



**IEEE NPEC Subcommittee SC-3**  
*Operations, Surveillance, Aging, Reliability & Testing*  
**Meeting 10-2 Minutes**



**Monday-Tuesday, July 19-20, 2010**  
**South Lake Tahoe, CA**

|                  |  |   |
|------------------|--|---|
| Members Present: | Gopal Aravapalli                       | Singh Matharu                                   |
|                  | George Ballassi                        | Kirk Melson                                     |
|                  | John Beatty                            | Joe Napper                                      |
|                  | Tom Crawford                           | Jim Parello                                     |
|                  | Sharon Honecker                        | Ted Riccio                                      |
|                  | Peter Kang                             | Glen Schinzel (Chair)                           |
|                  | Jim Liming                             | Yvonne Williams (Secretary)                     |
| Members Absent   | Ali Daneshpooy                         | Owen Scott                                      |
|                  | Rachel Gunnett                         | Craig Sellers                                   |
|                  | Hamid Heidarisaafa                     | Barry Sloane                                    |
|                  | David Horvath                          | John Stevens                                    |
|                  | Jacob Kulangara                        | John Taylor (corresponding)                     |
|                  | Bob Lane                               | Kiang Zee                                       |
|                  | Mansoor Sanwarwalla (Vice Chair)       |   |
| Guests           | Suresh Channarasappa from Westinghouse | Hanh Phan from NRC<br>Michael Wylie from Advent |

**Agenda Items 1 and 2 -- Welcome, Desired Outcomes, Chair's Introduction**

Chair Glen Schinzel called the meeting to order at 11:00 am. He went through the meeting logistics and identified that Satish Aggarwal has asked for some time to walk through the NPEC goals.

Safety in meeting room -- be careful with tripping hazards; directions for where to go in case of a fire alarm.

Glen then walked through the agenda, and some items will be shifted around based on the opportunity to start a little early. He is looking for feedback on the scheduling for SC-3 and the working groups for the two days. Agenda was accepted as presented (George motion, Jim Liming second). The agenda is included as an attachment and is annotated with the item numbers used here, generally in the order of discussion.

**Agenda Item 2A -- NPEC Goals**

Satish Aggarwal discussed the NPEC goals for his term as NPEC Chair, as shown in handout (attached). He thanked us for our participation and support. One of the focus points is the use of our standards worldwide. He wants to make participation easier through letters encouraging our management to support the meetings, signature by the NPEC Chair and maybe the IEEE president. If one of these letters might help get us support for the meetings, we should send Satish an email identifying whom to sent it to. NPEC is sending letters to the utilities and

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

architect-engineers encouraging support for participation. Regarding the NPEC standards, he identified that any standards older than 2007 (regardless of reaffirmation date) must be revised or reaffirmed by the end of his term in 2012. Regarding the standards SC-3 received from other working groups, if we need help in meeting this goal, we should send Satish an email a list of people needed and he will go through companies to get more participation. Ted asked that meetings be planned for locations that are more accessible and less expensive. For 2012, the meetings are currently planned for San Antonio and (tentatively) Orlando, with the human factors meeting. Ted also identified that sometimes companies will make meeting rooms available. Satish encouraged the members to bring their own equipment, as a way to cut costs. He also identified a need to focus on digital I&C; using IEC standards is an option. With joint-logo standards, compromises are needed, and we are encouraged to work with the IEC and IAEA as possible. He also encouraged us to find industry experts to help, and to develop new engineers in standards participation as well. In summary, we need to focus on revising or reaffirming any standard with an issue date of 2007 or earlier; while there may be problems, he encouraged us to bring solutions to those problems as well.

**Agenda Item 3 -- Secretary's Report**

SC-3 10-1 meeting minutes were provided. A request was made to have the minutes provided for review earlier. Corrections were provided on the attendance spreadsheet. Meeting minutes were accepted as amended (Jim Parello motion, Tom Crawford second). Putting the minutes up on the SC-3 website will require pulling out the attachments separately, as the combined file does not provide the attachments.

Action items status was provided, with some discussion. The status, including updates from this meeting, is provided in an attachment. Updates based on the leadership telecons between meetings are also shown.

The persons who have not attended lately were discussed to identify whether they should be retained on the roster. The consensus is that Barry Sloane, Craig Sellers and Ali Daneshpoo have not made contributions, and should be dropped as members. Barry Sloane attended one meeting as a substitute for Kiang Zee, and probably should not have been entered on the roster. These persons will be dropped from the roster (Yvonne), and an email will be sent to them identifying that they have been removed and can be reinstated if they are willing to participate and support the subcommittee (Glen and Yvonne). If the WG chairs want to get these persons to help with the WGs, then that is acceptable also. Membership in the WGs is up to the chairs; the WG membership is not addressed in the Operating Manual.

Membership types were discussed. The types per our Operating Manual are regular (voting), corresponding and honorary. Glen detailed the types as presented in the SC-3 Operating Manual. Member -- IEEE members who have expressed an interest and actively participate in the SC / WG activities, and non-IEEE members who have expertise that can enhance the SC capabilities and actively participate. Honorary -- distinguished by knowledge and expertise in SC-3 matters, not able to regularly attend meetings, still get emails to keep them in the loop for the SC. Corresponding -- SC can utilize their expertise, persons should participate in SC activities, but they are unable to regularly attend the meetings. The agreed distinction between these last types is that corresponding members are expected to actively participate in telecons and on products,

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

while honorary members are not. Jim Parello noted that for SC-2, active membership for three years is required for consideration as a corresponding member.

While John Taylor could easily fit into the honorary membership type, he wants to maintain corresponding membership and has actively assisted Ted with tasks. Potential corresponding members could be Jacob Kulangara (1 of last 6 meetings) and Kiang Zee (3 meetings); after discussion, they will be retained as active members. On the roster, Yvonne will split out the names by the membership types (active, corresponding, honorary).

The classifications for the members were then discussed -- Academic, General Interest, Government / Military, User, Producer. The meanings of the classifications as provided on the IEEE website were read, and Glen provided his perspective on the distinction between User and Producer. If a person produces a service or product, then the category is Producer; if a person is working for a utility either directly or in a seconded role, then the category is User. On that basis, the members indicated what classification they fall into; the member roster is provided as an attachment, including the classification and membership information (SC-3, working groups, other NPEC information). Guests for this meeting are reflected on that roster as well.

The alligator fund status is provided as an attachment. The expenses and amount collected were detailed from the last meeting. It was recommended that NPEC negotiate for free internet access in the meeting rooms, as an aid to companies allowing persons to attend the meetings and still be available to answer e-mails. Since the internet access is expensive here, Yvonne will try to cancel the internet for tomorrow to save that money. Glen brings a projector that we are able to use for the meetings, but the screen is still an issue and potential cost. An action item was assigned to Yvonne to investigate options for purchasing a screen for SC-3 usage, rather than paying the hotel for screen usage; discussion will resume at next meeting on this issue. For this meeting, Ted borrowed a screen and the membership concurred that he should use \$25 from the alligator fund to get the person a gift card in appreciation.

**Agenda Item 4 -- Chair's Report**

Succession planning -- Glen indicated that generally SC-3 has followed the NPEC manner of progression (from secretary to vice-chair to chair), but we have not yet identified the timeframe. Since there are three positions, and three years in each would be a 9-year commitment, it was agreed that 2 years should be the length in each position. Because of other commitments, Glen is having a much harder time keeping up with the role of chair, and he could only commit to another six months. General approach for progression is that the secretary moves to vice-chair who moves to chair, and the term in each position is two years; this guidance should be considered for the Operating Manual. Yvonne indicated that she is not sure that she can commit to the 4 years remaining, and since she took over as secretary from Ted only a year ago, she is willing to continue as secretary for the next 2 years. As Mansoor is not here this meeting due to a conflict, Glen will discuss the transition with him and establish whether the transition will be at the beginning or end of the 11-1 meeting. Volunteers were requested for the leadership roles; no one stepped forward. Glen encouraged the members to look at the duties in the operating manual and contact him so that continued leadership of the SC can be ensured.

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

**Agenda Item 5 -- Liaison Reports**

Liaison reports for ASME and NRC are attached.

Regarding ASME -- the ASME looks at standards critically to see if they are still needed or not, to make sure that the needs of industry are being met. NPEC is a member of NRMCC, and it may be appropriate to get feedback to SC-3 from NRMCC (through the NPEC vice-chair). Glen will look to see if this feedback is available and appropriate to feed to SC-3.

