IEEE NPEC Subcommittee SC-3
Operations, Maintenance, Aging, Testing, & Reliability
Meeting 16-2 Minutes

APPROVED

Wednesday Morning, July 13, 2016
Denver, CO

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

1.0 Introduction

- **Opening Remarks and Meeting Agenda**

  Yvonne Williams called the meeting to order at about 08:06 then reviewed the agenda. Jim Liming's Standard Revision Guideline was added for discussion under New Business. George moved to approve the agenda, John Stevens seconded, and the agenda was approved.

2.0 Secretary's Report

- **SC-3 Approval of S16-1 Meeting Minutes**

  Tom Crawford sent the draft meeting minutes to the membership via email prior to the meeting. He received comments from Rebecca Steinman and reviewed the revised meeting notes for the S16-1 meeting in Cocoa Beach. Ted moved to approve the corrected minutes. John Stevens seconded. The minutes were approved as amended.

- **SC-3 Membership**

  Tom noted that there were 9 members in attendance and 2 members provided a proxy prior to the meeting; we have 17 members total at present; therefore, quorum was met for conducting business at the meeting. It was noted that Ngola Otto will be taking over for Sheila Ray (NRC). Phil Ward will be taking over for Vish Patel. The Rolling

Attendance report is contained in Attachment 2. The current membership roster will be distributed separately.

- **Alligator Fund**

  The status of the alligator fund was reviewed and it was noted that the fund balance is unchanged. We agreed, once again, that there would be no collection for this meeting. The Alligator Fund status is contained in Attachment 3.

- **Action Item Status**

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

  SC-3 Name Change ***(AI-11-2-C)*** – the subcommittee name change to "Operations, Maintenance, Aging, Testing, & Reliability" was discussed. No action has been taken even though this has been brought up with ADCOM. Yvonne will bring up at ADCOM again and request action. We may need to document the request in a letter to NPEC.

  Strawman for gap analysis for SC3 standards ***(Action 12-2-B)*** – Development of a Template / Strawman for gap analysis for the SC3 standards remains open and is assigned to Yvonne. Yvonne will look specifically at the 336 & 338 standards, which are next up to be revised.

  Present conflict to SA for resolution, regarding meeting notice distribution in Section 6.0 of SA WG P&P Manual Template ***(Action 14-1-B)*** – Tom revised the SC-3 O&P manual, which was discussed under a separate agenda item.

3.0 IEEE Patent Slides

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

4.0 Chair's Report

- **Leadership Review / Membership**

  The current officers are: Yvonne Williams, Chair; Tom Crawford, Vice Chair; and Rebecca Steinman, Secretary. It was noted that new people need to step into the leadership roles and that each committee member needs to push hard to bring at least one potential new member to the 17-1 meeting.

- **Leadership Telecons**

  There were no Leadership telecons since the previous meeting.

- **NPEC Preparations**

  There are no preview or work-in-progress activities associated with SC-3 this meeting. Yvonne briefly reviewed the NPEC agenda and encouraged SC members to attend at least one NPEC meeting to know what happens. The NPEC meeting will be in the Telluride room. George Ballassi reminded attendees of the NPEC fact sheet, which describes who we are and what we do in NPEC. Yvonne demonstrated how to find the fact sheet and other information on both the NPEC and the SC-3 web sites.

5.0 Working Group Reports

- **WG-3.1**

  The WG met Monday. P1819 has been submitted to IEEE and is awaiting final approval. We started a PAR for revision of IEEE 336. Members were asked to look at the current version before the next meeting and identify any changes needed.

- **WG-3.2**

  WG-3.2 is dormant at present. Randy Flowers is the Chair.

- **WG-3.3**

  The WG met Monday and continued working on comment resolution for IEEE 352. John Stevens will finish incorporating the changes identified, then submit the draft to IEEE for a Recirc Ballot.

- **WG-3.4**

  WG 3.4 is also dormant. Rebecca continues as Chair.

6.0 Liaison Reports

Liaison reports were provided as follows:

- NRC – Ngola provided the NRC report, which is contained in Attachment 7.
- ASME – No report was provided.
- NRMCC – Jim Liming gave the NRMCC report. The NRMCC will be absorbed back into the Joint Committee on Nuclear Risk Management (JCNRM) in 2017 since the primary activities of the NRMCC are complete. IEEE may be asked to sit in on the JCNRM in the future. George suggested that the NPEC chair should assign a new/different official liaison in the future, since he does not have the relevant technical background and the original need for making the liaison the NPEC vice chair is no longer relevant. Jim also noted that he has shared relevant IEEE standards

with the NRMCC and received positive feedback. Information from the last NRMCC meeting is provided in Attachment 8.

7.0 Old and New Business

Tom prepared a draft revision of the SC-3 OPM to address the NPEC WG P&P. It was noted that SC-3 made a conscience decision to adopt the NPEC WG P&P wording into the SC-3 OPM to prevent each WG from having to develop their own P&Ps. The major OPM revisions, such as the deletion of Appendix 3 and movement of selected portions of its content to the main document, were previewed. A few items were noted as still requiring change, such as the fact that P1819 may no longer be "in-progress" by the time the manual is published. Tom will distribute the revised OPM to the membership for review and comment. The intent is to approve the revised document at the 17-1 meeting.

Details for the next meeting will be provided when available from NPEC. Note: NPEC subsequently announced that the N17-1 meeting will be in New Orleans during 6, 7, & 8 Feb 2017. The N17-2 meeting is tentatively in Buffalo, NY, which is near Niagra Falls.

The SC-3 Master Schedule was reviewed. It was decided that the schedule should maintain a 10-year look ahead. The next revision will start at 2016 and cover at least 10 years forward. It was decided that the initial work on 692 should start 1 meeting earlier than currently depicted in the schedule.

Jim Liming put together a "strawman" desktop guidance for routine updating and revision of standards; looking at "gap analysis," etc. The guidance on Developing Standards from http://standards.ieee.org was pointed out as an additional source of details for certain activities such as editorial review, balloting, etc. Tom had previously provided a few comments on the initial document. Jim will revise the document and then Tom will distribute the updated version to the membership. Malia indicated that she may want to elevate this document for use by other WGs as an NPEC or PES guideline.

Ted Ricco suggested that the SC needed to ensure that all future revisions of SC-3 standards include cross-reference to 1819 for risk-informed classifications. We should also investigate options for making sure other appropriate standards include the cross-reference. It was suggested that a white paper be prepared for distribution to ADCOM. Ted took an action to figure out which other standards should be using 1819 and to prepare the initial draft of the white paper ***(ACTION 16-2-A).***

Ted also suggested that the SC should try to get at least one reliability/PRA person on each SC-3 WG and that we should be trying to specifically recruit people for these roles. It was suggested that SC-3 might get better visibility within NPEC if we also had members participating in the WGs of other SCs.

Tom noted that we had actually coordinated with SC-5 via the NPEC Preview for P1082. We provided a reference to our P1819 and some definitions used in our standards for

incorporation into P1082, and they provided some updated references for our use in P1819.

George brought the group back to the NPEC web site and pointed out a diagram of the relationships between NPEC standards and other useful information that had been added to the NPEC web site.

There was one new Action Item from this meeting. The revised AI List is provided in Attachment 4.

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

Prepared by Rebecca Steinman, SC-3 Secretary.

SC-3 Website information:

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

ATTACHMENTS

Attachment 1 Agenda	Attachment 2 Rolling Attendance	Attachment 3 Alligator Fund
Attachment 4 Action Items	Attachment 5 NPEC SC-3 Standards Status Spreadsheet (None)	Attachment 6 ASME Liaison Report (None)
Attachment 7 NRC Liaison Report	Attachment 8 NRMCC Liaison Report	Attachment 9 IEEE Patent Slides
Attachment 10 SC-3 Standards Schedule		

Attachment 1

Agenda – Meeting 16-2 – Denver, CO

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

Meeting Date/Time:	Wednesday, 07/13/2016 0800-1200	**Chairman :** **Vice Chair:** **Secretary:**	Yvonne Williams Tom Crawford Rebecca Steinman

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

WHAT	WHO	WHEN
Welcome, Review Desired Outcomes • Meeting logistics • Introductions	Y. Williams All	0800-0810
Chairman's Introduction • Opening remarks • Review/approve agenda	Y. Williams	0810-0820
Secretary's Report • Approval of SC3 16-1 Meeting Minutes • Action Item review/status • SC3 membership review • Alligator fund report	T. Crawford / R. Steinman	0820-0845
Chairman's Report • SC3 Leadership – Officers and succession planning • Leadership telecons • NPEC meeting preparations	Y. Williams	0845-0900
NPEC report, agenda for Thursday meeting	T. Crawford	0900-0905
Patent slides	Y. Williams	0905-0910
BREAK	All	0910-0930
Working Group Reports • WG-3.1 (Testing) • WG-3.2 (Security) • WG-3.3 (Reliability) • WG-3.4 (Aging)	 Y. Williams none J. Stevens none	 0930-0940 0940-0950
Liaison Reports • NRC Report • ASME Report • NRMCC Report	 S. Ray T. Riccio / C. Sellers G. Ballassi	 0950-1005 1005-1015 1015-1025
Old Business • SC-3 OPM • Master schedule for Std review/updates	 T. Crawford T. Riccio	 1025-1035 1035-1045
New Business • As identified during this meeting • Standards development process guideline	 All Jim Liming	 1045-1050
Review of Action Items	T. Crawford	1050-1055
Next meeting	Y. Williams	
Meeting closeout/adjournment		1105

Attachment 2

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

Attendance

Last	First	2014-1	2014-2	2015-1	2015-2	2016-1	2016-2
Aravapalli	Gopal	Correspond					
Ballassi	**George**	X	X		X		X
Beatty	**John**	X		X	X	X	X
Channarasappa	**Suresh**	X		X		X	P - J. Erinc
Crawford	**Tom**	X	X	X	X	X	X
Cuvelier	Marie	X			Correspond		
Erinc	**John**			X			X
Eustace	**Edward**	X					
Heidarisafa	Hamid						
Honecker	Sharon	Correspond					
Hutchins	**Steve**					Correspond	
Kulangara	**Jacob**		X		X	X	
Liming	**Jim**	X	X	X	X	X	X
Melson	**Kirk**			X	X	X	
Muhtashemi	**Ed**				X		
Napper	Joe	X	X		Correspond		
Otto	Ngola						X
Parello	Jim	X	Correspond				
Patel	Vish	X	X		X		Correspond
Pierce	Clint						X
Ray	Sheila			X			Correspond
Riccio	**Ted**	X	X		X	X	X
Steinman	**Rebecca**	X	X			X	X per Telecon
Stevens	**John**	X	X	X		X	X
Taylor	John						
Ward	Phil						X
Williams	**Yvonne**	X	X		X		X
Zee	**Kaing**	X	X	X	X	X	X

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

TOTAL PAYING ATTENDEES	15	11	9	11	10	12
TOTAL NON-PAYING ATTENDEES	0	0	0	0	0	0

Attachment 3

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

Alligator Fund

The Alligator Fund is made up of voluntary contributions from SC-3 members to defray the cost of meeting rooms, refreshments, etc.

