committee proposed closing PRA-related work in digital I&C project plan
  - Remaining work to be completed under NRC digital I&C research plan
- Industry is concerned that lack of NRC confidence in ability to model the operation of digital systems could affect all risk applications, and discourage operating reactors from pursuing digital upgrades
- NRC staff agreed to pursue short-term work on potential simplified modeling methods with limited applications to alleviate above concern

Risk-Informed ISI

- First widely-implemented risk-informed application with updates due post-RG 1.200, Rev. 1
- Peach Bottom was first licensee to submit an RI-ISI-related relief request under RG 1.200, Rev. 1
- NRC staff has indicated that information given was sufficient for their review
- Template for addressing RG 1.200 in RI-ISI updates for both EPRI and WOG methodologies will be provided by NEI in near future
  - Draft available on request

Risk Assessment of Operational Events (RASP) Handbook

- NRC RASP handbook provides guidance for NRC staff use of PRA in Phase 3 SDP
- Draft RASP handbook made publicly available by NRC in January 2008
- Industry reviewed Volume 1: Internal Events
  - Several technical issues, particularly in the areas of HRA and CCF treatment
  - NEI forwarded comments to NRC in 2008

Risk Assessment of Operational Events (RASP)

- September 2008 public meeting to discuss industry comments for incorporation into next revision of RASP Handbook
  - Staff generally receptive to technical comments
  - NRC schedule for updates to RASP Handbook long term (2010 and later)
  - Industry requested interim direction to address conservatisms
- NRC providing industry with proposed resolutions to comments

APPENDIX

SUPPORTING INFORMATION SLIDES

Risk-Informed Applications – Some Historical Background

- 1975: NRC publishes the ground-breaking "Reactor Safety Study," WASH-1400, often recognized as the first comprehensive PRA.
- 1990: NRC publishes "Severe Accident Risks: An Assessment for Five U. S. Nuclear Power Plants," NUREG-1150 series documents.
- 1993: NUMARC (now NEI) publishes "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," NUMARC 93-01 (Revision 0) to support implementation of 10 CFR 50.65 requirements.
- August 1995: NRC publishes "Use of Risk Assessment Methods in Nuclear Activities: Final Policy Statement," Federal Register.
- August 1995: EPRI publishes "PSA Applications Guide," EPRI TR-105396.
- December 1995: EPRI publishes "Guidelines for Preparing Risk-Based Technical Specifications Change Request Submittals," EPRI TR-105867.

Risk-Informed Applications – Some Historical Background (Continued)

- July-September 1998: NRC publishes Risk-Informed Decision-Making Regulatory Guides, 1.174 (General), 1.175 (RI-IST), 1.176 (RI-GQA), 1.177 (RITS), and 1.178 (RI-ISI (Piping)).
- October 1998: EPRI publishes "Guidelines for Preparing Risk-Informed Graded Quality Assurance Program Implementation Submittals," EPRI TR-109646.
- May 2000: NRC publishes "Assessing Risk before Maintenance Activities at Nuclear Power Plants," Regulatory Guide 1.182.
- July 2000: NEI publishes "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," NUMARC 93-01 (Revision 3).
- November 2000: EPRI publishes "Risk-Informed Integrated Safety Management Specification (RIISMS) Implementation Programs," EPRI 1000893.

Risk-Informed Applications – Some Historical Background (Continued)

- October 2001: EPRI publishes "Risk-Informed Integrated Safety Management Specifications (RIISMS) Implementation Guide," EPRI 1003116.
- April 2002: ASME publishes "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," ASME RA-S-2002.
- May 2002: EPRI agreed to support drafting a set of RITS/RMTS guidelines for eventual support of NEI RITSTF Initiative 4B applications.
- June-November 2002: EPRI developed RMTS Guidelines Drafts A-L incorporating industry (RITSTF) comments.
- October 2002: EPRI publishes "Risk-Informed Configuration-Based Technical Specifications (RICBTS) Implementation Guide, EPRI 1007321.

Risk-Informed Applications – Some Historical Background (Continued)

- November 2002: NRC issues "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," DG-1122, subsequently issued as Regulatory Guide 1.200 (For Trial Use) in 2004.
- March 2003: ANS publishes "External-Events PRA Methodology," ANSI-ANS-58.21-2003.
- November 2003: EPRI publishes "RMTS Guidelines, Interim Development Report," EPRI 1002965.
- December 2003: ASME publishes significant "Addenda" (designated RA-Sa-2003) to RA-S-2002.
- October 2004: NEI publishes its "10 CFR 50.69 SSC Categorization Guideline," NEI 00-04 (Final Draft R2).
- December 2004: EPRI publishes "RMTS Guidelines, Interim Development Report," Technical Update, EPRI 1009674.