NRC -- North Anna 3 is switching from ESBWR to US-APWR. Smart grid is becoming a hot topic at NRC. Next time, Peter will include NRR information and PRA information of interest.

**Agenda Item 6 -- Standards Development Process**

George Ballassi presented the standards development process by using the NPEC and IEEE webpages. The following is a rough approximation of where George took us, and serves as a guide for personal exploration later.

NPEC home page is <http://grouper.ieee.org/groups/npec/index.html>. [This is also the page to start at to get to SC-3 website – click on Subcommittees, enter npec and nukestd09 and navigate to SC-3.] Click on “NPEC Standards” button at top to get to a page that gives links to the NPEC standards schedule and status, hierarchical relationship of NPEC standards, information on balloting approach, and a link to Standards Development Guidance (as of date writing these minutes, the last link is the only one without an error on page), which goes to the policies subpage. Back up one page to <http://standards.ieee.org/develop/> to see the overall information on standards development and to see the lifecycle, where articles on each stage can be found.

Standards are initiated (for initial issuance or for revision) by a Project Authorization Request (PAR). The PARs are reviewed by NPEC and NesCom (New Standards Committee) for approval to do the work. Then a Working Group is developed to draft the standard. The IEEE standards template and Style Manual must be used in production of the standard (Drafting the Standard). There is a mandatory editorial review by IEEE that must occur during this stage. One point is that there are normative annexes and informative annexes. The normative annexes are officially part of the standard and are requirements of the standard. Informative annexes are not part of the requirements of the standard -- they are information for the user only. Jim Parelo noted that the NRC may still question licensees if they are not following the informative annexes. He noted that SC-2 generates a white paper for all standards revisions, discussing what was changed and why.

A question was asked about version controls in the drafts of the standard. The template has the tools for designating the draft version, but there are no specific requirements in the style manual about how the draft versions are to be controlled for a particular stage.

After review and approval by the working group and subcommittee (in this case, SC-3), the produced standard goes to NPEC, who reviews and gives approval for the standard to go to ballot (The Balloting Process). The WG chair enters My Project and submits an Invitation Request for the ballot pool. Note that when an individual signs up for the Standards Association

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

(to be able to vote), he/she indicates interests and that determines what invitations are sent for ballot pools. A person can also go into My Project and look at “show/join open ballot invitations” to elect into more ballot pools. The ballot pool needs to be balanced, to have members of the various classifications (Academic, Government/Military, General Interest, User, Producer) and Paul Yanosy is the NPEC member who looks at the ballot pool balance.

During the balloting, members of the ballot pool use My Project website to provide their vote and comments. That site can also be used to manage the working group roster (SC-3 is not using this feature now). The WG reviews the votes and responds to the comments. Typically the standard then goes on recirculation ballot to validate that the comments were all properly resolved and ballot pool agrees that the standard is ready for final approval. The last stages are Final Approval and Publish; if further changes are not needed but the 5-year cycle demands revision or reaffirmation, then the standard is balloted for reaffirmation.

The entire process requires various approvals (by the WG, the SC, NPEC, etc.) so one should be careful not to hit the Submit button without those approvals.

Members can navigate the details themselves to get more information and more familiar with the processes involved in the standard lifecycle.

**Agenda Item 7 -- IEEE 338 Work in Progress presentation for NPEC**

Ted Riccio presented the IEEE 338 Work in Progress presentation intended for NPEC meeting for SC-3 comments and approval. The current PAR only addresses nuclear power generating stations. We are adding information in the introduction identifying that other nuclear facilities can use the standard. There was discussion on revising the PAR to address other facilities, but the consensus was not to change it for this revision. Sections for on-line monitoring are a significant addition to the standard; this monitoring examines the sensor outputs continuously and allows longer surveillance intervals. Comments were provided to Ted during his presentation. The target is to preview the standard at NPEC 11-1 meeting. Before that meeting, the WG needs to ensure agreement with the wording in the standard.

**Agenda Item 8 -- Working Group reports**

Mike Wylie provided the reports for WG 3.2 and 3.4 in the absence of Dave Horvath. For WG 3.2, IEEE 692 was published in Feb 2010; therefore the WG is now idle. For WG 3.4, the efforts are initiating a reaffirmation for IEEE 1205 and initiating a PAR for the next revision. This may present problems with the NPEC goal of dates no earlier than 2007. See last paragraph this item.

Ted Riccio for WG 3.1 – IEEE 336 was just approved for issue, 338 is being revised, and 1819 is being drafted.

Jim Liming for WG 3.3 -- IEEE 352 was reaffirmed in early 2010; 577 is in resolution of comments, and Jim will go through the resolutions in WG meeting to ensure WG approval; the 933 PAR was approved in March 2010, and work is progressing to issuance goal of Dec 2012. The NPEC goal impacts Std 352.

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

Glen will validate the NPEC goal, whether the stamp date needs to be 2007 or later, or whether the reaffirmation can be 2007 or later. On Tuesday, Glen identified that the NPEC goal is based on the revision date on a standard. If the date is 2007 or earlier, then the standard should be revised. The reaffirmation date is irrelevant.

**Agenda Item 9 -- Ex Officio Report**

George Ballassi stated that it is good that Satish came in to identify the NPEC goals. There are collaboration efforts ongoing with IEC on IEEE 323. The intent is for IEEE 323 and IEC 60718 to be different documents but say the same thing (harmonization process). For “co-logo” standards, IEC seems to want to override the IEEE designation and not show IEEE on the cover sheet. There is definitely more clarification needed on the IEC/IEEE collaboration.

**Agenda Item 10 -- Operations Manual**

The Rev 1 version of the Operations Manual was reviewed with track changes on. The title of SC-3 was discussed, with agreement that it should read Operations, Surveillance, Aging, Reliability and Testing, to better reflect the responsibilities of the group. Action to get the name changed on the NPEC website is assigned to Yvonne.

Standards 500 and 934 have been deleted from the purview of SC-3. The balance of interest categories were aligned with the IEEE policies. Glen went through the remainder of the changes briefly.

Requirements for membership were read and discussed. Section 3.1.4 should be reworked as a separate item. Honorary vs corresponding membership was discussed. The consensus (that should be reflected in the Manual) is that a corresponding member is engaged, contributing, helping, etc. but just not able to attend the meetings. An honorary member is a long term member and contributor, but no longer actively engaged in the subcommittee; they can be a source for historical information, procedural guidance, technical guidance, etc. While an honorary member continues to receive the SC emails, there are no expectations of work received from the member. The honorary member could be a source of guidance, historical information, and technical help though. Section 3 needs more information and better grouping of information.

While the responsibilities for the Chair are listed and rather extensive, any duties of the Vice Chair are not listed. Glen has assigned the Operations Manual and the listing of standards to the Vice Chair. Secretary duties are also listed.

The succession information is embedded in the OPM section for duties, with an expectation of moving from Secretary to Vice Chair to Chair. However, this is not a hard obligation.

Section 4.4 for membership responsibilities could be beefed up, and combined with the earlier section on membership. Meeting dates are identified as twice a year.

Section 6.1 identifies quorum of 50% for subcommittee activities. Section 6.3 states that SC-3 products require 3/4 approval of the voting membership. This could be difficult if meeting is lightly attended (needing to get votes via email), and it is not known where this requirement came from. This may have come from the NPEC manual.

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

Glen asked that a vote be taken on Revision 1 (the other issues identified will be addressed in next revision). We have more than 50% of the membership present, thus a quorum as required for general business. Jim Liming moved that Revision 1 be approved, Tom Crawford seconded. The motion passed.

An action was assigned to Mansoor to (1) get the Rev 1 version out to the members for them to look at, with the changes shown; (2) begin work on Rev 2. All members should review the 7 pages in the manual and provide comments and suggestions to Mansoor. Mansoor is to form a subgroup to work on the next revision.

According to Jim Parello, there may be a need also for WG operating procedures, and we could be audited to a Standards Association document for working group requirements. Jim volunteered to work with Mansoor on the OPM.

**Agenda Item 11 – 5-Year Strategic Plan for SC-3 Standards**

The PAR/Standards spreadsheet was used for this portion of the meeting. The meanings of the colors were identified. The red standards are 577 and 933, both 2004; these are progressing now. The remaining standards are green based on the 5-year requirement. The standards with a year stamp older than 2007 are 338 (being revised now), 352 and 1205; these need to be revised to meet the NPEC goals.