Meeting	Beginning Balance	Meeting Contributions	Expenses	Ending Balance
S05-1	$312.14	$207.18	$359.82	$159.50
S05-2	$159.50	$240.00	$0.00	$399.50
S06-1	$399.50	$220.00	$178.67	$440.83
S06-2	$440.83	$160.00	$335.00	$265.83
S07-1	$265.83	$200.00	$201.70	$264.13
S07-2	$264.13	$600.00	$340.87	$523.26
S08-1	$523.26	$300.00	$347.80	$475.46
S08-2	$475.46	$320.00	$386.26	$409.20
S09-1	$409.20	$180.00	$12.00	$577.20
S09-2	$577.20	$210.00	$92.54	$694.66
S10-1	$694.66	$220.00	$380.90	$533.76
S10-2	$533.76	$425.00	$474.90	$483.86
S11-1	$483.86	$200.00	$14.00	$669.86
S11-2	$669.86	$430.00	$480.50	$619.36
S12-1	$619.36	$340.00	$203.00	$756.36
S12-2	$756.36	$150.00	$0.00	$906.36
S13-1	$906.36	$0.00	$0.00	$906.36
S13-2	$906.36	$0.00	$0.00	$906.36
S14-1	$906.36	$0.00	$0.00	$906.36
S14-2	$906.36	$0.00	$0.00	$906.36
S15-1	$906.36	$0.00	$0.00	$906.36
S15-2	$906.36	$0.00	$0.00	$906.36
S16-1	$906.36	$0.00	$0.00	$906.36
S16-2	$906.36	$0.00	$0.00	$906.36

Attachment 4

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

Action Items List

Item No.	Subcommittee 3.0 Actions	Owner	Due Date	Closure Comments
11-2-C	SC-3 name in NPEC needs to reflect reliability	Yvonne	Next AdCom mtg.	Bring up at AdCom meeting 11-2. 12-1 mtg: more complicated - Jim to bring up at 12-1 AdCom meeting to make sure what is required and then get those actions started. 13-1 mtg: Will affect NPEC P&P and O&P. Malia confirmed that it could be handled as an editorial change. It just will take time to process. Jim to bring up to ADCOM. Preferred name is: "Operations, Maintenance, Aging, Testing, and Reliability". Request Submitted 01/22/13; see S13-1 Meeting Notes, Attachment 5. No NPEC action, as of the close of the N14-1 Meeting. S15-2 Meeting -- Yvonne will bring up at ADCOM again; in the mean time, our documents will reflect the proposed name. George will check ADCOM meeting minutes to determine whether the name change request was ever followed-up on. We may need to write a letter to NPEC.
12-2-B	Develop a Template / Strawman for gap analysis for SC3 standards	Yvonne	13-2 mtg.	No follow-on as of S14-1 meeting. S15-2 Meeting -- Yvonne will look at this specifically considering 336 & 338.
14-1-B	Present the conflict to SA for resolution relative to meeting notice distribution in section 6.0 of the IEEE SA Working Group Policies & Procedures manual template.	Malia	14-2 mtg.	Action pending. No update as of S15-2 meeting. During the S16-1 meeting, Malia reported that SA is developing a new Template, and we should wait and see if that resolves the issue.
15-2-A	Review the CD of files from WG-3.2 for unresolved comments and also contact Randy Flowers concerning WG-3.2 plans.	Yvonne	16-1 mtg.	Action pending; no action as of 16-2 mtg.
15-2-C	Prepare initial Draft of SC-3 P&P's to align with the NPEC WG P&P's	Tom	17-1 mtg.	Preliminary draft presented at the S16-2 meeting; Tom will distribute for SC-3 review, then vote during the S17-1 meeting.
15-2-D	Update Master Schedule to spread out standards revision workload and avoid another crush in the 2020 - 2024 time frame.	Ted	16-1 mtg.	Schedule was updated during the S16-1 meeting. Maintaining it will be an ongoing process. This item is CLOSED.
16-2-A	Survey NPEC Stds for potential applicability of 1819.	Ted	17-1 mtg.	New item / Action pending.

Attachment 7

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

NRC Liaison Report – N16-02

Nuclear Reactor Regulation (NRR) Activities

- The renewed license for Braidwood Nuclear Plant, Units 1 and 2 was issued.
- NRC staff completed the acceptance review on Waterford Unit 3 License Renewal application.
- NRC staff released the Interim Enforcement Policy related to Open Phase Condition.
- NERC issued a letter clarifying its position on the NRC staff's access to the switchyard as pertaining to compliance with NERC Standard CIP-004

New Reactor Activities

- The APR 1400 design certification full safety review is in progress.
- Ongoing activities to support Vogtle and Summer construction.
- NuScale small modular reactor design (SMR): NRC Staff is currently reviewing the Topical Report on the Safety Classification of Passive Nuclear Power Plant Electrical Systems. The full design certification application is expected to be received by the end of 2016.
- The Combined License to South Texas Project, Units 3 and 4 was issued.
- The Early Site Permit application for the Clinch River Site was received in May 2016 with no reactor design was selected.

Research Activities

- The draft NUREG for the Research Project titled "DC PowerSystem Fault Contributions from the Battery and Battery Chargers used in Nuclear Power Plants" is in review by Research staff and will soon be forwarded to NRR staff for review.

License Renewal Activities

Applications currently under review:

Plant Name and Unit(s)	Application Received
Indian Point 2 & 3	04/30/07
Diablo Canyon 1 & 2	11/24/09
Seabrook 1	06/01/10
South Texas Project 1 & 2	10/28/10
Grand Gulf 1	11/01/11
Fermi, Unit 2	04/30/14
LaSalle 1 & 2	12/09/14
Waterford 3	03/23/16

Completed Applications:

(Includes application, review schedule, supplemental environmental impact statement, and safety evaluation report.)

Plant Name and Unit(s)	Application Received	Renewed License Issued	Date Entering Extended Operation
Calvert Cliffs 1 & 2	04/10/98	03/23/00	07/31/14 (Unit 1) 08/13/16 (Unit 2)
Oconee 1, 2 & 3	07/07/98	05/23/00	02/06/13 (Unit 1) 10/06/13 (Unit 2) 07/19/14 (Unit 3)
Arkansas Nuclear One 1	02/01/00	06/20/01	05/20/14
Turkey Point 3 & 4	09/11/00	06/06/02	07/19/12 (Unit 3) 04/10/13 (Unit 4)
Edwin I. Hatch 1 & 2	03/01/00	06/15/02	08/06/14 (Unit 1) 06/13/18 (Unit 2)
North Anna 1 & 2	05/29/01	03/20/03	04/01/18 (Unit 1) 08/21/20 (Unit 2)
Surry 1 & 2	05/29/01	03/20/03	05/25/12 (Unit 1) 01/29/13 (Unit 2)
Peach Bottom 2 & 3	07/02/01	05/07/03	08/08/13 (Unit 2) 07/02/14 (Unit 3)
St. Lucie 1 & 2	11/30/01	10/02/03	03/01/16 (Unit 1) 04/06/23 (Unit 2)
Fort Calhoun	01/11/02	11/04/03	08/09/13
McGuire 1 & 2	06/14/01	12/05/03	06/12/21 (Unit 1) 03/03/23 (Unit 2)
Catawba 1 & 2	06/14/01	12/05/03	12/05/23 (Unit 1) 12/05/23 (Unit 2)
H.B. Robinson 2	06/17/02	04/19/04	07/31/10
V.C. Summer	08/06/02	04/23/04	08/06/22

Completed Applications:

(Includes application, review schedule, supplemental environmental impact statement, and safety evaluation report.)

Plant Name and Unit(s)	Application Received	Renewed License Issued	Date Entering Extended Operation
R.E. Ginna	08/01/02	05/19/04	09/18/09
Dresden 2 & 3	01/03/03	10/28/04	12/22/09 (Unit 2) 01/12/11 (Unit 3)
Quad Cities 1 & 2	03/03/03	10/28/04	12/14/12 (Unit 1) 12/14/12 (Unit 2)
Joseph M. Farley 1 & 2	09/15/03	05/12/05	06/25/17 (Unit 1) 03/31/21 (Unit 2)
Arkansas Nuclear One 2	10/15/03	06/30/05	07/17/18
D.C. Cook 1 & 2	10/31/03	08/30/05	10/25/14 (Unit 1) 12/23/17 (Unit 2)
Millstone 2 & 3	01/22/04	11/28/05	07/31/15 (Unit 2) 11/25/25 (Unit 3)
Point Beach 1 & 2	02/26/04	12/22/05	10/05/10 (Unit 1) 03/08/13 (Unit 2)
Browns Ferry 1, 2 & 3	01/02/04	05/04/06	12/20/13 (Unit 1) 06/28/14 (Unit 2) 07/02/16 (Unit 3)
Brunswick 1 & 2	10/18/04	06/26/06	09/08/16 (Unit 1) 12/27/14 (Unit 2)
Nine Mile Point 1 & 2	05/27/04	10/31/06	08/22/09 (Unit 1) 10/31/26 (Unit 2)
Monticello	03/24/05	11/08/06	09/08/10
Palisades	03/31/05	01/17/07	03/24/11
FitzPatrick	07/01/06	09/08/08	10/17/14
Wolf Creek 1	10/04/06	11/20/08	03/11/25
Harris 1	11/16/06	12/17/08	10/24/26
Oyster Creek	07/22/05	04/08/09	04/09/09
Vogtle 1 & 2	06/29/07	06/03/09	01/16/27 (Unit 1) 02/09/29 (Unit 2)
Three Mile Island 1	01/08/08	10/22/09	04/19/14
Beaver Valley 1 & 2	08/28/07	11/05/09	01/29/16 (Unit 1) 05/27/27 (Unit 2)
Susquehanna 1 & 2	09/13/06	11/17/09	07/17/22 (Unit 1) 03/23/24 (Unit 2)
Cooper	09/30/08	11/29/10	01/18/14
Duane Arnold	10/01/08	12/16/10	02/21/14

Completed Applications:

(Includes application, review schedule, supplemental environmental impact statement, and safety evaluation report.)

Plant Name and Unit(s)	Application Received	Renewed License Issued	Date Entering Extended Operation
Kewaunee	08/14/08	02/24/11	*
Vermont Yankee**	01/27/06	03/21/11	03/21/12
Palo Verde 1, 2 & 3	12/15/08	04/22/11	06/01/25 (Unit 1) 04/24/26 (Unit 2) 11/25/27 (Unit 3)
Prairie Island 1 & 2	04/15/08	06/27/11	08/09/13 (Unit 1) 10/29/14 (Unit 2)
Salem 1 & 2	08/18/09	06/30/11	08/13/16 (Unit 1) 04/18/20 (Unit 2)
Hope Creek 1	08/18/09	07/20/11	04/11/26
Columbia Generating Station	01/20/10	05/22/12	12/20/23
Pilgrim 1	01/27/06	05/29/12	06/08/12
Crystal River 3	12/18/08	***	
Limerick 1 & 2	06/22/11	10/20/14	10/26/24 (Unit 1) 06/22/29 (Unit 2)
Callaway 1	12/19/11	03/06/15	10/18/24
Sequoyah 1 & 2	01/15/13	09/24/15	09/17/20 (Unit 1) 09/15/21 (Unit 2)
Byron 1 & 2	05/29/13	11/19/15	10/31/24 (Unit 1) 11/06/26 (Unit 2)
Davis-Besse 1	08/30/10	12/08/15	04/22/17
Braidwood 1 & 2	05/29/13	01/27/16	10/17/26 (Unit 1) 12/18/27 (Unit 2)

Future Submittals of Applications:

Fiscal Year	No.	Renewal Application	Applicant	Letter of Intent (ADAMS Accession No.)	Submission Date
2017	1	River Bend Station, Unit 1	Entergy Nuclear, Inc.	ML14055A319	Jan. to Mar. 2017
2020	1	Perry Nuclear Power Plant, Unit 1	FirstEnergy Nuclear Operating Company	ML15245A652	Oct. 2019
2021	1	Clinton Power Station, Unit 1	Exelon Generation Company, LLC	ML14253A117	Jan. to Mar. 2021
2022	1	Comanche Peak Nuclear Power Plant, Unit 1 & Unit 2	Luminant Power	ML16013A201	Apr. to Jun. 2022