Agenda – Meeting 10-01

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

Meeting Date/Time:	Tues, 01/19/10: 0800-1230 EST	**Chairman :**	Glen Schinzel
Location:	Clearwater Beach, FL	**Secretary:**	Yvonne Williams

Desired Outcomes:	1. Understand status/activities of each SC Working Group 2. Review Status of all SC3 standards and take any necessary action 3. Update SC3 Std master schedule 4. Determine SC3 membership requirements

WHAT (content)	WHO	WHEN (minutes)	NOTES
Welcome, Review Desired Outcomes • Meeting logistics • Safety minute • Introductions	G Schinzel All	0800-0815	
Chairman's Introduction • Opening remarks • Review/approve agenda	G Schinzel	0815-0825	
Secretary's Report • Approval of SC3 09-02 Meeting Minutes • Action Item review/status/update • SC3 membership review – validate past attendance and membership alignment • Alligator fund report	Y Williams	0825-0850	
Chairman's Report • SC3 Leadership review – succession planning • Leadership telecons • PAR / Standards status • NPEC meeting preparations	G Schinzel	0850-0900	
Vice Chairman's Report • Operations Manual – highlight one or two areas for the membership's awareness	M Sanwarwalla	0900-0910	
Ex-Officio Report • Insights from NPEC	G Ballassi	0910-0920	
BREAK	All	0920-0930	
IEEE-1819 (Risk-informed Std) • Review the work in progress slide presentation for NPEC	T Riccio	0930-0945	
Working Group Reports • WG-3.1 (Testing) • WG-3.2 (Security) • WG-3.3 (Reliability) • WG-3.4 (Aging)	T Riccio D Horvath J Liming D Horvath	0945-1000 1000-1005 1005-1020 1020-1025	
Liaison Reports • NRC Report • ASME Report	P Kang G Schinzel	1025-1030 1030-1035	
BREAK	All	1035-1045	

WHAT (content)	WHO	WHEN (minutes)	NOTES
Presentations • PRA applications • Technical	J Liming M Sanwarwalla	1045-1115 1115-1135	
Old Business • Master schedule for Std review/updates • Consider membership requirements	All	1135-1150 1150-1205	
New Business • As needed	All	1205-1215	
Review of Action Items	Y Williams	1215-1220	
Next meeting date/location	G Schinzel	1220-1225	
Meeting closeout/adjournment	G Schinzel	1225-1230	

Work in Progress Presentation – P1819

Jan. 20, 2010 (NPEC Mtg 10-1)

By Ted Riccio (WG-3.1 Chair)

"Standard for Risk-Informed Categorization and Treatment of Electrical and Electronic Equipment at Nuclear Power Generating Stations and Other Nuclear Facilities"

NPEC Work in Progress – P1819
Presentation Contents

1. History and Background
2. P1819 PAR Summary
3. Members working on the standard
4. P1819 Preliminary Table of Contents
5. Summary of Content
6. Progress
7. Current Schedule
8. Closing

NPEC Work in Progress – P1819

1. History

History of IEEE P1819

This is a new standard. The history is associated with the PAR development.

At the NPEC 04-2 meeting, the 2005-2006 NPEC Goals were approved. Goal five:

Incorporate Risk Informed Methodologies into IEEE Standards - Identify and incorporate Risk Informed Methodologies into applicable IEEE Standards.

NPEC Work in Progress – P1819

1. History (Continued)

History of IEEE P1819

Subcommittee 3 incorporated some risk into IEEE 338 which provided for risk informed test frequencies. With risk technology incorporated into one standard, NPEC asked the subcommittee to make a recommendation as to how to incorporate risk into other standards as per Goal 5. A position paper on integration of "Risk Informed Methodology" into IEEE standards was written with 3 options.

NPEC Work in Progress – P1819

1. History (Continued)

History of IEEE P1819

After discussions within the subcommittee and working groups, a determination was made that the best option was Option 3 which was presented to AdCom at the 06-2 meeting. Option 3 recommended a new standard that would complement existing standards. In addition, the need for this standard to address the categorization of equipment by safety significance was presented.

NPEC Work in Progress – P1819

1. History (Continued)

History of IEEE P1819

During subsequent meetings, a plan was formulated and a proposed PAR developed by the Working Group.