Milestones (targets) for the standards were reviewed, with legend for colors also. The schedule for IEEE 338 looks like it might be tight on the 5-year target. Information for the schedule needs revalidation; after that validation (Glen, Jim, Dave, Ted), it will be sent to Yvonne for inclusion in the minutes. This update will address the new NPEC goals. NPEC recognizes that a number of PARs will come to them to support these new goals. There was some concern that these NPEC goals will require effort to be expended on standards that perhaps need little to no work, diluting the effort of revising standards that need extensive work.

Glen asked again that new members -- young engineers and international members especially -- be recruited for joining SC-3 or helping WGs, even as corresponding members; Satish may be able to encourage employers to support the work financially. In particular, categories of Academia, Govt/Military, General Interest and User could be strengthened. If international members are recruited, a question easily comes to mind regarding voting rights, since it is hard to travel to meetings. Perhaps the international members could have voting rights.

**Agenda Item 12 -- New Business**

Lapel pins -- Ted Riccio passed around a webpage printout. If interested, a member should add his/her name and Ted will coordinate getting them. The cost is \$18; these are nice to have but certainly not a requirement. Jim Parello motioned that the pins be provided through the alligator fund; the motion was seconded. After discussion, the item was withdrawn and tabled to the next meeting. The website showing information on the pins is [http://www.ieee.org/documents/Member Pin Order Form.pdf](http://www.ieee.org/documents/Member_Pin_Order_Form.pdf).

**IEEE NPEC Subcommittee SC-3**  
***Operations, Surveillance, Aging, Reliability & Testing***  
**Meeting 10-2 Minutes**

Suresh Channasarappa from Westinghouse has now attended two meetings; his expertise is in digital I&C, and his category would be Producer. He is a member of other SCs and WGs, and is particularly interested in IEEE 1205. Yvonne motioned that Suresh be a member of SC-3, with Jim Parello seconding. The motion passed and Glen welcomed him to SC-3. The next effort for the WG chairs is to get him into a WG or two.

IEEE chart showing the relationship to SC-3 (from Gopal) was reviewed; this chart is an excellent pictorial representation for where we fit. This could be added as an appendix to the Operations Manual. The new standard (1819) should be included and the P designations should be deleted. Titles for the subcommittees should also be added. Identification of which standards are full standards, which are recommended practices, which are guides, should also be added.

**Agenda Item 13 -- Action Items**

The action items are included as an attachment.

**Agenda Item 14 -- Upcoming Meetings**

11-1 Jan 24-25, 1011 (NPEC Jan 26) Paradise Doubletree, Scottsdale AZ

11-2 July 25-26, 2011 (NPEC July 27) Marriott, Dana Point CA (south of Irvine and Los Angeles)

The subcommittee business completed, George Ballassi motioned to adjourn, seconded by Tom Crawford, motion passed. Adjournment at 9:35 am.

Prepared by Yvonne Williams SC-3 Secretary.

**IEEE NPEC Subcommittee SC-3**  
**Operations, Surveillance, Aging, Reliability & Testing**  
**Meeting 10-2 Minutes**

ATTACHMENTS

Double-click on the icons to pull up the attachment

| Attachment 1<br>Agenda  | Attachment 2<br>NPEC Goals  | Attachment 3<br>Rolling Attendance   |
|---|---|--|
| <br>SC3<br>Agenda_1002.pdf                   | <br>10-2 NPEC Goals.pdf                  | <br>10-2 rolling<br>attendance.pdf    |
| Attachment 4<br>SC-3 Membership<br>(late 2010 version)  | Attachment 5<br>Action Items  | Attachment 6<br>Alligator Fund   |
| <br>Roster spreadsheet<br>2010-9.xls         | <br>action items for<br>minutes 10-2.xls | <br>10-2 alligator<br>fund.xls        |
| Attachment 7<br>SC-3 PAR / Standards  | Attachment 8<br>NPEC / SC-3 Chart   | Attachment 9<br>ASME Liaison Report  |
| <br>SC-3 Standards<br>Status and Schedule_ | <br>NPEC SC-3 Chart<br>R0.docx          | <br>ASME Liaison Report<br>0710.doc |
| Attachment 10<br>NRC Liaison Report   | Attachment 11<br>SC-3 Report to NPEC  | Attachment 12<br>IEEE 338 Work in<br>Progress Presentation   |
| <br>NRC Liaison Report<br>(7-18-10R).doc   | <br>SC3 NPEC<br>Report_072110.doc      | <br>P338-WIP-NPEC-Jul2<br>010.ppt   |

## Agenda – Meeting 10-02

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

|                            |  |                   |                 |
|----------------------------|--|-------------------|-----------------|
| <b>Meeting Dates/Time:</b> | Mon, 07/19/10: 1300-1700 PDT<br>Tue, 07/20/10: 0730-0930 PDT | <b>Chairman :</b> | Glen Schinzel   |
| <b>Location:</b>           | Embassy Suites – Nevada Room<br>South Lake Tahoe, CA 96150   | <b>Secretary:</b> | Yvonne Williams |

|                          |   |
|--------------------------|---|
| <b>Desired Outcomes:</b> | <ol style="list-style-type: none"> <li>1. Understand status/activities of each SC Working Group</li> <li>2. Review Status of all SC3 standards and take necessary actions</li> <li>3. Update SC3 Standard master schedule</li> <li>4. Update SC3 membership roster, requirements</li> <li>5. Enhance understanding of the standard development process</li> </ol> |
|--------------------------|---|

|    | WHAT<br>(content)  | WHO  | WHEN<br>(minutes)                                | NOTES |
|----|--|--|--|-------|
| 1  | Welcome, Review Desired Outcomes <ul style="list-style-type: none"> <li>• Meeting logistics</li> <li>• Safety minute</li> <li>• Introductions</li> </ul>   | G Schinzel<br><br>All                          | 1300-1315  |       |
| 2  | Chairman's Introduction <ul style="list-style-type: none"> <li>• Opening remarks</li> <li>• Review/approve agenda</li> </ul>   | G Schinzel                                     | 1315-1325  |       |
| 3  | Secretary's Report <ul style="list-style-type: none"> <li>• Approval of SC3 10-01 Meeting Minutes</li> <li>• Action Item review/status/update</li> <li>• SC3 membership review – validate past attendance and membership alignment</li> <li>• Alligator fund report</li> </ul> | Y Williams                                     | 1325-1350  |       |
| 4  | Chairman's Report <ul style="list-style-type: none"> <li>• SC3 Leadership review – succession planning</li> <li>• Leadership telecons</li> <li>• PAR / Standards status</li> <li>• NPEC meeting preparations</li> </ul>  | G Schinzel                                     | 1350-1410  |       |
| 10 | Vice Chairman's Report <ul style="list-style-type: none"> <li>• Operations Manual – highlight updates, approve</li> </ul>  | M Sanwarwalla<br>(in absentia)                 | 1410-1420  |       |
| 9  | Ex-Officio Report <ul style="list-style-type: none"> <li>• Insights from NPEC</li> </ul>   | G Ballassi                                     | 1420-1430  |       |
|    | BREAK  | All  | 1430-1440  |       |
| 8  | Working Group Reports <ul style="list-style-type: none"> <li>• WG-3.1 (Testing)</li> <li>• WG-3.2 (Security)</li> <li>• WG-3.3 (Reliability)</li> <li>• WG-3.4 (Aging)</li> </ul>  | T Riccio<br>D Horvath<br>J Liming<br>D Horvath | 1440-1455<br>1455-1505<br>1505-1520<br>1520-1525 |       |
| 5  | Liaison Reports <ul style="list-style-type: none"> <li>• NRC Report</li> <li>• ASME Report</li> </ul>  | P Kang<br>G Schinzel                           | 1525-1535<br>1535-1540                           |       |
| 7  | IEEE-338 (Periodic Surveillance Testing) <ul style="list-style-type: none"> <li>• Review work in progress presentation for NPEC</li> </ul>   | T Riccio                                       | 1540-1605  |       |
|    | BREAK  | All  | 1605-1615  |       |