The status of License Renewal activities may be found at

http://www.nrc.gov/reactors/operating/licensing/renewal/applications.html

Publications Issued Since January 1, 2016 - 127

- Orders - 13
- Regulatory Guides for Power Reactors – 1
- Withdrawn Regulatory Guides for Power Reactors – 0
- Draft Regulatory Guides Issued for Public Comment – 0
- Information Notices – 8
- Regulatory Issue Summaries – 9
- NUREGs – 75
- Vendor Inspection Reports – 21

List of Publications Issued:

Orders

CLI-16-13	STRATA ENERGY, INC. (Ross *In Situ* Recovery Project)	06/29/2016 40-9091
CLI-16-12	ENTERGY NUCLEAR VERMONT YANKEE, LLC and ENTERGY NUCLEAR OPERATIONS, INC. (Vermont Yankee Nuclear Power Station)	06/02/2016 50-271-LA-2

Orders

CLI-16-11	PACIFIC GAS & ELECTRIC COMPANY (Diablo Canyon Nuclear Power Plant, Units 1 and 2)	06/02/2016 50-275-LR 50-323-LR
CLI-16-10	ENTERGY NUCLEAR OPERATIONS, INC. (Indian Point Nuclear Generating Units 2 and 3)	06/02/2016 50-247-LR 50-286-LR
CLI-16-09	PACIFIC GAS & ELECTRIC COMPANY (Diablo Canyon Nuclear Power Plant, Units 1 and 2)	06/02/2016 50-275 50-323
CLI-16-08	ENTERGY NUCLEAR VERMONT YANKEE, LLC and ENTERGY NUCLEAR OPERATIONS, INC. (Vermont Yankee Nuclear Power Station)	06/02/2016 50-271-LA-3
CLI-16-07	ENTERGY NUCLEAR OPERATIONS, INC. (Indian Point Nuclear Generating Units 2 and 3)	05/04/2016 50-247-LR 50-286-LR
CLI-16-06	EXELON GENERATION COMPANY, LLC (Dresden Nuclear Power Station)	04/05/2016 50-237-EA 50-249-EA
CLI-16-05	ENTERGY NUCLEAR OPERATIONS, INC. (Indian Point Nuclear Generating Station, Unit 2)	04/05/2016 50-247-LA
CLI-16-04	SHINE MEDICAL TECHNOLOGIES, INC. (Medical Radioisotope Production Facility)	02/25/2016 50-608-CP
CLI-16-03	NEXTERA ENERGY SEABROOK, LLC (Seabrook Station, Unit 1)	02/25/2016 50-443-LR
CLI-16-02	NUCLEAR INNOVATION NORTH AMERICA LLC (South Texas Project Units 3 and 4)	02/09/2016 52-012-COL 52-013-COL
CLI-16-01	FLORIDA POWER & LIGHT CO. (Turkey Point, Units 6 and 7)	02/05/2016 52-040-COL 52-041-COL

Regulatory Guides for Power Reactors

1.127	Inspection of Water-Control Structures Associated with Nuclear Power Plants	02/2016

Draft Reg Guides Issued for Public Comment		
	None	

Information Notices

IN-16-08	Inadequate Work Practices Resulting in Faulted Circuit Breaker Connections	6/17/2016
IN-16-07	Operating Experience Regarding Impacts on Site Electrical Power Distribution from Inadequate Oversight of Contractor Activities	6/20/2016
IN-16-06	Uranium Hexafluoride Cylinders with Potentially Defective 1-Inch Valves	5/12/2016
IN-16-05	Operating Experience Regarding Complications from a Loss of Instrument Air	4/27/2016
IN-16-04	ANSI N14.5-2014 Revision and Leakage Rate Testing Considerations	3/28/2016
IN-16-03	Revision to the National Institute of Standards and Technology Standard for Radium-223 and Impact on Dose Calibration for the Medical Use of Radium-223 Dichloride	1/12/2016
IN-16-02	Improper Seating of Reactor Vessel Surveillance Capsules	1/15/2016
IN-16-01	Recent Issues Related to the Commercial Grade Dedication of Allen Bradley 700-RTC Relays	2/17/2016

Regulatory Issue Summaries

RIS-16-09	Preparation and Scheduling of Operator Licensing Examinations	6/16/2016
RIS-16-08	Process for Scheduling and Allocating Resources in Fiscal Year 2019 for the Review of New Licensing Applications for Light-Water Reactors and Non-Light-Water Reactors	6/07/2016
RIS-16-07	Containment Shell or Liner Moisture Barrier Inspection	5/09/2016
RIS-16-06	NRC Regulation of Radium-226 Under Military Control and for Coordination on Cercla Response Actions at DOD Sites with Radioactive Materials	5/09/2016
RIS-16-05	Embedded Digital Devices in Safety-Related Systems	4/29/2016
RIS-16-04	Clarification of 10 CFR 50.46 Reporting Requirements and Recent Issues with Related Guidance Not approved for Use	4/19/2016
RIS-16-03	10 CFR 50.59 Issues Identified in NRC's San Onofre Steam Generator Tube Degradation	4/13/2016

Regulatory Issue Summaries

	Lessons Learned Report	
RIS-16-02	Design Basis Issues Related to Tube-to-Tubesheet Joints in Pressurized-Water Reactor Steam Generators	3/23/2016
RIS-16-01	Nuclear Energy Institute Guidance for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services	3/16/2016

NUREGs

NUREG-2193	Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station Docket Number 50-346 FirstEnergy Nuclear Operating Company	April 2016
NUREG-2194	Standard Technical Specifications, Westinghouse Advanced Passive 1000 (AP 1000) Plants	April 2016
NUREG-2195	Consequential SGTR Analysis for Westinghouse and Combustion Engineering Plants with Thermally Treated Alloy 600 and 690 Steam Generator Tubes (Draft Report for Comment)	May 2016
NUREG-2196	BWR ECCS Pump Suction Concerns following a LOCA	May 2016
NUREG/CR-7209	A Compendium of Spent Fuel Transportation Package Response Analyses to Severe Fire Accident Scenarios	Jan 2016
NUREG/CR-7212	Technical Manual and User's Guide for MILDOS-AREA Version 4	April 2016
NUREG/CR-7213	MILDOS-AREA Computation Verification Version 4	April 2016
NUREG/CR-7214	Toward a More Risk-Informed and Performance-Based Framework for the Regulation of the Seismic Safety of Nuclear Power Plants	May 2016
NUREG/CR-7215	Spent Fuel Pool Project Phase 1: Pre-Ignition and Ignition Testing of a Single Commercial 17x17 Pressurized Water Reactor Spent Fuel Assembly under Complete Loss of Coolant Accident Conditions	April 2016
NUREG/CR-7216	Spent Fuel Pool Project Phase II: Pre-Ignition and Ignition Testing of a 1x4 Commercial 17x17 Pressurized Water Reactor Spent Fuel Assemblies under Complete Loss of Coolant Accident Conditions	April 2016

NUREGs

NUREG-1556, Volume 19, Revision 1	Guidance for Agreement State Licensees About NRC Form 241 "Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters" and Guidance for NRC Licensees Proposing to Work in Agreement State Jurisdiction (Reciprocity), Final Report	June 2016
NUREG-1927, Revision 1	Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel Final Report	June 2016
NUREG-2156	The U.S. HRA Empirical Study Assessment of HRA Method Predictions against Operating Crew Performance on a U.S. Nuclear Power Plant Simulator	June 2016
NUREG-1556, V16, R1, DFC	Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Licenses Authorizing Distribution to General Licensees – Draft Report for Comment	June 2016
NUREG/KM-0001, Supplement 1	Three Mile Island Accident of 1979 Knowledge Management Digest – Recovery and Cleanup	June 2016
NUREG/KM-0001, Revision 1	Three Mile Island Accident of 1979 Knowledge Management Digest – Overview	June 2016
NUREG/BR-0099, R14	U.S. Nuclear Regulatory Commission *Overview*	June 2016
NUREG-1437, S48, FINAL ERRATA Sheet	Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 48 Regarding South Texas Project, Units 1 and 2 Final Report ERRATA Sheet	June 2016
NUREG/CR-7220	SNAP/RADTRAD 4.0: Description of Models and Methods	June 2016
NUREG-2195, DFC	Consequential SGTR Analysis for Westinghouse and Combustion Engineering Plants with Thermally Treated Alloy 600 and 690 Steam Generator Tubes – Draft Report for Comment	May 2016
NUREG/CR-4513, Revision 2	Estimation of Fracture Toughness of Cast Stainless Steels during Thermal Aging in LWR Systems	May 2016
NUREG-0090, V38	Report to Congress on Abnormal Occurrences Fiscal Year 2015	May 2016
NUREG-2182, V3	Final Safety Evaluation Report for the Combined License for Enrico Fermi 3, Docket Number 52-033, DTE Electric Company, Appendices B to F	May 2016
NUREG-2182, V2	Final Safety Evaluation Report for the Combined License for Enrico Fermi 3, Docket Number 52-033, DTE Electric Company, Chapters 10 to 20, Appendix A	May 2016
NUREG-2182, V1	Final Safety Evaluation Report for the Combined License for Enrico Fermi 3, Docket Number 52-033, DTE Electric Company, Chapters 1 to 9	May 2016

NUREGs

NUREG-2196	BWR ECCS Pump Suction Concerns following a LOCA	May 2016
NUREG/IA-0467	RELAP5 Analysis of Mitigation Strategy for Extended Blackout Power Condition in PWR	May 2016
NUREG/CR-7155, SAND2012-10702P	State-of-the-Art Reactor Consequence Analyses Project: Uncertainty Analysis of the Unmitigated Long-Term Station Blackout of the Peach Bottom Atomic Power Station	May 2016
NUREG/CR-7214	Toward a More Risk-Informed and Performance-Based Framework for the Regulation of the Seismic Safety of Nuclear Power Plants	May 2016
NUREG/CR-7200	Influence of Coupling Erosion and Hydrology on the Long-Term Performance of Engineered Surface Barriers	May 2016
NUREG-2184	Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, Final Report	May 2016
NUREG-1415, V29, N2	Office of the Inspector General Semiannual Report to Congress October 1, 2015 – March 31, 2016	April 2016
NUREG/BR-0508, R1	Reactor Oversight Process	April 2016
NUREG/CP-0303, V5, EPRI 3002005205	Methods for Applying Risk Analysis to Fire Scenarios (MARIAFIRES) - 2012, Volume 5, Module 5: Advanced Fire Modeling	April 2016
NUREG/CP-0303, V4, EPRI 3002005205	Methods for Applying Risk Analysis to Fire Scenarios (MARIAFIRES) - 2012, Volume 4, Module 4: Human Reliability Analysis (HRA)	April 2016
NUREG/CP-0303, V3, EPRI 3002005205	Methods for Applying Risk Analysis to Fire Scenarios (MARIAFIRES) - 2012, Volume 3, Module 3: Fire Analysis	April 2016
NUREG/CP-0303, V2, EPRI 3002005205	Methods for Applying Risk Analysis to Fire Scenarios (MARIAFIRES) - 2012, Volume 2, Module 2: Electrical Circuits	April 2016
NUREG/CP-0303, V1, EPRI 3002005205	Methods for Applying Risk Analysis to Fire Scenarios (MARIAFIRES) - 2012, Volume 1, Module 1: Probabilistic Risk Analysis (PRA)	April 2016
NUREG-2194, V2	Standard Technical Specifications, Westinghouse Advanced Passive 1000 (AP1000) Plants, Volume 1: Bases	April 2016
NUREG-2194, V1	Standard Technical Specifications, Westinghouse Advanced Passive 1000 (AP1000) Plants, Volume 1: Specifications	April 2016
NUREG-0713, V36	Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities 2014: Forty-Seventh Annual Report	April 2016