At the 09-1 subcommittee meeting, the proposed PAR was approved by the subcommittee for presentation to AdCom.

PAR is approved by AdCom and is awaiting NesCom approval, expected in March.

NPEC Work in Progress – P1819

2. PAR Summary

Scope of Proposed Standard:

This standard addresses electrical and electronic components at nuclear power generating stations and other nuclear facilities.

NPEC Work in Progress – P1819

2. PAR Summary (Continued)

Purpose of Proposed Standard:

This standard provides methods to categorize electrical and electronic components using a risk-informed process and provides the recommended treatment of categorized components commensurate with their safety significance.

NPEC Work in Progress – P1819

2. PAR Summary (Continued)

Need for the Revision Project:

This standard will address the following: Risk-informed methods have been established to appropriately categorize components as either safety significant or low safety significant. Application of these methods has been shown to be safety-beneficial for existing Nuclear Power Generating Stations and Nuclear Facilities. No standardized approach currently exists for the detailed application of these methods to electrical and electronic components. The results of the categorization process are not easily integrated with traditional Class 1E/non-Class 1E classifications or the resulting treatment for these components. This standard will provide methods to categorize electrical and electronic components using a risk-informed process and will identify how the categorization results relate to Class 1E/non-Class 1E (or important to safety/not important to safety) classifications. This standard will also provide a standardized and accepted method for treatment of categorized components commensurate with their safety significance.

NPEC Work in Progress – P1819
3. Working Group Members working on the standard:

(with balance of interest)

Gopal Aravapalli (U)	**Mansoor Sanwarwalla (P)**
John Beatty (P)	**Owen Scott (P)**
Hamid Heidarisfa (U)	**Craig Sellers (P)**
Peter Kang (G)	**Barry Sloane (U)**
Jacob Kulangara (U)	**John Stevens (P)**
Jim Liming (P)	**Yvonne Williams (U)**
Joe Napper (U)	**Kiang Zee (U)**
Ted Riccio (U)	