|          | <b>WHAT<br/>(content)</b>  | <b>WHO</b>                     | <b>WHEN<br/>(minutes)</b>           | <b>NOTES</b> |
|----------|--|--------------------------------|-------------------------------------|--------------|
| 11       | 5-yr Strategic Plan for SC3 Standards <ul style="list-style-type: none"> <li>Develop/update plan</li> </ul>  | M Sanwarwalla<br>(in absentia) | 1615-1650                           |              |
|          | Review action items – discuss agenda for Tuesday   | G Schinzel                     | 1650-1655                           |              |
|          | Plus/Deltas for Monday – Adjourn for Day   | G Schinzel                     | 1655-1700                           |              |
|          | <b>Tuesday, July 20</b>  |                                |                                     |              |
|          | Welcome, Review Desired Outcomes <ul style="list-style-type: none"> <li>Meeting logistics</li> <li>Safety minute</li> </ul>  | G Schinzel                     | 0730-0735                           |              |
| 6        | Presentation <ul style="list-style-type: none"> <li>Standard development process – the life cycle</li> </ul>   | G Ballassi                     | 0735-0815                           |              |
| w/<br>11 | Proposed NPEC Goals for 2011-2012 <ul style="list-style-type: none"> <li>Obtain feedback from SC</li> <li>Provide recommendation to NPEC</li> </ul>                        | All                            | 0815-0830                           |              |
| 12       | New Business <ul style="list-style-type: none"> <li>IEEE Org Chart – relationship to SC3</li> <li>IEEE Lapel Pins</li> <li>Other new business?</li> </ul>                  | G Aravapalli<br>T Riccio       | 0830-0845<br>0845-0850<br>0850-0900 |              |
|          | Strategic Discussion on Actions prior to next meeting <ul style="list-style-type: none"> <li>Align on actions expected to be accomplished prior to next meeting</li> </ul> | WG Chairs                      | 0900-0920                           |              |
| 13       | Review of Action Items   | Y Williams                     | 0920-0924                           |              |
| 14       | Next meeting date/location   | G Schinzel                     | 0924-0927                           |              |
| 15       | Meeting closeout/adjournment   | G Schinzel                     | 0927-0930                           |              |

### NPEC GOALS FOR 2011-2012

1. Concentrate efforts in revising and updating **all** NPEC standards.
2. Develop new standards in the instrumentation & control area, including digital.
3. Publish a minimum of eight joint-logo International Electrotechnical Commission/Institute of Electrical and Electronic Engineers standards. Continue efforts in harmonizing nuclear safety standards, including close coordination with the International Atomic Energy Agency on safety guides.
4. Solicit participation by technical experts in working groups and subcommittees from those with nuclear expertise outside the U.S. to make NPEC a truly international technical committee.
5. Solicit participation from young engineers in working groups and/or subcommittees.

Attendance at SC-3 Meetings

| Last   | First          | 2008-01 | 2008-02 | 2009-01 | 2009-02 | 2010-01 | 2010-02 |
|--|----------------|---------|---------|---------|---------|---------|---------|
| <b>Aravapalli</b>                                | <b>Gopal</b>   |         |         | x       | x       | x       | x       |
| <b>Ballassi</b>                                  | <b>George</b>  | x       | x       | x       | x       | x       | x       |
| <b>Beatty</b>                                    | <b>John</b>    |         | x       | x       | x       | x       | x       |
| <b>Channarasappa</b>                             | <b>Suresh</b>  |         |         |         | x       | x       | x       |
| <b>Crawford</b>                                  | <b>Tom</b>     | x       |         | x       | x       |         | x       |
| Daneshpooy                                       | Ali            | x       |         |         |         |         |         |
| Gradin   | Larry          |         |         |         | x       |         |         |
| <b>Gunnett</b>                                   | <b>Rachel</b>  | x       |         | x       | x       |         |         |
| <b>Heidarisaifa</b>                              | <b>Hamid</b>   |         | x       | x       | x       | x       |         |
| <b>Honecker</b>                                  | <b>Sharon</b>  |         | x       | x       | x       | x       | x       |
| <b>Horvath</b>                                   | <b>Dave</b>    |         | x       | x       |         | x       |         |
| <b>Kang</b>                                      | <b>Peter</b>   | x       | x       |         | x       | x       | x       |
| Koshy  | Tom            |         |         |         |         | x       |         |
| <b>Kulangara</b>                                 | <b>Jacob</b>   |         |         |         |         | x       |         |
| <b>Lane</b>                                      | <b>Bob</b>     |         |         |         |         | x       |         |
| <b>Liming</b>                                    | <b>Jim</b>     | x       | x       | x       | x       | x       | x       |
| Lynn   | Kevin          |         |         |         |         | x       |         |
| <b>Matharu</b>                                   | <b>Singh</b>   |         |         |         |         | x       | x       |
| <b>Melson</b>                                    | <b>Kirk</b>    |         |         |         | x       | x       | x       |
| Miller   | Ken            |         |         | x       |         |         |         |
| <b>Napper</b>                                    | <b>Joe</b>     |         | x       |         | x       | x       | x       |
| <b>Parello</b>                                   | <b>Jim</b>     | x       | x       | x       | x       | x       | x       |
| Phan   | Hanh           |         |         |         |         |         | x       |
| <b>Riccio</b>                                    | <b>Ted</b>     | x       | x       | x       | x       | x       | x       |
| Rusaw  | Richard        |         |         |         |         | x       |         |
| <b>Sanwarwalla</b>                               | <b>Mansoor</b> | x       | x       | x       | x       | x       |         |
| <b>Schinzal</b>                                  | <b>Glen</b>    | x       | x       |         | x       | x       | x       |
| <b>Scott</b>                                     | <b>Owen</b>    | x       | x       |         | x       |         |         |
| Sellers  | Craig          | x       |         |         |         |         |         |
| Sloane   | Barry          |         |         | x       |         |         |         |
| <b>Stevens</b>                                   | <b>John</b>    | x       | x       | x       | x       |         |         |
| Taylor   | John           |         |         |         |         |         |         |
| <b>Williams</b>                                  | <b>Yvonne</b>  | x       | x       | x       | x       | x       | x       |
| Wylie  | Mike           |         |         |         |         |         | x       |
| <b>Zee</b>                                       | <b>Kiang</b>   | x       | x       |         | x       |         |         |
| members in <b>bold</b> as of end of 10-2 meeting |                |         |         |         |         |         |         |
| TOTAL ATTENDEES                                  |                | 15      | 16      | 17      | 21      | 22      | 17      |

NPEC Subcommittee SC-3  
Operations, Surveillance, Aging, Reliability and Testing  
Subcommittee / Working Group Membership Lists

| Name                     | Category*           | Company                                       | Address                              | Phone/Fax  | email      | SC-3 | WG-3.1 | WG-3.2 | WG-3.3 | WG-3.4 | NPEC | Other                            |
|--------------------------|---------------------|---|--------------------------------------|------------|------------|------|--------|--------|--------|--------|------|----------------------------------|
| ARAVAPALLI, GOPAL        | User                | Engineering Projects<br>Fermi Power Plant     | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| BALLASSI, GEORGE A.      | Govt /<br>Military  | GENERAL DYNAMICS /<br>ELECTRIC BOAT CORP.     | [REDACTED]                           | [REDACTED] | [REDACTED] | PC   | M      |        | M      | M      | S    |                                  |
| BEATTY, JOHN             | Producer            | WESTINGHOUSE<br>ELECTRIC CO., LLC             | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| CHANNARASAPPA,<br>SURESH | Producer            | WESTINGHOUSE                                  | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        |        |        |      |                                  |
| CRAWFORD, TOM            | Producer            | HURST TECHNOLOGIES<br>CORP.                   | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| GUNNETT, RACHEL B.       | Producer            | ADVENT, a TETRA TECH<br>Company               | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | S      |        | M      | M      |      |                                  |
| HEIDARISAFI, HAMID R.    | User                | AMERICAN ELECTRIC<br>POWER                    | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| HONECKER, SHARON         | General<br>Interest | RELIASOFT<br>CORPORATION                      | [REDACTED]                           | [REDACTED] | [REDACTED] | M    |        |        | M      |        |      |                                  |
| HORVATH, DAVID A.        | Producer            | ADVENT, a TETRA TECH<br>Company               | [REDACTED]                           | [REDACTED] | [REDACTED] | PC   | M      | C      | M      | PC     | M    |                                  |
| KANG, PETER J.           | Govt /<br>Military  | US NUCLEAR<br>REGULATORY<br>COMMISSION        | Office Of New Reactors<br>[REDACTED] | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| KULANGARA, JACOB         | Producer            | BECHTEL                                       | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| LANE, ROBERT             | Producer            | ATC NUCLEAR                                   | [REDACTED]                           | [REDACTED] | [REDACTED] | M    |        |        |        |        |      |                                  |
| LIMING, JAMES K.         | Producer            | ABSG CONSULTING INC.<br>(ABS CONSULTING)      | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | C      |        | M    |                                  |
| MATHARU, G. SINGH        | Govt /<br>Military  | US NUCLEAR<br>REGULATORY<br>COMMISSION        | NRC/NRR/EEB (12C12)<br>[REDACTED]    | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| MELSON, KIRKLYN          | Producer            | EXCEL SERVICES CORP.                          | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| NAPPER, JOSEPH           | User                | URS WASHINGTON<br>DIVISION                    | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                                  |
| PARELLO, JAMES           | Producer            | WESTINGHOUSE<br>ELECTRIC CO., LLC             | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | M      |        | M      |        | M    | SC-2 (C)<br>WG-2.1<br>WG-2.5 (C) |
| RICCIO, TED              | User                | SOUTH TEXAS PROJECT<br>(retired) / CONSULTANT | [REDACTED]                           | [REDACTED] | [REDACTED] | M    | C      |        | M      |        | M    |                                  |