NUREGs

NUREG/CR-7216	Spent Fuel Pool Project Phase II: Pre-Ignition and Ignition Testing of a 1x4 Commercial 17x17 Pressurized Water Reactor Spent Fuel Assemblies under Complete Loss of Coolant Accident Conditions	April 2016
NUREG/CR-7215	Spent Fuel Pool Project Phase 1: Pre-Ignition and Ignition Testing of a Single Commercial 17x17 Pressurized Water Reactor Spent Fuel Assembly under Complete Loss of Coolant Accident Conditions	April 2016
NUREG-2178, V1, EPRI 3002005578	Refining And Characterizing Heat Release Rates From Electrical Enclosures During Fire (RACHELLE-FIRE) Volume 1: Peak Heat Release Rates and Effect of Obstructed Plume	April 2016
NUREG/CR-7197	Heat Release Rates of Electrical Enclosure Fires (Helen-Fire), Final Report	April 2016
NUREG-2179, V2	Environmental Impact Statement for Combined License (COL) for Bell Bend Nuclear Power Plant, Final Report, Chapters 9 to 12, Appendices A to N	April 2016
NUREG-2179, V1	Environmental Impact Statement for Combined License (COL) for Bell Bend Nuclear Power Plant, Final Report, Chapters 1 to 8	April 2016
NUREG/CR-7213, ANL/EVS-15/10	MILDOS-AREA Computation Verification Version 4	April 2016
NUREG/KM-0009	Historical Review and Observations of Defense-in-Depth	April 2016
NUREG-2193, Supplement 1	Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station Docket Number 50-346 FirstEnergy Nuclear Operating Company, Supplement 1	April 2016
NUREG-2193, Volume 2	Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station Docket Number 50-346 FirstEnergy Nuclear Operating Company, Sections 4 to 6 Appendices	April 2016
NUREG-2193, Volume 1	Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station Docket Number 50-346 FirstEnergy Nuclear Operating Company, Sections 1 to 3	April 2016
NUREG/CR-7212, ANL/EVS-15/9	Technical Manual and User's Guide for MILDOS-AREA Version 4	April 2016
NUREG/BR-0117 No. 16-02	NMSS New Link Spring 2016	March 2016
NUREG-2174	Impact of Variation in Environmental Conditions on the Thermal Performance of Dry Storage Casks, Final Report	March 2016
NUREG/IA-0465	Fuel Rod Performance Uncertainty Analysis During Overpressurization Transient for Kuosheng Nuclear Power Plant with TRACE/ FRAPTRAN/ DAKOTA Codes in SNAP Interface	March 2016

NUREGs

NUREG/IA-0464	RELAP5/MOD3.3 Model Assessment and Hypothetical Accident Analysis of Kuosheng Nuclear Power Plant with SNAP Interface	March 2016
NUREG/CR-7177, Errata, ERI/NRC 13-210	Compendium of Analyses to Investigate Select Level 1 Probabilistic Risk Assessment End-State Definition and Success Criteria Modeling Issues	March 2016
NUREG/CR-4251/PNL-5461, V2, P2	Mitigative Techniques for Ground-Water Contamination Associated With Severe Nuclear Accidents, Case Study Analysis of Hydrologic Characterization and Mitigative Schemes	March 2016
NUREG/CR-4251/PNL-5461, V2, P1	Mitigative Techniques for Ground-Water Contamination Associated With Severe Nuclear Accidents, Case Study Analysis of Hydrologic Characterization and Mitigative Schemes	March 2016
NUREG/CR-4251/PNL-5461, V1, P2	Mitigative Techniques for Ground-Water Contamination Associated With Severe Nuclear Accidents, Anaylysis of Generic Site Conditions	March 2016
NUREG/CR-4251/PNL-5461, V1, P1	Mitigative Techniques for Ground-Water Contamination Associated With Severe Nuclear Accidents, Anaylysis of Generic Site Conditions	March 2016
NUREG-1556, V2, R1	Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Industrial Radiography Licenses, Final Report	March 2016
NUREG-2188	U.S. Operating Experience with Thermally Treated Alloy 600 Steam Generator Tubes Through December 2013	March 2016
NUREG-1925, R3	Research Activities FY 2015-FY 2017	February 2016
NUREG-1437, S57	Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding LaSalle County Station, Units 1 and 2, Draft Report for Comment	February 2016
NUREG-1100, V32	Congressional Budget Justification: Fiscal Year 2017	February 2016
NUREG-1021, R11, DFC	Operator Licensing Examination Standards for Power Reactors, Draft Report for Comment	February 2016
NUREG/BR-0128, Revision 5	A Guide to Open Commission Meetings February 2016	February 2016
NUREG/IA-0460	Model 3D Cores for PWR Using Vessel Components in TRACEv5.OP3	January 2016
NUREG-2187, V2	Confirmatory Thermal-Hydraulic Analysis to Support Specific Success Criteria in the Standardized Plant Analysis Risk Models—Byron Unit 1, Appendices D to G	January 2016
NUREG-2187, V1	Confirmatory Thermal-Hydraulic Analysis to Support Specific Success Criteria in the Standardized Plant Analysis Risk Models—Byron Unit 1, Chapters 1 to 8 - Appendices A to C	January 2016

NUREGs

NUREG/CR-7209, PNNL-24792, DFC	A Compendium of Spent Fuel Transportation Package Response Analyses to Severe Fire Accident Scenarios, Draft Report for Comment	January 2016
NUREG/BR-0117, N16-01	NMSS Quarterly Newsletter Winter 2016	January 2016
NUREG-2114	Cognitive Basis for Human Reliability Analysis	January 2016

Vendor Inspection Reports Issued, Completed, and Planned Inspections

Namco Controls Corporation, Elizabethtown, NC, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs specifically, as it pertains to Namco's design, qualification, fabrication, testing, commercial-grade-dedication, and manufacturing of safety-related limit switches for operating nuclear plants and AP1000 plants.	TBD
Aecon Industrial, Cambridge, Canada, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs specifically, as they pertain to Aecon's fabrication activities of mechanical modules for the Westinghouse Electric Company (WEC) AP1000 reactor design. The inspection will focus on the fabrication, assembly, and testing activities associated with the mechanical modules being supplied to Vogtle Units 3 & 4 and VC Summer Units 2 & 3.	TBD
Mangiarotti S.p.A., Monfalcone Italy, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as specifically as they pertain to activities conducted at that facility related to issues identified with the oversight of suppliers and controls for the purchase of material and services. Additionally, the inspection will observe ongoing fabrication activities of components for NRC regulated facilities.	TBD
Westinghouse Electric Company, Warrendale, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as specifically as they pertain to safety-related activities associated with aspects of the AP1000 PMS system and subsystems.	TBD
SPX, Copes-Vulcan, McKean, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as specifically as they pertain to the design, manufacturing, and testing of the squib valves for the Westinghouse AP1000 reactor.	TBD

Vendor Inspection Reports Issued, Completed, and Planned Inspections

Westinghouse Electric Company (WEC), limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as specifically as they pertain to corrective actions to issues identified during an NRC Engineering Design Verification (EDV) Inspection associated with Inspection Report No. 99900404/2011-201 performed in June and July, 2011.	TBD
General Electric (GE) Consolidated Valve, Pineville, LA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to activities conducted at your facility related to the design, manufacture, and qualification testing of the main steam safety valves for the AP1000 reactor design.	6/15/2016
Equipos Nucleares, S.A (ENSA), Cantabria, Spain, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to the design, fabrication, assembly, and testing of components for NRC regulated facilities.	6/09/2016
Electroswitch Corporation, Weymouth, MA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to their design, qualification, commercial-grade-dedication, and manufacturing of safety related power switches and relays to operating nuclear power plants.	5/27/2016
Lisega, Inc., Kodak, TN, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to the design and manufacturing of safety-related ASME Section III, Subsection NF, Class 1, 2, 3, and non-code safety related piping supports being manufactured for the AP1000 reactor design.	5/25/2016
Exelon PowerLabs, Coatesville, PA limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to as it pertains to their processes for the calibration of measuring and test equipment.	4/26/2016
ASCO Valve, Inc., Aiken, SC, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to ASCO design, fabrication, and commercial-grade dedication of safety-related solenoid valves to operating nuclear power plants. In addition, the staff will review the environmental qualifications performed for AP1000 safety-related solenoid valves.	4/15/2016

Vendor Inspection Reports Issued, Completed, and Planned Inspections

Carboline Corporate, St. Louis, MO, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to activities conducted at their facilities related to the design and manufacturing of safety-related coatings for the domestic nuclear power industry.	4/14/2016
Westinghouse Electric Company, Warrendale, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to activities supporting the integrated system validation (ISV) as they pertain to safety-related activities associated with the development of aspects of the AP-1000 control room design.	4/05/2016
Cameron Measurement Systems, City of Industry, CA, limited scope inspection to review selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to safety-related components supplied to nuclear power plants.	2/25/2016
SPX, Copes-Vulcan, McKean, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to safety-related components supplied to nuclear power plants, specifically associated with the testing of explosive cartridges being installed on squib valves for the Westinghouse AP 1000 reactor in response to Nonconformance 9990080/201-2012-01.	1/28/2016
Canberra Industries, Meriden, CT, limited-scope inspection to assess compliance with selected portions of their quality assurance (QA) program as they pertain to design, fabrication, testing, and commercial grade dedication of radiation monitoring equipment supplied to operating nuclear power plants.	1/21/2016
Nova, Nuclear Division, Middleburg Heights, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain to safety-related components supplied to nuclear power plants.	1/15/2016
C&D Technologies, Blue Bell, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs as they pertain C&D Technologies' design and qualification of batteries supplied to operating nuclear power plants. In addition, the inspection will address the unresolved item and review corrective actions associated with nonconformances identified in the, March 2014, NRC inspection report number (IR) 99901385/2014-201.	1/08/2016

Vendor Inspection Reports Issued, Completed, and Planned Inspections

Sulzer Pumps (US) Inc., Chattanooga, TN limited-scope inspection to assess compliance with selected portions of their quality assurance (QA) and 10 CFR Part 21 programs, specifically as they pertain to design, commercial-grade-dedication and manufacturing of safety-related pumps to operating nuclear power plants.	1/05/2016
Westinghouse Electric Company (WEC), Warrendale, PA, limited scope inspection to assess compliance with selected portions of their quality assurance (QA) program as they pertain to safety-related activities associated with the development of aspects of the AP-1000 PMS system and subsystems.	1/05/2016

NRC Vendor Inspection Reports can be obtained from:

http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp/insp-reports.html

Attachment 8

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

NRMCC Report

(Meeting notes, slides, and Action Plan are Attached)

NUCLEAR RISK MANAGEMENT COORDINATING COMMITTEE AGENDA
Doubletree in Portland, Oregon
February 17, 2016, from 1:00pm – 5:00pm Pacific

CALL IN #708-579-8319
CONFERENCE CODE: 405631

Members Attended	Members Absent	Guests

1) **Call to Order**

2) **Roll Call and Announcements**

3) **Approval of Agenda**

4) **Approval of September 2, 2015, NRMCC Meeting Minutes** (Attachment 1 -- Pages 2-15)

5) **Integrated Risk Management Milestone/Roadmap Schedule**
   a) Updating risk-related activities in ASME/ANS JCNRM
   b) Updating risk-related activities in ANS (Attachment 2 -- Page 16)
   c) Updating risk-related activities in ASME