NPEC Work in Progress – P1819

4. Preliminary Table of Contents

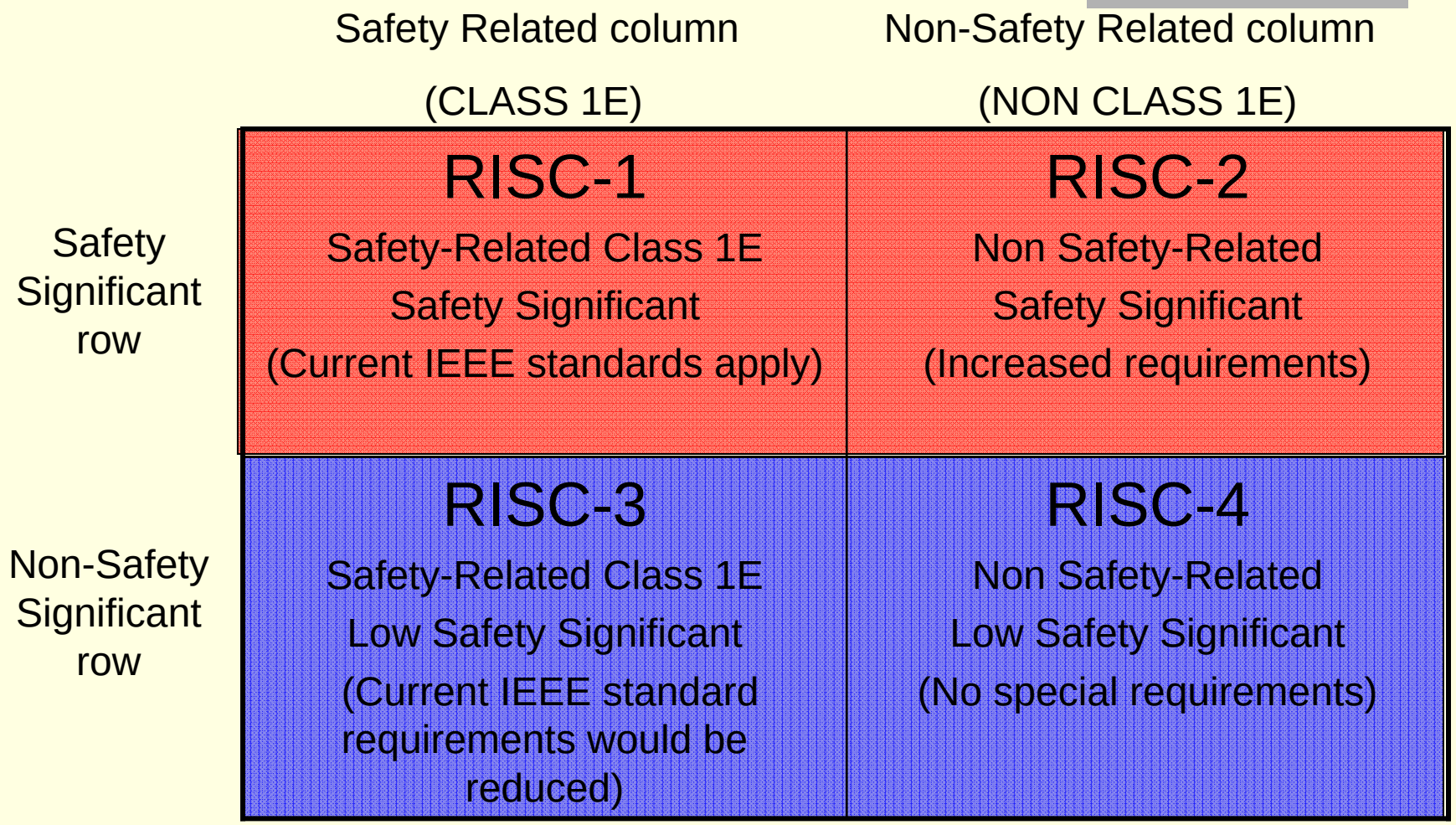
NPEC Work in Progress – P1819

5. Summary of Content

	Safety Related column (CLASS 1E)	Non-Safety Related column (NON CLASS 1E)
Safety Significant row	RISC-1 Safety-Related Class 1E Safety Significant (Current IEEE standards apply)	RISC-2 Non Safety-Related Safety Significant (Increased requirements)
Non-Safety Significant row	RISC-3 Safety-Related Class 1E Low Safety Significant (Current IEEE standard requirements would be reduced)	RISC-4 Non Safety-Related Low Safety Significant (No special requirements)

NPEC Work in Progress – P1819

5. Summary of Content (Continued)



NPEC Work in Progress – P1819

5. Summary of Content (Continued)

	Safety Related column (CLASS 1E)	Non-Safety Related column (NON CLASS 1E)
Safety Significant row	**RISC-1** Safety-Related Class 1E Safety Significant (Current IEEE standards apply)	**RISC-2** Non Safety-Related Safety Significant (Increased requirements)
Non-Safety Significant row	**RISC-3** Safety-Related Class 1E Low Safety Significant (Current IEEE standard requirements would be reduced)	**RISC-4** Non Safety-Related Low Safety Significant (No special requirements)

NPEC Work in Progress – P1819

5. Summary of Content (Continued)

	Safety Related column (CLASS 1E)	Non-Safety Related column (NON CLASS 1E)
Safety Significant row	**RISC-1** Safety-Related Class 1E Safety Significant (Current IEEE standards apply)	**RISC-2** Non Safety-Related Safety Significant (Increased requirements)
Non-Safety Significant row	**RISC-3** Safety-Related Class 1E Low Safety Significant (Current IEEE standard requirements would be reduced)	**RISC-4** Non Safety-Related Low Safety Significant (No special requirements)

NPEC Work in Progress – P1819

5. Summary of Content (Continued)

The standard will provide a means to categorize electrical and electronic equipment.

It will describe how components with different risk factors can be treated differently, according to risk. The purpose of this is to provide:

- Increased requirements for higher risk equipment which may not be classified as safety related.
- Reduced requirements for low risk equipment which would include safety related components.

NPEC Work in Progress – P1819

6. Progress

Sections are formatted according to the current IEEE template. Scope and Purpose from the proposed PAR are inputted into the template.

Rough drafts of the following sections are developed and inputted into the template:

- Applicability
- Definitions
- Corrective Actions
- Feedback and Treatment Adjustments
- Records

The other sections are under development by different subgroups.