NPEC Subcommittee SC-3  
Operations, Surveillance, Aging, Reliability and Testing  
Subcommittee / Working Group Membership Lists

| Name                    | Category* | Company  | Address                                 | Phone/Fax  | email      | SC-3 | WG-3.1 | WG-3.2 | WG-3.3 | WG-3.4 | NPEC | Other                     |
|-------------------------|-----------|--|---|------------|------------|------|--------|--------|--------|--------|------|---------------------------|
| SANWARWALLA, MANSOOR H. | Producer  | SARGENT & LUNDY                                | [REDACTED]                              | [REDACTED] | [REDACTED] | VC   | M      |        | S      | M      | M    |                           |
| SCHINZEL, GLEN E.       | User      | STARS (Strategic Teaming And Resource Sharing) | STP Nuclear Operating Co.<br>[REDACTED] | [REDACTED] | [REDACTED] | C    | M      |        | M      |        | M    | SC-2<br>WG-2.1<br>WG-2.10 |
| SCOTT, OWEN             | User      | SOUTHERN NUCLEAR CO.                           | Southern Nuclear Co.<br>[REDACTED]      | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                           |
| STEINMAN, REBECCA L.    | Producer  | ADVENT, a TETRA TECH Company                   | [REDACTED]                              | [REDACTED] | [REDACTED] |      |        |        |        | C      |      |                           |
| STEVENS, JOHN A.        | Producer  | EMERSON POWER & WATER SOLUTIONS                | [REDACTED]                              | [REDACTED] | [REDACTED] | M    | M      |        | VC     |        |      |                           |
| WILLIAMS, YVONNE        | Producer  | BECHTEL NATIONAL                               | [REDACTED]                              | [REDACTED] | [REDACTED] | S    | M      |        | M      |        |      |                           |
| ZEE, KIANG              | Producer  | ERIN ENGINEERING AND RESEARCH, INC.            | [REDACTED]                              | [REDACTED] | [REDACTED] | M    | M      |        | M      |        |      |                           |

**CORRESPONDING MEMBERS**

|                 |                  |                                   |            |            |            |    |   |  |   |  |  |  |
|-----------------|------------------|-----------------------------------|------------|------------|------------|----|---|--|---|--|--|--|
| TAYLOR, JOHN H. | General Interest | BROOKHAVEN NATIONAL LAB (retired) | [REDACTED] | [REDACTED] | [REDACTED] | PC | M |  | M |  |  |  |
|-----------------|------------------|-----------------------------------|------------|------------|------------|----|---|--|---|--|--|--|

**GUESTS AT 10-2 MEETING**

|                |                 |                                  |                                      |            |            |  |  |  |  |  |  |        |
|----------------|-----------------|----------------------------------|--------------------------------------|------------|------------|--|--|--|--|--|--|--------|
| PHAN, HANH     | Govt / Military | US NUCLEAR REGULATORY COMMISSION | Office of New Reactors<br>[REDACTED] | [REDACTED] | [REDACTED] |  |  |  |  |  |  |        |
| WYLIE, MICHAEL | Producer        | ADVENT, a TETRA TECH Company     | [REDACTED]                           | [REDACTED] | [REDACTED] |  |  |  |  |  |  | WG-2.3 |

| * Categories     | SC-3 Count | Definitions per IEEE   |
|------------------|------------|--|
| Academic         | 0          | An educational institution or a person or entity affiliated with such institution, providing academic review of the standard being developed.  |
| General Interest | 1          | A participant in standards activities that may benefit directly or indirectly, and may be affected by the standard being developed without being primarily a member of any of the other interest categories defined for this ballot. |
| Govt / Military  | 3          | A governmental entity or a person affiliated with such entity with direct interest in the standard being developed.  |
| Producer         | 15         | A person or entity that directly creates or that will create a conformant product, component, or service, for sale or distribution.  |
| User             | 6          | A person or entity that relies or will rely on the standard to define conformance of the product or service, and to create a common understanding of the operation of the product or service.  |

TOTAL MEMBERS = 25      Note - only the full members included in count

[REDACTED]

**NPEC Subcommittee SC-3**  
*Operations, Surveillance, Aging, Reliability and Testing*  
**Action Items List**

| Item No. | Subcommittee 3.0 Actions  | Owner  | Due Date   | Closure Comments   |
|----------|---|--|--|--|
| 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 | Closed<br>Rev 1 approved 10-2 mtg; addressed all but d<br>see also 10-2-E  |
| 10-1-B   | Develop presentation / flowchart for standards preparation (birth to approval) for next meeting   | George   | for presentation at 10-2 mtg                               | closed - presented at 10-2 meeting   |
| 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                                      | closed -- categories were clarified and identified for members at 10-2 meeting   |
| 10-2-A   | Email to Ali Daneshpooy, Barry Sloane and Craig Sellers regarding SC3 membership -- removed as members based on lack of attendance. If they want to be restored, need to demonstrate participation.   | Yvonne / Glen  | After 10-2 meeting   | remove from roster - Yvonne / Closed<br>Notify people of removal - Glen  |
| 10-2-B   | Segregate member / corresponding member / honorary members in rosters   | Yvonne   | After 10-2 meeting   | closed - see roster  |
| 10-2-C   | Investigate options for projection screen for meetings  | Yvonne   | For discussion at 11-1 meeting                             | 9/24/10 telecon -- George will bring sheet and hanging tools for screen for 11-1 mtg   |
| 10-2-D   | Get SC3 name changed on NPEC subcommittees list on website (and on SC-3 site thru Rachel)<br>NPEC website - John MacDonald?<br>OPM/stds status - Operations, Surveillance, Aging, Reliability and Testing<br>NPEC website - Operations, Maintenance, Aging, Testing & Reliability<br>NPEC letterhead - Operations, Surveillance, Reliability and Testing  | Yvonne, but some issues identified in 8/12 leadership telecon - see comments         | discuss again at 11-1 meeting                              | 8/12/10 telecon -- Glen to do some advance work -- what is on NPEC letterhead? On NPEC website? On our standards status spreadsheet? On SC-3 OPM? -- discuss again at 11-1 meeting |
| 10-2-E   | Operations Manual<br>A. Get current version out to SC3 membership, leaving Rev 1 changes available in document thru "track changes", for more comments and suggestions<br>B. Update for conformance with IEEE guides and policies (e.g. WG requirements, SA Baseline Operating Procedures)<br>C. Form subgroup to get to Rev 2 for discussion at 11-1 meeting (J. Parello + others) - see item 10 in 10-2 minutes also<br>D. Consider adding Gopal's NPEC / SC-3 chart as an appendix | Mansoor<br><br>(all to review Rev 1 for more comments and suggestions when sent out) | Ongoing effort   | A. Rev 1 clean and track changes pdf files sent to membership 10/26/10 by Mansoor  |
| 10-2-F   | Standards status / schedule - update for meeting minutes and send to all SC3 members -- ensure 1819 is included in list   | Glen / Ted / Jim / Dave  | After 10-2 meeting   | updated spreadsheet in 10-2 minutes does not include 1819  |
| 10-2-G   | See if feedback from NRMCC via NPEC VC is useful and appropriate  | Glen   |  |  |
| 10-2-H   | lapel pins  | tabled from 10-2 meeting   |  |  |