6) **Industry Reports** (~10 minutes each)
   a) NEI – Anderson
   b) PWROG - Linthicum
   c) BWROG - Rishel
   d) EPRI –Lewis
   e) U.S. NRC – Drouin/Yeilding
   f) U.S. DOE – O'Brien
   g) IEEE – Ballassi

7) **NRMCC Sunset or Transition** (Attachment 3/Transition Plan -- Pages 17-20)

8) **New Business**

9) **Review of New Action Items** – Schroeder

10) **Adjournment**

NUCLEAR RISK MANAGEMENT COORDINATING COMMITTEE (NRMCC) MINUTES

ASME Offices; Two Park Avenue, New York City, New York
September 2, 2015

Members Attended	Members Absent	Guests
C. Rick Grantom (ASME NRMCC Cochair), CRG LLC	N. Prasad Kadambi (ANS NRMCC Cochair), Individual	Paul Amico, Jensen Hughes
Victoria Anderson, Nuclear Energy Institute , NEI	Homayoon Dezfuli, NASA	Andrea Maioli, Westinghouse
Robert Bari, BNL	Gary DeMoss, PSEG Nuclear	
Sidney Bernsen, Individual	Stuart R. Lewis, EPRI	
Robert J. Budnitz, LBNL	Craig Sellers, Enercon Services	
K. Raymond Fine, FENOC for Roy Linthicum (PWROG Rep.)		
*James Liming for George Ballassi, IEEE		
*James O'Brien, DOE		
Pat Schroeder, ANS Staff		
Jeff Stone, Exelon, for Robert Rischel (BWROG Rep.)		
Dale Yeilding, NRC (for Mary Drouin)		
*Robert Youngblood, INL		

*participated by phone

1) Call to Order

The meeting was called to order by NRMCC Co-chair Rick Grantom.

2) Roll Call and Announcements

Roll call was taken and introductions were made.

3) Approval of Agenda

With NRMCC Co-chair Prasad Kadambi out of the country and not in attendance, Rick Grantom asked Robert Budnitz to represent the American Nuclear Society (ANS). The agenda was approved as presented.

4) Integrated Risk Management Milestone/Roadmap Schedule

a) Updating risk-related activities in American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) Joint Committee on Nuclear Risk Management (JCNRM)

Rick Grantom reviewed the JCNRM milestone schedule. He explained that the JCNRM was expediting the release of the revision to Part 5 on external events in advance of the next edition of ANSI/ASME/ANS RA-S, "Standard for Level 1 / Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," through a code case. Good progress was being made on all JCNRM standards. See Attachment 1 for the milestone schedule providing estimated release dates for all JCNRM standards. Grantom commended JCNRM members for their efforts to meet goals.

When questioned, Liming stated that IEEE Std. P1819, "Draft Standard for Risk-Informed Categorization and Treatment of Electrical and Equipment at Nuclear Power generating Stations and Other Facilities," had been drafted and was approved to go to ballot once a staff editorial review was completed. He offered to send a copy of the draft for NRMCC review.

Action Item 9/2015-01: James Liming on behalf of George Ballassi to provide a copy of the draft of IEEE Std. P1819 "Draft Standard for Risk-Informed Categorization and Treatment of Electrical and Equipment at Nuclear Power generating Stations and Other Facilities," to Pat Schroeder/Rick Grantom to distribute to the NRMCC for review. (Completed before the end of the meeting.)

Andrea Maioli stated that the JCNRM Subcommittee on Standards Maintenance (SC-SM) met earlier today and confirmed that the next edition of ASME/ANS RA-S, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," remained on schedule.

b) Updating risk-related activities in ANS (Attachment 2)

Members reviewed the ANS schedule (issued in concert with the Risk-informed, Performance-based Principles and Policy Committee, RP3C) of risk-informed and performance-based (RIPB) standards in development. Grantom noted that some of the ANS standards still needed a JCNRM liaison. Budnitz added that the Subcommittee on Risk Application (SCoRA) would be meeting this afternoon and had on their agenda to appoint a JCNRM liaison to each ANS RIPB standard.

Grantom questioned Liming whether the Institute of Electrical and Electronics Engineers (IEEE) had any other RIPB standards. Liming replied that IEEE had a second standard that used RIPB insights that was previously issued. The standard is IEEE 338-2012, "Standard for Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems." Liming said that IEEE did not have plans for any new RIPB standards but may consider adding an RIPB appendix to some of their current standards. Liming confirmed that 1819 used the 4-part system referenced in 10 CFR 50.69, and that it could be applied to other IEEE standards once completed. Ultimately, he believed plants would want to incorporate 1819 into their procedures. Grantom asked Liming to provide status information about IEEE standards in development that used RIPB.

Action Item 9/2015-02: James Liming and/or George Ballassi to provide a schedule of IEEE standards in development that use RIPB as well as the reporting committee, scope, chair, etc. (Completed before the end of the meeting – See Attachment 3.)

c) Updating risk-related activities in ASME

Robert Budnitz explained that the ASCE-ASME Journal of Risk & Uncertainty in Engineering Systems was a fairly new journal. He had been involved from the beginning and stated that it was initiated because a group of individuals saw a need. He suggested that members check out the journal.

5) Discussion of Follow-up Items from Previous NRMCC Meeting

Follow-up items were discussed under old business.

6) Industry Reports

a) Nuclear Energy Institute (NEI)

Victoria Anderson reported that she expected new industry guidance from NEI on the peer review process to be issued shortly. Additionally, she informed members that NEI was developing an appendix on closing out Facts & Observations (F&Os) developed under the peer review process. The hope was to make users

less leery of probabilistic risk assessment (PRA). Members informed Anderson of the suggestion to develop a training program for peer reviews. She suggested that the training be web-based so travel was not needed.

b) Pressurized Water Reactor Owners' Group (PWROG)

Ray Fine provided a report for Roy Linthicum on PWROG activities. He informed members that they anticipated a significant number of peer reviews for 2016 and would be challenged in terms of staff and leads; several of the reviews could overlap to further stretch reviewer resources. Each team needs seven members.

Fine informed member of a recent NRC direction on Certified PRAs. A combined board would be created, both NRC and industry, which would perform and manage all peer reviews and the closing of F&Os. In concept it sounded good in that if you have a Certified PRA, you would get an automatic pass for all application submittals. Fine recognized a downside as NRC would take the plant PRA and use it in house for Significance Determination Process (SDP) in place of the Standardized Plant Analysis Risk (SPAR) Model. Fine explained that this could be fraught with complications similar to what happened when the NRC used the Vogtle model for Level 3 development placing an unexpected burden on Southern PRA staff as a result. He believed that the NRC benefit would be huge as they could walk away from SPAR and their reviews would significantly decrease in scope and concept. On the other hand, he anticipated that utilities would incur a significant cost of doing this. Fine expected that the cost of peer reviews and F&O closures would increase significantly, as well as, burden utility staff dealing with NRC interface and invasiveness which would far outweigh the application benefit as it would be an ongoing challenge. There would also be the added burden of new, full scope peer reviews, process changes, closing of F&Os maintaining the documentation, escalation of technical adequacy which could be like App B quality requirements. For these reasons, the PWROG does not feel that a Certified PRA offers any tangible benefit to utilities at this time.

Fine reported that the PWROG would begin a pilot through NEI and the PWROG testing a lesser concept to benchmark and evaluate their models in place of SPAR (concept currently under development and may change in scope) but were not taking that to a certified concept. Although there was significant industry apprehension with the pilot, the effort will be made. However considering NRC SPAR cannot appropriately reflect spatial interaction models and uniquely modified plants to address specific challenges found as a result of these models, there may be a benefit to doing this for SDP. Dale Yeilding suggested that Fine work with Kevin Coyne at NRC to insure collaboration of this effort. Yeilding added that the NRC was working with the NEI task group to improve peer reviews.

Fine informed members that the industry was leaning towards the use of independent assessors to address the open F&O challenge. They were currently determining the best way to approach this process, as it is an additional burden to all during an already challenging time but vital to address due to NRC invasiveness in application submittals.

Fine explained that they needed very specific roadmaps of any changes when standards are revised and felt this should be provided by the JCNRM. This roadmap would need to indicate which high-level requirements and supporting requirements are new and therefore not covered by previously performed peer reviews. This change document needs to be very clear and specific where warranted, as this will affect future application submittals and their interface with the NRC. Fine explained that changes resulted in significant industry burden to implement with associated cost to perform assessments, not to mention cost and burden for follow on peer reviews where needed, F&O closure etc. Although improvements to the standards are good, the burden it places on an industry already under considerable pressure to justify continued operation must be recognized. The cost to build and maintain PRAs is outstripping any benefit from applications, and we need to ask ourselves if that additional level of detail being asked for in the standard is necessary. Fine confirmed that he addressed the need for a roadmap of changes to the JCNRM Subcommittee on Standards Maintenance (SC-SM) and would bring this up at the JCNRM Standards Committee.

c) Boiling Water Reactor Owners' Group (BWROG)

Jeff Stone provided a report on behalf of Robert Rishel for the BWROG. A list of BWROG issues related to JCNRM standards were provided and discussed (See Attachment 4 for the list). Stone explained that extensive resources were needed to maintain the current RG 1.200 models. It was important to understand the benefits. Stone estimated the cost to maintain the fire model was about a half million dollars. Fine reiterated that the cost was outweighing the benefit. Grantom acknowledged the amount of resources to comply. He added that the standards provided increased safety and enabled owners to stay in business. The importance of utility representation in the development of these standards was recognized. Both Stone and Fine agreed but stated that some utility members were not initially welcomed on JCNRM writing groups. Fine added that the situation was due in part to the lack of engagement of some utility members which he stated had been resolved. Members discussed specific difficulties meeting the standard. In some instances, it was believed to be a result of misunderstanding requirements. Grantom agreed that "training" for peer review leaders would be beneficial. Paul Amico added that there were additional difficulties due to multiple reviewer methods. Grantom asked members, based on the discussion, if there was something within the standards arena that could be done to address these issues. Stone suggested that conservatism could be addressed in the standard. Fine added that conservative should also be addressed in training. Suggestions included the following:

- Roadmap with identification of changes in revised standards
- Training for peer review leads and possibly managers
- Conservatism addressed in standards and training

Action Item 9/2019-03: Rick Grantom to provide the BWROG list of issues in JCNRM standards to subcommittee chairs to identify ways to address in JCNRM standards.

d) Electric Power Research Institute (EPRI)

Stuart Lewis provided a written report in advance. See Attachment 5 for the report.

e) U.S. Nuclear Regulatory Commission (NRC)

Dale Yeilding provided an update of NRC activities. He reported that Donnie Harrison continued to work with the Advanced Light Water Reactor (ALWR) Working Group to incorporate the NRC's interim staff guidance on ALWR. He reiterated that RG 1.200 would not endorse new standards for about three years. A revision of RG 1.200 would be issued as a draft to publicly provide the NRC's position. It was possible that several drafts of RG 1.200 would be issued to accommodate the release of JCNRM standards. When questioned, Yeilding confirmed that the NRC was doing their best to reduce exceptions to standards when endorsed. Lastly, Yeilding informed members of an Uncertainty Workshop scheduled in D.C. on October 18-19, 2015, led by Mary Drouin.

f) U.S. Department of Energy (DOE)

James O'Brien reported that the DOE was working on a project using RIPB to reduce conservatism and improve methods. They were also looking at risk insights relative to managing seismic risk. O'Brien added that the Nonreactor Nuclear Facilities Consensus Committee he chaired for ANS was working on an integrated safety assessment standard – ANS-57.11, "Integrated Safety Assessments for Fuel Cycle Facilities."

g) Institute of Electrical and Electronics Engineers (IEEE)

James Liming stated that he covered IEEE activities when asked under other agenda items. He confirmed that he had already completed the action items to provide a copy of IEEE draft standard 1819 to Rick Grantom and Pat Schroeder for distribution to the NRMCC. He also provided requested details about IEEE

standards that use RIPB. Liming reiterated that there were only two IEEE standards with RIPB – 1) IEEE Std. 1819 that would be issued for ballot as soon as IEEE editors performed their review and 2) IEEE Std. 338-2012, "Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety," that had already been issued.