NPEC Work in Progress – P1819

7. Schedule

Process	Action	Who	Target Date
Preparation	AdCom Approve PAR and submit to NesCom	AdCom	AdCom 09-02 NesCom 03/10
	Prepare Sections 4, 7, 8, 9	Assigned	2010
	Prepare Section 5	Assigned	2010
	Prepare Section 6	Assigned	2010
	Assemble document	Assigned	2010
Preparation	Discuss body	WG	2010
Preparation	Work in Progress – Explanation of what we are doing.	Ted	2010

NPEC Work in Progress – P1819

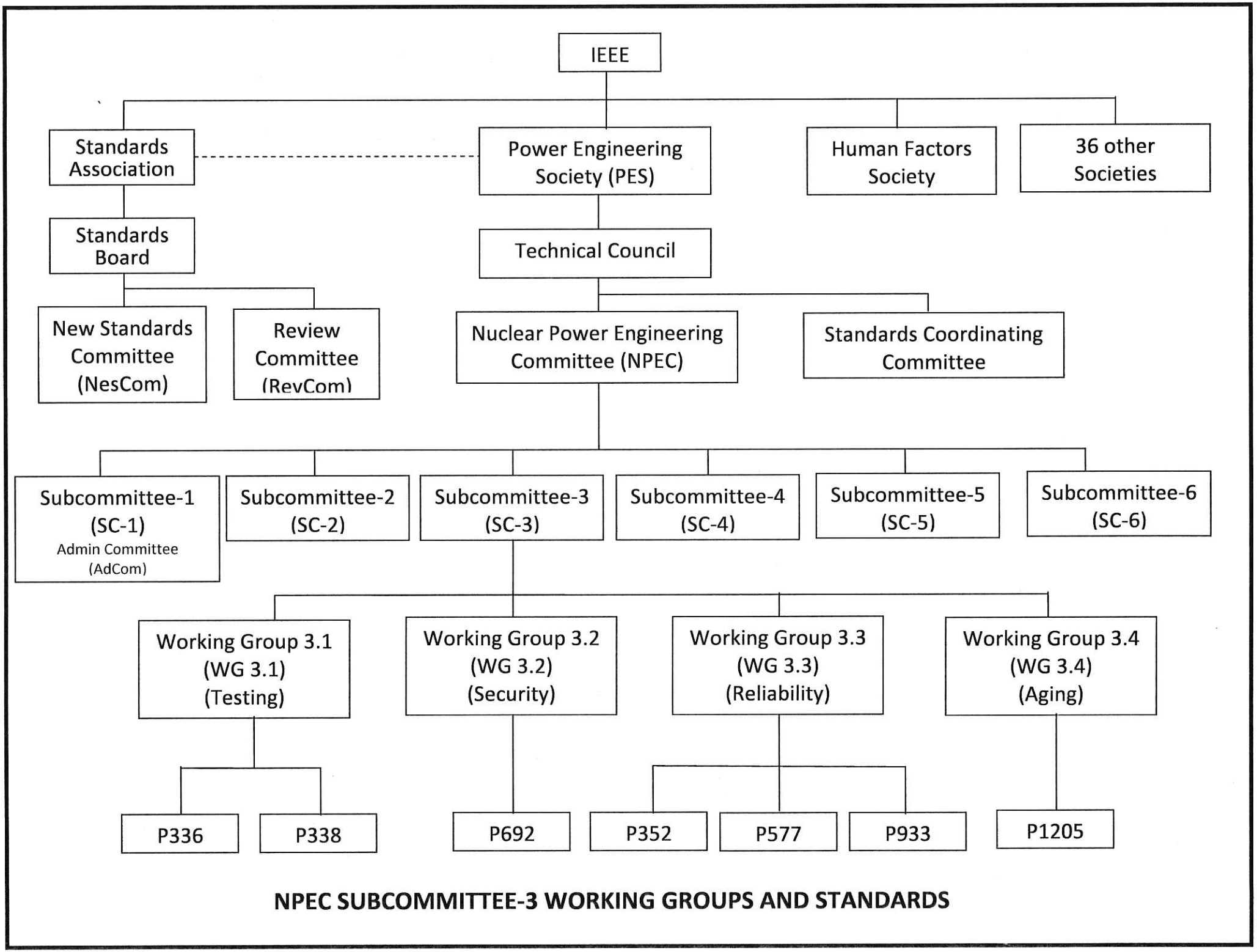
7. Schedule (continued)

Process	Action	Who	Target Date
Preparation	All updates complete and sent to Coordinator	Assigned	2010
Preparation	Approve body	WG/SC	2010
Preparation	Preview	NPEC	Early 2011
Approval	Initiate Ballot	Ballot Pool	Mid 2011
Approval	Resolution of comments	WG	Mid 2011
Approval	Recirc ballot	Ballot Pool	Late 2011
Approval	RevCom Approval	RevCom	Early 2012

NPEC Work in Progress – P1819

8. Closing

Questions?



NPEC SUBCOMMITTEE-3 WORKING GROUPS AND STANDARDS