## NPEC Subcommittee SC-3

### *Operations, Surveillance, Aging, Reliability and Testing*

#### 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       |

## SC-3 "Operations, Surveillance, Aging, Reliability, and Testing"

| STANDARD | Year | Last Re-Affirmed/ Revised | PAR Expiration   | TITLE   | Working Group | Chair      | Develop PAR (6 Mo) | NPEC Preview | Revise Std/Guide (12 Mo) | NPEC concur for ballot | Ballet/recic (12 Mo) | Publish  | 5 Year Due Date | Status/Comments  |
|----------|------|---------------------------|------------------|---|---------------|------------|--------------------|--------------|--------------------------|------------------------|----------------------|----------|-----------------|--|
| 336      | 2010 | 6/17/2010                 |                  | Recommended Practice for Installation, Inspection, and Testing Class 1E Power, Instrumentation, and Control Equipment at Nuclear Facilities | 3.1           | T. Riccio  | 07/01/12           | 01/20/13     | 01/31/13                 | 01/31/14               | 03/31/14             | 03/31/15 | 06/17/15        | Revision approved by IEEE Standards Board on June 17, 2010   |
| 338      | 2006 | 12/6/2006                 | Dec-14           | Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems                                  | 3.1           | T. Riccio  | Done               | Done         | 01/31/10                 | 01/31/11               | 02/15/11             | 11/30/11 | 12/06/11        | Revision approved by IEEE Standards Board on December 6, 2006. PAR in place - working on revision              |
| 692      | 2010 | 2/2/2010                  |                  | Standard Criteria for Security Systems for Nuclear Power Generating Stations  | 3.2           | D. Horvath | 02/01/12           | 08/01/12     | 08/15/12                 | 08/15/13               | 12/01/13             | 12/15/14 | 02/02/15        | Revision approved by IEEE Standards Board on February 2, 2010.   |
| 352      | 1987 | 3/25/2010                 | Need to Generate | Guide for General Principles of Reliability Analysis of Nuclear Power Generating Station Protection Systems                                 | 3.3           | J. Liming  | 02/01/10           | 08/01/10     | 11/01/10                 | 11/01/11               | 12/15/11             | 12/15/12 | 12/31/12        | Reaffirmation approved by IEEE Standards Board on March 25, 2010 - need to revise to meet NPEC 2011-2012 Goals |
| 577      | 2004 | 2004                      | Dec-12           | Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Power Generating Stations          | 3.3           | J. Liming  | Done               | Done         | Done                     | Done                   | 02/22/10             | 02/22/11 | 06/30/09        | First ballot completed - one negative received. Comments being addressed.                                      |
| 933      | 1999 | 2004                      | Dec-12           | Guide for Definition of Reliability Program Plans   | 3.3           | J. Liming  | Done               | Done         | Done                     | Done                   | 10/15/10             | 10/15/11 | 06/30/09        | PAR revised per NPEC direction. Prepping for ballot.   |
| 1205     | 2000 | 3/22/2007                 | Need to Generate | Guide for Assessing, Monitoring, and Mitigating Aging Effects on Class 1E Equipment used in Nuclear Power Generating Stations               | 3.4           | D. Horvath | 07/31/09           | 01/31/10     | 02/15/10                 | 02/15/11               | 02/28/11             | 02/28/12 | 03/22/12        | Reaffirmation approved by IEEE Standards Board on March 22, 2007 - need to revise to meet NPEC 2011-2012 Goals |

Chair

Glen Schinzel

Color Code ;

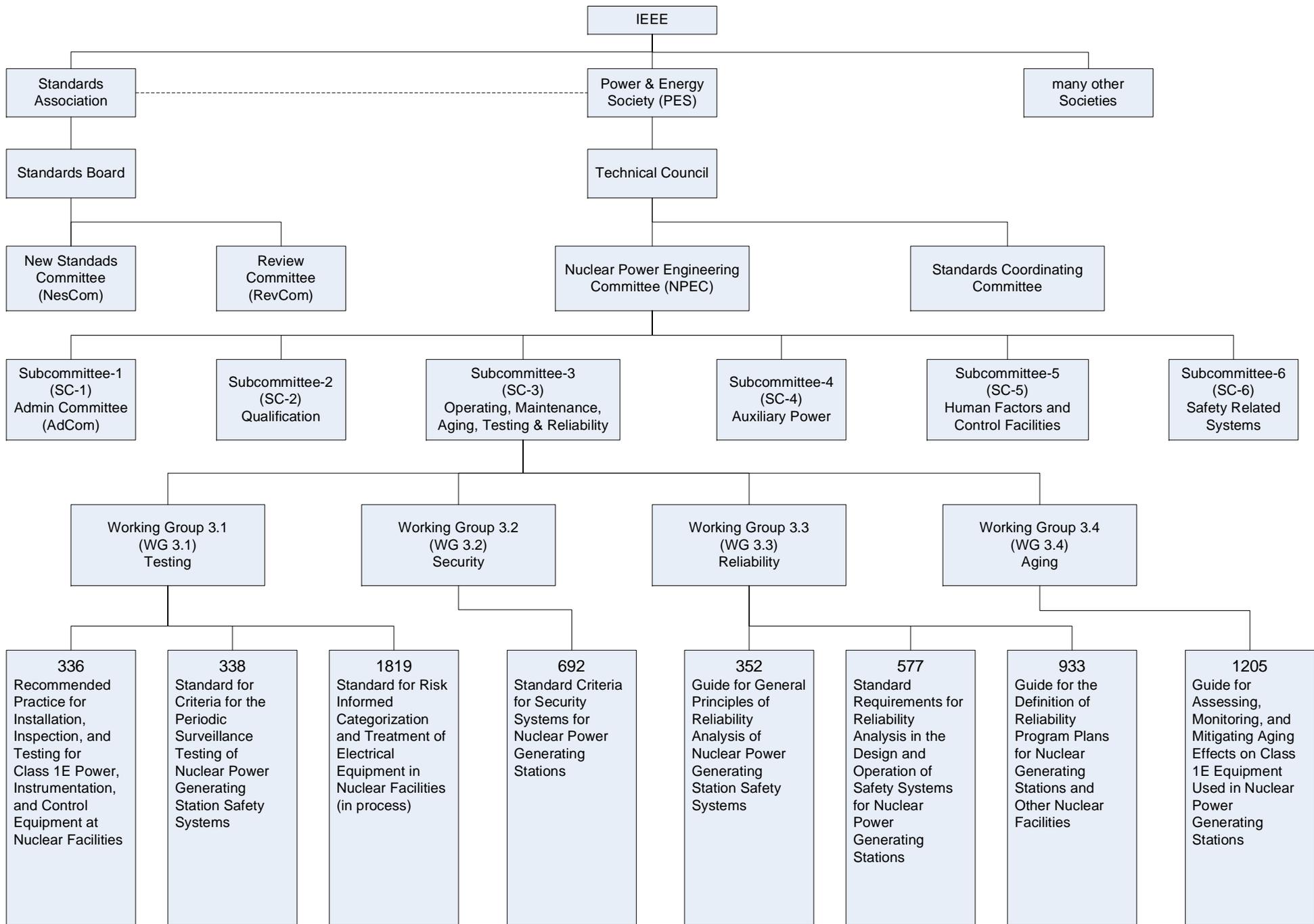
Green - Due Date > 180 days 5

Yellow - Due Date < 180 days 0

Red - Due Date < 30 days 2

7

|                                  |   |               |
|----------------------------------|---|---------------|
| New standards/Work-in-progress   | 1 | P1819         |
| No action needed                 | 2 | 336, 692      |
| Draft Standards/Work-in-progress | 3 | 338, 577, 933 |
| PARs in process                  | 0 |               |
| PARs Needed                      | 2 | 352, 1205     |
| Re-Affirmations in process       | 0 |               |
| Re-Affirmations Needed           | 0 |               |



NPEC SUBCOMMITTEE-3 WORKING GROUPS – STANDARDS AND GUIDES

## **ASME Liaison Report**

**Glen E. Schinzel - STARS**

### **ASME Special Committee on Standards Planning**

The ASME OM Special Committee on Standards Planning met in June 2010. The Committee is in the process of reviewing all currently published ASME OM (Operations & Maintenance) Parts, Guides, and Standards to determine:

- If they are still useful
- If the requirements are current
- If the requirements are outdated, is it worth updating them?
- In not, what other industry standards can replace them?