7) Old Business

a) ACTION ITEM 9/2013-06: Rick Grantom to extend an invitation to the American Society of Civil Engineers (ASCE) for a representative on the NRMCC. (Transferred from Ralph Hill to Rick Grantom at the February 2015 meeting.)
Budnitz reported that he had made contact with ASCE, and they were not interested in participating on the NRMCC. As such, Rick Grantom requested that the action item be closed.

b) ACTION ITEM 9/2014-01: Pat Schroeder to provide all RIPB standards to the JCNRM and SCoRA for review and comment in parallel with the ANS consensus committee ballot and ACTION ITEM 9/2015-10: To note on the ANS RIPB Standards Schedule when standards are sent to the JCNRM/SCoRA for review. (On-going)
Patricia Schroeder reported that there were no ANS RIPB standards issued for ballot since the last meeting but that any future standards would be provided to the JCNRM standards committee and SCoRA when issued for ballot.

c) ACTION ITEM 9/2014-04: Robert Rischel/Gary DeMoss to provide PRA cost/benefit. (Amended at February 2015 meeting to include Gary DeMoss to facilitate.)
The action item remained open.

d) ACTION ITEM 9/2014-05: Prasad Kadambi and Rick Grantom to review the roster and strategic plan to determine if any changes are needed. (Updated roster & strategic plan available as Attachment 2 & 3 of previous minutes)
The action item remained open pending further discussion under new business.

e) Action Item 2/2015-12: Prasad Kadambi to contact Robert Bari to determine his interest in remaining on the NRMCC.
Interest was confirmed and the action item was closed.

f) Action Item 2/2015-13: Prasad Kadambi to contact the National Aeronautics and Space Administration (NASA) and the National Fire Protection Association (NFPA) to extend an invitation to join the NRMCC.
Members recognized that Dr. Homayoon Dezfuli with NASA accepted an invitation to join the NRMCC. The action item will be amended to reflect only the need for an NFPA representative.

8) New Business

Robert Budnitz reported that the JCNRM Executive Committee discussed the value of the NRMCC at their meeting the previous day. JCNRM Executive Committee members did not recognize a benefit of the NRMCC. Budnitz offered his view that the value of the NRMCC when formed was harmonizing PRA standards between standards development organizations (SDOs) and regulators. The merger of the ANS Risk Informed Standards Committee and the ASME Committee on Nuclear Risk Management, has resulted in most all of the functions performed by the NRMCC being addressed by the JCNRM. Grantom added that there was value in continuing the NRMCC when the JCNRM was initially formed, but now that the JCNRM was running smoothly and SCoRA was responsible for interface, he felt that the NRMCC no longer had significant value. Grantom suggested that some NRMCC members could participate on SCoRA or on the JCNRM Executive Committee. As a founding member of the NRMCC, Robert Bari added that the overriding

issue when NRMCC was formed was coordinating ANS and ASME risk-informed activities. Adding other SDOs came later. Bari believed that the purpose of the NRMCC had been satisfied. Sidney Bernsen stated that he believed the NRMCC served a management function broader than standards and did not see how SCoRA could function in a management coordination level. If members don't feel it is possible to achieve this goal, he could understand why the NRMCC would be dissolved. Bernsen's recommendation would be to restructure the committee to a higher level. Budnitz suggested that the charter of the JCNRM Executive Committee be broaden to include management issues that are addressed at the semi-annual meetings.

Budnitz made the following motion:

> NRMCC moves to recommend to the parent boards its own dissolution with its function reassigned to the JCNRM with the responsibilities to be determined by the JCNRM.

The motion was approved with one abstention by Bernsen. Bernsen explained that he abstained because he would need to see the details of the dissolution plan before approving.

Action Item 9/2015-04: Robert Budnitz and Rick Grantom to inform their respective standards boards of the NRMCC motion and recommendation to dissolve the coordinating committee and provide a white paper/plan for its sunset for their approval.

Action Item 9/2015-05: Pat Schroeder to provide the white paper/plan to dissolve the NRMCC to NRMCC members for review before providing to each society's standards board.

9) Review of New Action Items

Action items were reviewed and confirmed.

10) Next Meeting

The next meeting was tentatively set for February 17, 2016, in Portland, Oregon, pending the outcome of the recommendation to dissolve the NRMCC and its sunset plan.

11) Adjournment

The meeting was adjourned.

Attachment 1

JCNRM Milestone Schedule

STANDARDS PROJECT	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
NEXT EDITION (Amico/Parry)	Working Groups revise Addendum B pursuant to CCIs Part 3 available		Part 2 available to SC-SM		Part 1 available to SC-SM	SC-SM comment on Parts 1, 2, 3						
EXPEDITED PART 5 (Ravindra)						Part 5 available to SC-SM		SC-SM comment on Part 5	Prepare Ballot	Consensus Ballot with likely reconsideration		
PART 4 (Nowlen)												Part 4 available
PARTs 6, 7, 8, 9 (Ravindra)									Part 9 available to SC-SM	SC-SM comment on Part 9		Parts 6, 7, & 8 available to SC-SM
ALWR (incl SMR) (Chapman)	WG revision (cont)	WG report on ALWR standard status	WG revision of draft ALWR standard									
LEVEL 2 PRA (Burns)	Publication for Trial Use	Trial Use activities underway	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Ne		
LEVEL 3 PRA (Woodard)	WG address Comments							Consensus ballot for Trial Use	BNCS and SB ballots	Editing (90 pages)		Publication for Trial Use
Non-LWR PRA (Fleming)		Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Ne		
LP/SD PRA (Wakefield)	Editing (300 pages)		Publication for Trial Use	Trial Use activities underway	WG Interactions with Pilots / Interpretations as Needed				Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Ne		
IWG MEETINGS (Grantom)						Chinese						
JCNRM MEETINGS LOCATIONS (Martinez)		9-13 Phoenix, AZ						Aug 31 to September 4 New York City				
BNCS MEETINGS LOCATIONS (Grantom)		16-20 Anapolis, MD				Pittsburgh, PA				7-8 Alexandria, VA		
ANS-SB MEETINGS LOCATIONS (Schroeder)						9 San Antonio					10 Washington	
	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015

JCNRM Milestone Schedule

STANDARDS PROJECT	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
NEXT EDITION (Amico/Parry)			Prepare Ballot	Review / comment ballot		Respond to comments. Revise ballot material		Consensus Ballot		BNCS and SB ballots	ANSI public comment period	Editing
EXPEDITED PART 5 (Ravindra)	BNCS and SB ballots	Editing	Part 5 published as code case									
PART 4 (Nowlen)	SC-SM comment on Part 4											
PARTs 6, 7, 8, 9 (Ravindra)	SC-SM comment on Parts 6, 7, 8											
ALWR (incl SMR) (Chapman)	Prep draft for Ballot: Final Ballot Readiness Review		Consensus Ballot for Trial Use		Comments addressed, recirculation if necessary	BNCS and SB ballots	Editing (100 pages)		Publication for Trial Use	Trial Use activities underway	WG Interactions with Pilo Interpretations as Need	
LEVEL 2 PRA (Burns)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as N		
LEVEL 3 PRA (Woodard)	Trial Use activities underway	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as N		
Non-LWR PRA (Fleming)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as N		
LP/SD PRA (Wakefield)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as N		
IWG MEETINGS (Grantom)				Chinese								
JCNRM MEETINGS LOCATIONS (Martinez)		15-18 Portland, OR							Boston, MA or Pittsburgh, PA			
BNCS MEETINGS LOCATIONS (Grantom)			2-3 ASME HQ, NYC			26-28 Charlotte, NC						
ANS-SB MEETINGS LOCATIONS (Schroeder)						14 New Orleans					8 Las Vegas	
	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016

JCNRM Milestone Schedule

STANDARDS PROJECT	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
NEXT EDITION (Amico/Parry)	Editing (350 pages)			Next Edition published								
EXPEDITED PART 5 (Ravindra)												
PART 4 (Nowlen)												
PARTs 6, 7, 8, 9 (Ravindra)												
ALWR (incl SMR) (Chapman)	ts/ ed	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots/ Interpretations as Needed		
LEVEL 2 PRA (Burns)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots/ Interpretations as Needed		
LEVEL 3 PRA (Woodard)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots/ Interpretations as Needed		
Non-LWR PRA (Fleming)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots/ Interpretations as Needed		
LP/SD PRA (Wakefield)	eeded	Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots / Interpretations as Needed						Report on Trial Use Activities to SC-SD and JCNRM	WG Interactions with Pilots/ Interpretations as Needed		
IWG MEETINGS (Grantom)												
JCNRM MEETINGS LOCATIONS (Martinez)		San Antonio, TX, or Albuqueque, NM							Minneapolis, MN, or St. Louis, MO			
BNCS MEETINGS LOCATIONS (Grantom)												
ANS-SB MEETINGS LOCATIONS (Schroeder)						11 San Francisco					Washington, DC	
	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017

Attachment 2

Schedule of ANS Standards in Development using RIPB Properties (September 2015)

Standards Project	Draft App'd by WG	+4 months SubC or Preliminary Review/Comment Resolutions	+6 months 1st CC Ballot/Comment Resolutions (concurrent PR)	+4 months 2nd CC Ballot/Comment Resolutions (concurrent PR)	+2 weeks ANS Standards Board Certification	+2 Weeks ANSI Approval	~4 months Publication
ANS-2.8 (Y. Gao) Determine External Flood Hazards for Nuclear Facilities *Environmental & Siting CC (C. Mazzola) JCNRM Rep: V. Anderson, D. Finnicum, R. Schneider	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
	Delay due to incorporation of comments from new WG members & decision to incorporate ANS-2.31.						
ANS-2.31 (Interim Chair C. Mazzola) Estimating Extreme Precipitation at Nuclear Facility Sites	Decision made to combine this standard into ANS-2.8.						
ANS-3.8.7 (R. Markovich) Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities *LLWRCC (G. Carpenter) JCNRM Rep:	On hold until DOE reviews draft.						
ANS-3.13 (J. August) Nuclear Facility Reliability Assurance Program (RAP) Development *LLWRCC (G. Carpenter) JCNRM Rep:	Feb 2017	Feb 2017 - May 2017	Jun 2017 - Nov 2017	Dec 2017 - Mar 2018	Apr 2018	Apr 2018	Aug 2018
ANS-20.1 (E. Blandford) Nuclear Safety Design Criteria for Fluoride Salt-Cooled High-Temperature NPPs *RARCC (G. Flanagan) JCNRM Rep: R. Bari, R. Budnitz	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
ANS-30.1 (M. Linn) Risk-Informed & Performance-Based NPP Design Process *RARCC (G. Flanagan) JCNRM Rep: D. Johnson	PINS submitted to ANSI August 11, 2015. Project being initiated. Draft completion date TBD.						
ANS-30.2 (D. Spellman) SSC Classification Criteria for Licensed Nuclear Facilities *RARCC (G. Flanagan) JCNRM Rep:	PINS being developed.						
ANS-54.1 (G. Flanagan) Nuclear Safety Criteria & Design Process for Liquid-Sodium-Cooled-Reactor NPPs *RARCC (G. Flanagan) JCNRM Rep: R. Budnitz	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
ANS-57.2 (R. Browdler) Design Requirements for LWR Spent Fuel Storage Facilities at NPPs	Mar 2016	Mar 2016 - June 2016	Jul 2016 - Dec 2016	Jan 2017 - Apr 2017	May 2017	May 2017	Sept 2017
ANS-57.3 (R. Browdler) Design Requirements for New Fuel Storage Facilities at LWRs *FWDCC (D. Eggett) JCNRM Rep:	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
	Delay due to in part to reappointment of WGC.						
ANS-57.11 (B. Eble) ISAs for Nonreactor Nuclear Facilities *NRNFCC (J. O'Brien) JCNRM Rep:	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017

ANS Contacts: Prasad Kadambi, NRMCC & RP3C Chair: Phone: [redacted] -- Email: [redacted]

Attachment 3

Patricia Schroeder

From: James Liming [redacted]
Sent: Wednesday, September 02, 2015 1:45 PM
To: CRG RISK LLC
Cc: [redacted]; George Ballassi; Yvonne Williams; Patricia Schroeder
Subject: Prospective IEEE Standard P1819 for NRMCC Review
Attachments: P1819 draft 6 June 16 for NPEC.pdf

Rick, as I stated during the NRMCC meeting today, I have been authorized to forward the attached draft IEEE proposed standard to the NRMCC for review and comment. This draft standard has been approved by the Institute of Electrical and Electronics Engineers, Standards Association (IEEE-SA) Nuclear Power Engineering Committee (NPEC) to go to an initial ballot for approval by IEEE-SA. This standard has been developed by Working Group 3.1 (Testing) of Subcommittee 3 (Operations, Maintenance, Aging, Testing, & Reliability). The current chairperson of Working Group 3.1 and Subcommittee 3 is Yvonne Williams (copied on this message).

As we discussed during the NRMCC meeting today, the only other IEEE standard we would probably consider fully risk-informed currently is IEEE Standard 338, "Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems." In that standard we added addenda showing acceptable risk-informed processes for establishing equipment surveillance test intervals.

These may be the only two current IEEE standards we would consider as fully "risk-informed" standards that are coordinated by IEEE-SA NPEC; however, there are other IEEE publications that may generally apply, such as IEEE 352, "IEEE Guide for General Principles of Reliability Analysis on Nuclear Power Generating Station Safety Systems," IEEE 577, "Standard Requirements for Reliability Analysis in the Design and Operation of Safety Systems for Nuclear Power Generating Stations," IEEE 933, "Guide for the Definition of Reliability Program Plans for Nuclear Power Generation Stations," and others.

For your information, I am a current member of IEEE-SA NPEC, Subcommittee 3, and Working Groups 3.1 (Testing), 3.3 (Reliability), and 3.4 (Aging); and I am a past Chairman of Subcommittee 3 and Working Group 3.3. Please contact me or George Ballassi with questions or comments. Thank you.

Best regards,

Jim

James K. Liming
Senior Consultant
ABSG Consulting Inc. (ABS Consulting)
Quantitative Risk Division
[redacted]
USA

Telephone (Direct Line): [redacted]
Telephone (Company Mobile): [redacted]
Fax: [redacted]
Email Address: [redacted]
Corporate Web Site: www.absconsulting.com

BWROG/IRIR and Exelon Positions for Standards Development at the NRMCC

- Extensive resources needed to maintain current RG 1.200 models
  - Level of detail required extremely high
  - Modifications can impact 4 or 5 models and require updates
  - Internal Events updates impact ALL models

- Additional scope of ASME Standards and RG 1.200 scope will increase the resources needed
  - What are the benefits of additional scope and detail?
  - How is this improving safety of the public?
  - Cost benefits of additional requirements must be evaluated
  - Working groups and oversight need to understand overall implications

- Nuclear industry is struggling to remain competitive with gas, wind, solar impacting the bottom line
  - Requires the industry to cut costs or shutdown units
  - Merchant fleets will not continue to invest in PRA if costs are prohibitive

- Long term need to look at level of detail in the standard
  - Can we reduce this detail and focus on what is risk significant?
  - Can we start now?

- Actual model owners do not have a significant voice on standards
  - Industry, the real owners of these models, is under represented
  - The Standards committees must actively and openly advocate for more real industry participation
  - Industry must also work to encourage this participation

- Training needs for Standard?
  - Should writers attend some peer reviews to understand implications of results?

EPRI Report to NRMCC – 2 September 2015

EPRI continues to be engaged in

- Developing and improving methods for performing various elements of PRA, with the intent of providing a clear path for meeting requirements in the PRA Standard(s)
- Providing guidance and tools to facilitate use of PRA methods; and
- Testing these developments through pilot applications (or working with other organizations to do so) to
    - Identify improvements
    - Where appropriate, provide lessons learned for enhancing PRA Standards.

Current areas of focus that may be particularly relevant to Standards activities include

- Seismic PRA
    - Seismic PRA continues to be the largest area of research in the EPRI Risk & Safety Management program. Much of the effort is focused on improving the ability to evaluate seismic fragilities. In addition to addressing specific elements, efforts entail attempting to align fragility analyses with data from earthquake experience and shake-table testing.
    - Completed the first phase of a project to develop method and guidance related to addressing seismically induced internal flooding and fire. Further development will be followed by pilot studies to confirm/improve the method.
    - Continuing to facilitate SPRA "early movers" workshops to share experiences with seismic PRAs and with hard spots in meeting Standards requirements. This is intended to compensate, at least partially, for the lack of full seismic PRA pilots prior to the evaluations being done in response to NTTF 2.1 – Seismic. Lessons from early seismic PRAs are being made available for the next round of seismic PRAs, and insights are being fed back to the Part 5 working group.
- Fire PRA
    - New report on heat release rates is about to be published after a very lengthy process.
    - Continuing efforts to address several aspects, including a new approach to initiating event frequencies; uncertainty analysis for fire PRA; and modeling of main control room abandonment scenarios.
- External Flooding PRA
    - Report due to be published in October 2015, capturing "state of knowledge" regarding flood hazards, with special focus on dam failures.
    - Continuing to develop approaches to filling gaps, including guidance relevant to flood responses (including use of portable, temporary equipment)
- High winds
    - Report with initial guidance on addressing high winds published in June
    - Work continues on developing a graded approach to addressing wind impacts, including for tornado missiles.

- Severe-accident analysis: projects underway to
    - Perform extensive investigations of mitigating strategies for severe accidents (complete for BWRs with Mark I/II containments; for Spanish BWR with Mark III containment for US BWRs with Mark III containments). Work in early stages for PWRs.
    - Completing extensive enhancements to MAAP5 (including targeted funding from Japanese government)
    - Completing detailed technical evaluations of the Fukushima accidents to support communicating lessons learned and, more specifically to aid in planning for Fukushima Dai-ichi decommissioning.

Schedule of ANS Standards in Development using RIPB Properties (February 2016)

Standards Project	Draft App'd by WG	+4 months SubC or Preliminary Review/Comment Resolutions	+6 months 1st CC Ballot/Comment Resolutions (concurrent PR)	+4 months 2nd CC Ballot/Comment Resolutions (concurrent PR)	+2 weeks ANS Standards Board Certification	+2 Weeks ANSI Approval	~4 months Publication
ANS-2.8 (Y. Gao) / *Environmental & Siting CC (C. Mazzola) Determine External Flood Hazards for Nuclear Facilities JCNRM Rep: V. Anderson, D. Finnicum, R. Schneider		Incomplete draft issued to the ESCC for prelminary review in late 2015.	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
ANS-2.23 (B. Kassawara) / *Environmental & Siting CC (C. Mazzola) Nuclear Plant Response to an Earthquake JCNRM Rep:		Draft provided to JCNRM & SCoRA for review 1/18/16.	ESCC Ballot closed 1/27/16	May 2016 - Aug 2016	Sept 2016	Sept 2016	Jan 2017
ANS-3.8.7 (R. Markovich) / *LLWRCC (G. Carpenter) Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities JCNRM Rep:		On hold until DOE reviews draft.					
ANS-3.13 (J. August) / *LLWRCC (G. Carpenter) Nuclear Facility Reliability Assurance Program (RAP) Development JCNRM Rep:	Feb 2017	Feb 2017 - May 2017	Jun 2017 - Nov 2017	Dec 2017 - Mar 2018	Apr 2018	Apr 2018	Aug 2018
ANS-20.1 (E. Blandford) / *RARCC (G. Flanagan) Nuclear Safety Design Criteria for Fluoride Salt-Cooled High-Temperature NPPs JCNRM Rep: R. Bari, R. Budnitz	Jun 2016	Jun 2016 - Sept 2016	Oct 2016 - Mar 2017	Apr 2017 - July 2017	Aug 2017	Aug 2017	Dec 2017
ANS-30.1 (M. Linn) / *RARCC (G. Flanagan) Risk-Informed & Performance-Based NPP Design Process JCNRM Rep: D. Johnson	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
ANS-30.2 (D. Spellman) / *RARCC (G. Flanagan) Classification of SSCs for New Nuclear Power Plants JCNRM Rep: R. Grantom		PINS in approval stage.					
ANS-54.1 (G. Flanagan) / *RARCC (G. Flanagan) Nuclear Safety Criteria & Design Process for Liquid-Sodium-Cooled NPPs *RARCC (G. Flanagan) JCNRM Rep: R. Budnitz	Mar 2016	Mar 2016 - June 2016	Jul 2016 - Dec 2016	Jan 2017 - Apr 2017	May 2017	May 2017	Sept 2017
ANS-57.2 (R. Browder) / *FWDCC (D. Eggett) Design Requirements for LWR Spent Fuel Storage Facilities at NPPs	Mar 2016	Mar 2016 - June 2016	Jul 2016 - Dec 2016	Jan 2017 - Apr 2017	May 2017	May 2017	Sept 2017
ANS-57.3 (R. Browder) / *FWDCC (D. Eggett) Design Requirements for New Fuel Storage Facilities at LWRs JCNRM Rep:	Dec 2015	Dec 2015 - Mar 2016	Apr 2016 - Sept 2016	Oct 2016 - Jan 2017	Feb 2017	Feb 2017	June 2017
ANS-57.11 (B. Eble) / *NRNFCC (J. O'Brien) ISAs for Nonreactor Nuclear Facilities JCNRM Rep:	Jun 2016	Jun 2016 - Sept 2016	Oct 2016 - Mar 2017	Apr 2017 - July 2017	Aug 2017	Aug 2017	Dec 2017
		Draft issued to NRNFCC for preliminary review in November 2015; significant comments received.					