This review activity is on-going with a desire to ensure that current standards are meeting current user's needs, are supportive of new construction occurring internationally, and are supportive of the expected new construction domestically.

IEEE generally ensures that standards remain current and supportive of user needs by ensuring the standards are assessed on a 5-year interval. It is important to be self-critical during these reviews and to address the questions that ASME is asking during these review processes.

### **Committee on Nuclear Risk Management (CNRM)**

ASME's Committee on Nuclear Risk Management is assessing possible new standards to establish consistent approaches on integrated decision-making panels, use of expert panels, and approaches for practical programmatic applications using risk insights. Some of the CNRM focus is shifting toward practical standard development that will aid the practitioner in effective implementation of available risk tools.

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.

**NRC LIAISON REPORT  
BY PETER KANG  
OFFICE OF NEW REACTORS (NRO)  
US NUCLEAR REGULATORY COMMISSION  
July 19-20, 2010**

**US NRC Activities Related to New Reactor Licensing**

**Receipt of the North Anna, Unit 3 Combined License (COL) Application**

On June 29, 2010, Dominion Virginia Power (Dominion) submitted a COL application to use the US-APWR reactor technology for North Anna, Unit 3. Dominion had previously filed a COL application on November 26, 2007 to use the ESBWR reactor technology for North Anna, Unit 3. However, on May 18, 2010, Dominion informed the NRC that it had selected the US-APWR design to reference in its COL application for North Anna, Unit 3.

**Combined License application for two new reactors at the Turkey Point site**

Florida Power & Light submitted the COL application on June 30, 2009, seeking approval to build and operate two AP1000 reactors at the site, approximately 40 miles south of Miami. The NRC staff has determined that the application contains sufficient information for the agency to formally "docket," or file, the application and began its technical review.

**NRO Conducts Design Acceptance Criteria (DAC) Pilot Inspection at South Texas Project**

The NRC conducted a pilot inspection of the South Texas Project (STP) Units 3&4 Digital Instrumentation and Control (DI&C) Design Acceptance Criteria (DAC). The inspection was held at Westinghouse Headquarters in Cranberry, PA, June 21-25, and was the first opportunity to implement the new DAC inspection methodology and inspection procedure produced by the DAC Working Group. The pilot inspection was a collaboration of Region II inspectors and NRC Headquarters technical staff focused on verifying implementation of the DI&C design for STP, specifically the high-level DI&C software Planning Phase (Software Quality Assurance, Management, Configuration Management and Verification/Validation) documentation at the STP project level, as well as the Toshiba and Westinghouse DI&C system platform level. A second pilot DAC inspection is planned for late 2010, following completion of the Planning Phase for one of the DI&C system platforms. The pilot inspections serve to inform process and methodology to address DAC inspection for DI&C systems, piping, and human factors engineering for new reactors.

**Fermi Returns to Service after Storm Damage**

On June 6, 2010, at 2:53 a. m. (all times are Eastern Daylight Time) Fermi 2 declared a Notice of Unusual Event (the lowest of emergency classifications) when a tornado-like storm passed through the area causing damage on site. The loss of the some off-site power lines caused a turbine trip and reactor trip. The reactor trip was uncomplicated, the reactor was shut down and stabilized, and decay heat was removed via the normal heat sink. Some busses received power from the remaining off-site power source, and the other safety busses received power from emergency diesel generators.

**Smart Grid Startup Gets Big Backers**

Constellation Energy Group, General Electric, Qualcomm Inc., and Verizon are among a group of investors that have provided \$17.7 million to Consert Inc., a smart grid software startup that says its demand-side management technology gives utility ratepayers far greater capability to

monitor and reduce energy consumption by home appliances. The technology uses wireless devices to control dozens of energy-using appliances and systems in homes. Energy consumption data from those appliances and systems is relayed to the Internet via Verizon's wireless network so it can be monitored and controlled by resident.

### **NRC Judges Deny Yucca Withdrawal Request by DOE**

Plan to kill the Yucca Mountain nuclear waste repository, a panel of Nuclear Regulatory Commission judges flatly rejected the Energy Department's effort to yank a license application for the project pending at the NRC, saying federal law gives DOE no authority to withdraw it, as the agency sought in a March request to the NRC. Energy Secretary Steven Chu and other administration officials say that science underpinning nuclear waste management and geology have advanced considerably since Yucca was selected in the 1980s, and that better options are available to the nation. However, DOE has not said what those better options might be.

### **Qualification of ESBWR & AP1000 Extended Duty Cycle Batteries**

The objective of battery 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. The staff is currently reviewing these test plans.

### **Two Notable Standby Emergency Power Sources:**

#### **US APWR (Mitsubishi) DC Application**

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 emergency power and station blackout (SBO) purpose, MHI will buy SBO turbines from a different manufacturer, to satisfy the diversity issue. MHI intends to demonstrate at least 95% reliability at a 95% confidence level for these turbines. MHI's test plan is under active review by the NRC. The testing will commence fall of 2010.

#### **US EPR (AREVA) DC Application**

The EPR is an evolutionary power reactor design based on the latest French plant (AREVA). Unlike MHI, the US EPR design has four (100 percent) diesels. UniStar submitted a COL application for Calvert Cliffs Unit 3. The Calvert Cliffs COL application is to be certified as the first plant for the EPR design.

### **Certified Designs (CDs) and CDs under Review:**

#### **CDs**

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

#### **CDs 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.

**List of COLs Currently under Review (based on the above DCs):**

**ABWR**- South Texas Project (2 units)

**AP1000**-Bellefonte (2 units), Vogtle (2 units), Summer (2 units), Lee Nuclear Station (2 units), Harris (2 units), Turkey Point (2 units), Levy County (2 units)

**USEPR**-Calvert Cliffs (1 unit), Bell Bend (1 unit)

**USAPWR**-Comanche Peak (2 units), North Anna (1 unit)

**ESBWR**-Fermi (1 unit)

**Advanced Reactors**

The NRC has received several letters of intent for applications for design certifications and design approvals.

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

**License Renewal**

**Applications Currently Under Review for License Renewal:**

- [Pilgrim 1, Unit 1](#)
- [Vermont Yankee](#)
- [Indian Point, Units 2 and 3](#)
- [Prairie Island, Units 1 and 2](#)
- [Kewaunee Power Station](#)
- [Cooper Nuclear Station](#)
- [Duane Arnold Energy Center](#)
- [Palo Verde, Units 1, 2, and 3](#)
- [Crystal River, Unit 3](#)
- [Hope Creek](#)
- [Salem, Units 1 and 2](#)
- [Diablo Canyon, Units 1 and 2](#)
- [Columbia Generating Station](#)
- [Seabrook Station, Unit 1](#)

## Future Submittals of Applications:

| Fiscal Year | No. | Renewal Application  | Applicant                             | Submission Date    |
|-------------|-----|--|---------------------------------------|--------------------|
| 2010        | 1   | <u>Davis-Besse Nuclear Power Station, Unit 1</u>             | FirstEnergy Nuclear Operating Company | Aug. 2010          |
|             | 1   | South Texas Project, <u>Unit 1</u> and <u>Unit 2</u>         | STP Nuclear Operating Company         | Oct. to Dec. 2010  |
| 2011        | 2   | <u>Grand Gulf Nuclear Station, Unit 1</u>                    | Entergy Nuclear, Inc.                 | July 2011          |
|             | 3   | Limerick Generating Station, <u>Unit 1</u> and <u>Unit 2</u> | Exelon Generation Company, LLC        | Sept. 2011         |
|             | 1   | <u>Callaway Plant, Unit 1</u>                                | AmerenUE                              | Oct. to Dec. 2011  |
| 2013        | 1   | Strategic Teaming and Resource Sharing (STARS) No. 7         | Un-named                              | Oct. to Dec. 2012  |
|             | 2   | <u>Waterford Steam Electric Station, Unit 3</u>              | Entergy Nuclear, Inc.                 | Jan. 2013          |
|             | 3   | Sequoyah Nuclear Plant, <u>Unit 1</u> and <u>Unit 2</u>      | Tennessee Valley Authority            | Apr. to June 2013  |
|             | 4   | Strategic Teaming and Resource Sharing (STARS) No. 6         | Un-named                              | July to Sept. 2013 |
|             | 5   | Un-named   | Exelon Generation Company, LLC        | July 2013          |
|             | 6   | <u>Perry Nuclear Power Plant, Unit 1</u>                     | FirstEnergy Nuclear Operating Company | Aug. 2013          |
| 2015        | 1   | <u>River Bend Station, Unit 1</u>                            | Entergy Nuclear, Inc.                 | Jan. 2015          |
|             | 2   | Un-named   | Exelon Generation Company, LLC        | July 2015          |
| 2017        | 1   | Un-named   | Exelon Generation Company, LLC        | Apr. 2017          |

**Information Notices (INs) Pertinent to Electrical and I&C system**

| <b>Document Number</b> | <b>Date</b> | <b>Description</b>  |
|------------------------|-------------|---|
| in2010-10              | 05/28/2010  | Implementation of a Digital Control System Under 10 CFR 50.59                           |
| in2010-09              | 04/14/2010  | Importance of Understanding Circuit Breaker Control Panel Indications                   |
| in2010-04              | 02/26/2010  | Diesel Generator Voltage Regulation System Component Due to Latent Manufacturing Defect |
| in2010-02              | 01/28/2010  | Construction-Related Experience With Cables, Connectors, And Junction Boxes             |

## **SC3 Chairman's Report to NPEC July 21, 2010**

Subcommittee 3 'Operations, Surveillance, Aging, Reliability, and Testing' met on Monday July 19, 2010 and Tuesday July 20, 2010 with 14 out of 26 members present. In addition, 3 guests were present, of which 1 was approved for SC3 membership.

Key discussion points and actions taken by the Subcommittee were as follows:

- SC3 completed alignment of membership categorization with the stated IEEE Balance of Interest categories – SC3 will focus on additional members in the categories of Users, General Interest, Academic, and Government/Military to ensure proper balance in the future – in addition, the number of Corresponding Members were confirmed to remain at 1
- SC3 holds leadership telecons which includes the Chair, Vice Chair, Secretary, Ex-Chair, and the Chair of each Working Group – these telecons are held in between scheduled SC3 meetings – these telecons have proven valuable in keeping the leadership aligned on SC3 status and activities, and to address issues in a timely manner – these telecons will continue to be held
- SC3 intends to proceed with the succession planning leadership rotation at meeting 11-1 – one leadership position remains to be filled
- SC3 updated the SC3 Operating Procedure to ensure alignment with the NPEC OP and to provide the needed guidance to SC3 membership – additional enhancements are being pursued
- SC3 developed a strategic 5-yr plan to ensure all standards are brought up-to-date and are maintained up-to-date – two standards remain RED (577, 933) with actions in progress to revise these standards within the next 12 months – SC3 will be required to short-cycle two standards (352, 1205) to meet the NPEC goal of all standards with a 2007 or newer date by 12/31/12
- SC3 discussed the proposed NPEC goals for 2011-2012 – in support of these goals, SC3 will pursue adding international members as well as new-career engineer members
- Two presentations were given at the SC3 meeting:
  - A work-in-progress on the revision to 338
  - A training presentation on the IEEE website and the life-cycle of the Standards process
- WG3.1 and WG3.3 also met on July 19-20 to conduct routine business and to work on standards activities (338, P1819, 577, 933)

Respectfully submitted,

Glen E. Schinzel  
SC3 Chairman

# Work in Progress

## Presentation – P338

Jul. 21, 2010 (NPEC Mtg 10-2)

By Ted Riccio (WG-3.1 Chair)

Standard for Criteria for the Periodic  
Surveillance Testing of Nuclear Power  
Generating Station Safety Systems

# NPEC Work in Progress – P338

## Presentation Contents

---

1. History and Background
2. P338 PAR Summary
3. Members working on the standard
4. P338 Table of Contents
5. Summary of Changes
6. Progress
7. Current Schedule
8. Closing

# NPEC Work in Progress – P338

## 1. History

---

### History of IEEE P338

This standard history goes way back to the 1970's. Its main purpose was to provide guidance in the development of periodic testing for nuclear power plants. Although most plants associate it with NRC required testing, it is also very useful for other testing, at other nuclear facilities, and is intended for international use as well.

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 – P338

## 1. History (Continued)

---

### History of IEEE P338

During the last revision, Subcommittee 3 incorporated some risk insight into IEEE 338 which provided for risk informed test frequencies. This is currently in the form of informative annexes.

# NPEC Work in Progress – P338

## 2. PAR Summary (PAR is approved)

---

**Scope of Standard:** (There is no change from current revision)

The standard provides criteria for the performance of periodic testing of nuclear power generating station safety systems. The scope of periodic testing consists of functional tests and checks, calibration verification, and time response measurements, as required, to verify that the safety system performs its defined safety function. Post-maintenance and post-modification testing are not covered by this document. This standard amplifies the periodic testing requirements of other nuclear safety-related IEEE standards.

# NPEC Work in Progress – P338

## 2. PAR Summary (Continued)

---

**Purpose of Proposed Standard:** (There is no change from current revision)

This standard is intended to aid the user not only in designing a periodic test capability but also in defining and optimizing the primary elements of an effective periodic test program (including planning, performance/acceptance criteria, procedures, test intervals, and documentation).

# NPEC Work in Progress – P338

## 2. PAR Summary (Continued)

---

### **Need for the Revision Project:**

As per the PAR – “Normal 5 year cycle. Update with current technology.”

# **NPEC Work in Progress – P338**

## **3. Working Group Members working on the standard:**

(with balance of interest)

|                             |                                |
|-----------------------------|--------------------------------|
| <b>Gopal Aravapalli (U)</b> | <b>Ted Riccio (U)</b>          |
| <b>John Beatty (P)</b>      | <b>Mansoor Sanwarwalla (P)</b> |
| <b>Hamid Heidarisa (U)</b>  | <b>Owen Scott (U)</b>          |
| <b>Peter Kang (G)</b>       | <b>John Stevens (P)</b>        |
| <b>Jim Liming (P)</b>       | <b>Yvonne Williams (P)</b>     |
| <b>Joe Napper (U)</b>       | <b>Kiang Zee (U)</b>           |

# **NPEC Work in Progress – P338**

## **4. Table of Contents**

---

### **1. Overview**

#### **1.1 General**

#### **1.2 Scope**

#### **1.3 Purpose**

### **2. Normative References**

### **3. Definitions**

### **4. System Design Requirements for Testing**

### **5. Testing Program Requirements**

#### **5.1 General Considerations**

#### **5.2 Program Objectives**

#### **5.3 Types of Tests**

#### **5.4 Test Methods**

#### **5.5 Test Intervals**

#### **5.6 Procedure format and documentation**

# **NPEC Work in Progress – P338**

## **4. Table of Contents**

---

**Annex A - Bibliography**

**Annex B – General Overview of Risk Informed  
Surveillance Testing**

**Annex C - Draft Process for Evaluation of  
Surveillance Testing Changes**

**Annex D – Programmatic Approach to Risk  
Informed Surveillance Test Interval  
Management**

# NPEC Work in Progress – P338

## 5. Summary of Changes

---

The goal is to have the revision ready for NRC endorsement for an updated Reg. Guide for the new plants. Major work we plan:

- Address testing of digital systems
- Add a new test method using monitoring techniques for transmitters (currently under development by the industry).
- Provide clarification of response time requirements.

# NPEC Work in Progress – P338

## 6. Progress

---

Standard is formatted according to the current IEEE template. Rough drafts of the following sections have been developed and are under refinement by different subgroups :

- ↪ Digital testing
- ↪ On Line Monitoring
- ↪ Response time clarifications

# NPEC Work in Progress – P338

## 7. Schedule

| <b>Action</b>                         | <b>Target Date</b> |
|---------------------------------------|--------------------|
| WG complete revision                  | Sept 30, 2010      |
| Send preview to NPEC                  | Dec 15, 2010       |
| Preview                               | Meeting 11-1       |
| Balloting                             | Aug 2011           |
| Resolution of comments (if necessary) | Meeting 12-1       |
| Recirc ballot (if necessary)          | February 2012      |
| IEEE Approval                         | August 2012        |

# NPEC Work in Progress – P338

## 8. Closing

---

Questions?