ANS Contacts: Prasad Kadambi, NRMCC & RP3C Chair: Phone: [redacted] -- Email: [redacted]

*= ANS responsible consensus committee

FWDCC = Fuel, Waste, & Decommissioning Consensus Committee

LLWRCC = Large Light Water Reactor Consensus Committee

NRNFCC = Nonreactor Nuclear Facilities Consensus Committee

RARCC = Research and Advanced Reactors Consensus Committee

*** NRMCC TRANSITION PLAN ***

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3		The Committee coordinates the development and maintenance of Codes and Standards that address risk management and risk-informed decision-making for current and new nuclear power plants (both light water reactors (LWRs) and non-LWRs) and other nuclear facilities, through the full fuel cycle and related applications in order to avoid redundancy in requirements.	"Coordinates" implies obtaining and compiling information. This indicates that there are two activities here: (1) compiling information about each activity, current or new, in "the development and maintenance of the [relevant] standards …" and (2) developing priorities and recommending which SDO should be responsible for each standard.	The final clause gives a major rationale for assigning this responsibility to the NRMCC, namely "to avoid redundancy in requirements." Activity (1) is already being done by the JCNRM Executive Comittee and Main Committee through the activities of the SCoRA Subcommittee. Activity (2) Developing priorities which will involve other SDOs other than ASME and ANS should be the responsibility of the SDOs (i.e., ASME and ANS) with appropriate support from the governing Boards. For risk related items within ASME, priorities are established through BNCS recommendations from the BNCS TGRM as advised by JCNRM Main Commitee, JCNRM Subcommittee Development, JCNRM Subcommittee SCoRA, and the JCNRM Executive Committee. Within ANS priorities are established through the ANS SB recommendations from JCNRM as described above and, possibly additionally advised by its RP3C commitee through the ANS JCNRM Co-Chair.	For Activity (1), JCNRM SCoRA should continue coordination and information compilation activities and report to JCNRM which will then report to the governing Boards. This is considered a tactical responsibility. SCoRA Chair will become a member of the BNCS Task Group on Risk Management and will assist in the development and maintenance of the BNCS TGRM Risk Management Plan. The ANS SB will also receive a coordination report from the ANS JCNRM Co-Chair as appropriate. It is recommended that the Governing Boards should add an agenda item in their deliberations to allow for reporting of coordination activities as appropriate. Governing Boards will provide direction to the JCNRM. For Activity (2), the responsibility for developing priorities and assigning which SDO should be responsible for standards development involving other SDOs (e.g., ANS, IEEE) is recommended to be transferred to the SDO organizations (i.e., ASME, ANS). Coordination, prioritization, collaboration, etc. between SDOs would be performed by a new Inter-SDO committee. The committee would be chaired by SDO
4	NRMCC Charter	The Committee also facilitates the training and use of the resulting Codes and Standards.	Facilitating the training on the development and use of resulting Codes and Standards. The "training" element of NRMCC was never acted upon or developed.	Because this role was never developed within NRMCC, the proposal is that this aspect of the NRMCC Charter should be dropped or picked up by an entity like ASME LLC or an equivalent ANS counterpart. Training should be an appropriate responsibility for each SDO for its own Standards. BNCS has established a training program for its members.	Training on the PRA Standard was developed and is available through ASME ST LLC. ASME ST LLC should also support development of additional training, if necessary. An ANS counterpart organization could also provide training if so desired. Training related to PRA and to risk management should be offered by the ASME Training Department and could also be provided outside of the SDOs themselves, by private firms and other stakeholder
5	NRMCC Charter	Develop a plan designed to facilitate the implementation and use of nuclear risk-related standards required to meet the identified needs of the user community.	The Plan that accomplished this objective is contained in the Table attached to the NRMCC Strategic Plan. Much of this plan has been accomplished as noted on the markup to the plan.	When the NRMCC began in 2003, developing this "plan" was a major and important activity. The need for such a plan has almost disappeared, however, the testament to which is that the NRMCC itself stopped keeping it up-to-date in 2009. The proposal is that the maintenance of this formal plan should be assumed jointly by the BNCS Task Group on Risk Management and by the ANS SB's RP3C Subcommittee, with coordination activities to be performed by JCNRM SCoRA with oversight and support from JCNRM. Recommendations will be made to both Governing Boards. Recommendations to BNCS will be sent through the TGRM who will then make any recommendations to BNCS. ANS SB recommendations will be sent through the RP3C Subcommittee.	For ASME, it is recommended that the BNCS TGRM assume this task. For ANS, it is recommended that the SB's RP3C Subcommittee assume this task. The JCNRM and JCNRM SCoRA will support both Boards. Any conflicts or areas of duplication will be addressed by the Governing Boards
6	NRMCC Charter	Determine the relative priority of individual standards to guide when their development should be initiated.	This NRMCC responsibility for this item has largely been performed by JCNRM, where the PRA and Risk Management expertise resides. This responsibility is therefore, covered, especially noting that many of the Standards products contained in the NRMCC Strategic Plan have been developed or are now in pilot phases.	Recommending priorities should be a JCNRM responsibility and approving priorities should be and always has been the responsibility of the governing Boards. Communication and coordination between BNCS and ANS SB is the responsibility of the JCNRM Executive Committee through the governing Boards' normal reporting processes.	JCNRM Executive Committee and Main Committee through BNCS and ANS SB reports

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8	NRMCC Strategic Plan, 2009 version	See pages 3-15 of the NRMCC Strategic Plan dated September 2009	The NRMCC Strategic Plan lists specific standards initiatives, many of which have been completed, resolved, or assumed by JCNRM since the NRMCC was first formed.	The NRMCC Strategic Plan contains key initiatives that are described below. Other status updates on the table are contained in the markup to the NRMCC Strategic Plan provided separately.	In general, it is recommended that responsibility for most of these items should be assumed by the BNCS and the ANS SB through JCNRM reporting to the BNCS TGRM and the ANS SB. A breakdown and update of this table is contained in the markup to the NRMCC Strategic Plan provided separately. However, the JCNRM Strategic Action Plan contains a more up-to-date and relevant list of standards intiiatives and their associated status.
9	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 1: Ensure that current and emerging standards are developed and maintained to meet the needs of the user community, and are consistent and compatible for ease of applicability	The NRMCC provides a forum for coordinating, exchanging technology and information with organizations that are using or that are developing risk-informed Codes and Standards.	JCNRM does this already for ASME and ANS through its JCNRM Strategic Action Plan, the JCNRM Executive Committee, the Subcommittee on Standards Development, and Subcommittee on Risk Applications (SCoRA). For ASME, the relevant information and any needed coordination is then communicated to the BNCS TGRM. The BNCS TGRM also coordinates within ASME BNCS committees. For the ANS, the JCNRM performs a similar function for the Standards Board. Interactions with SDOs other than ASME or ANS is the responsibility of the ASME and ANS SDO organizations through the governing Boards.	JCNRM SCoRA should continue coordination activities between ASME and ANS standard writing committees and report to JCNRM which will then report to the governing Boards. The SCoRA Chair will beome a member of the BNCS Task Group on Risk Management and will assist in the development and maintenance of the BNCS TGRM Risk Management Plan. It is recommended that the Governing Boards add an agenda item in their deliberations to allow for reporting of coordination activities as appropriate. Governing Boards will provide direction to JCNRM. ASME and ANS SDO organizations have the responsibility for scheduling and providing forums for exchanges and collaboration with other SDOs. It is recommended that a new inter-SDO committee be established with members from SDO organizations and supported by selected Board members and members from technical standard writing committees such as JCNRM.

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10	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 2: Integrate the methodology set forth in PRA Standards into other application-specific Codes and Standards, as appropriate	This initiative is contained in the Table to the NRMCC Strategic Plan and has largely been accomplished.	This activity should be transferred to the BNCS TGRM and ANS RP3C with support from JCNRM and JCNRM SCoRA.	BNCS TGRM and ANS RP3C with JCNRM and JCNRM SCoRA support; JCNRM to report on this also to the ANS SB. The ASME and ANS SDO organizations have the responsibility for scheduling and providing forums for exchanges and collaboration with other SDOs. It is recommended that a new inter-SDO committee be established with members from SDO organizations and supported by selected Board members and members from technical standard writing committees such as JCNRM.
11	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 3: Develop a plan designed to facilitate the implementation, use, and maintenance of nuclear risk-related Standards required to meet the identified needs of the user community.	This initiative is contained in the table in the NRMCC Strategic Plan.	The NRMCC strategic plan table should be turned over to BNCS TGRM and ANS SB. Also, the JCNRM Strategic Action Plan tracks risk standard initiatives and is the primary source for the status of risk related Standards.	The ASME and ANS SDO organizations have the responsibility for scheduling and providing forums for exchanges and collaboration with other SDOs. It is recommended that a new inter-SDO committee be established with members from SDO organizations and supported by selected Board members and members from technical standard writing committees such as JCNRM.
12	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 4: Work with all stakeholders to implement the Commission's phased approach to PRA technical adequacy according to a reasonable schedule that permits adequate time for PRA development, peer reviews, and pilot programs (as needed).	It is the responsibility of the governing Boards to coordinate, to the extent practical, consistent and coordinated approaches to implement the NRC phased approach to PRA technical adequacy. The TGRM Strategic Plan as advised by the JCNRM Strategic Plan is scheduling standard development, peer reviews, and trial use (i.e., pilots) for PRA standards that are instrumental in achieving the NRC's phased approach to PRA technical adequacy.	This key initiative is most appropriate for the ASME BNCS and ANS SB.	ASME BNCS and ANS SB The ASME and ANS SDO organizations have the responsibility for scheduling and providing forums for exchanges and collaboration with other SDOs. It is recommended that a new inter-SDO committee be established with members from SDO organizations and supported by selected Board members and members from technical standard writing committees such as JCNRM. An appropriate NRC representative would need to be a participant, so as to ensure proper interaction and communication relative to the Commission's phased approach to PRA.

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13	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 5: Work with all stakeholders to develop its plans to implement 10CFR50.69	This initiative is associated with the Special Treatment Requirements contained within the scope of 10CFR50.69. Currently, this initiative is primarily associated with BNCS committees JCNRM, NQA, Section XI, QME, O&M, and possibly Section III, and will likely also include other SDOs such as ANS and IEEE.	This initiative is associated with the Special Treatment Requirements contained within the scope of 10CFR50.69. It relies on a regulatory-approved component-level risk-significance categorization process, including a passive categorization as well, to define a scope of systems, structures, and components that can be exempted from the "Special Treatment Requirements." This initiative is primarily associated with BNCS committees JCNRM, NQA, Section XI, QME, O&M, and possibly Section III, and some ANS standards committees as well. The intent is to incorporate changes into the standards owned by those committees, in an appropriate way, that will permit the allowances granted by 50.69 to be realized within a codes and standards structure.	It is recommended that this activity be a key item to be adddressed, facilitated and monitored by the new proposed Inter-SDO Committee. This initiative can be supported by multiple SDOs with the intent to improve nuclear safety and cost efficiences for the nuclear power sector. This area requires coordination to ensure consistency in terminology, appropriate scope distribution, and appropriate recognition of teclhnically acceptable risk methods to to establish significance of nuclear power plant structures, systems, and components, as well as associated activities and processes. It is further recommended that the ASME BNCS TGRM should take responsibility to ensure the BNCS committees associated with Special Treatment Requirements are being addressed take ownershiop of making necessary changes to facilitate implementation of 10CFR50.69. It is recommended that the ANS SB also coordinate within its consensus committees to determine if any linkages to 10CFR50.69 exist and if any

NRMCC
In Transition

N. Prasad Kadambi
ANS Co-Chair
February 17, 2016

ANS-SB Action Items

- ANS Standards Board met in November 2015
  - Discussion of NRMCC
  - Relationship to RP3C – Standards Application Platform
  - Relationship to other SDOs, including ASME – Code Case N-720
- NPK Action Items
  - Meet with ASME-BNCS
  - Connection with RP3C activities
- NRMCC Transition Plan for BNCS
  - CRG has prepared
  - NPK has offered comments

Looking Back on NRMCC

- NRMCC always had a larger purpose than just merging ANS-RISC and ASME-CNRM
  - Leadership discussions at the time of joint committee formation
  - ANS-ASME presentation to the Commission
  - Urgency of regulatory needs – RG 1.200
- NRMCC was created at an optimistic time
  - Strong hopes for a nuclear renaissance
  - Expectation of new paradigms for safety regulation using RIPB methods
  - Expectation of increased SDO activities

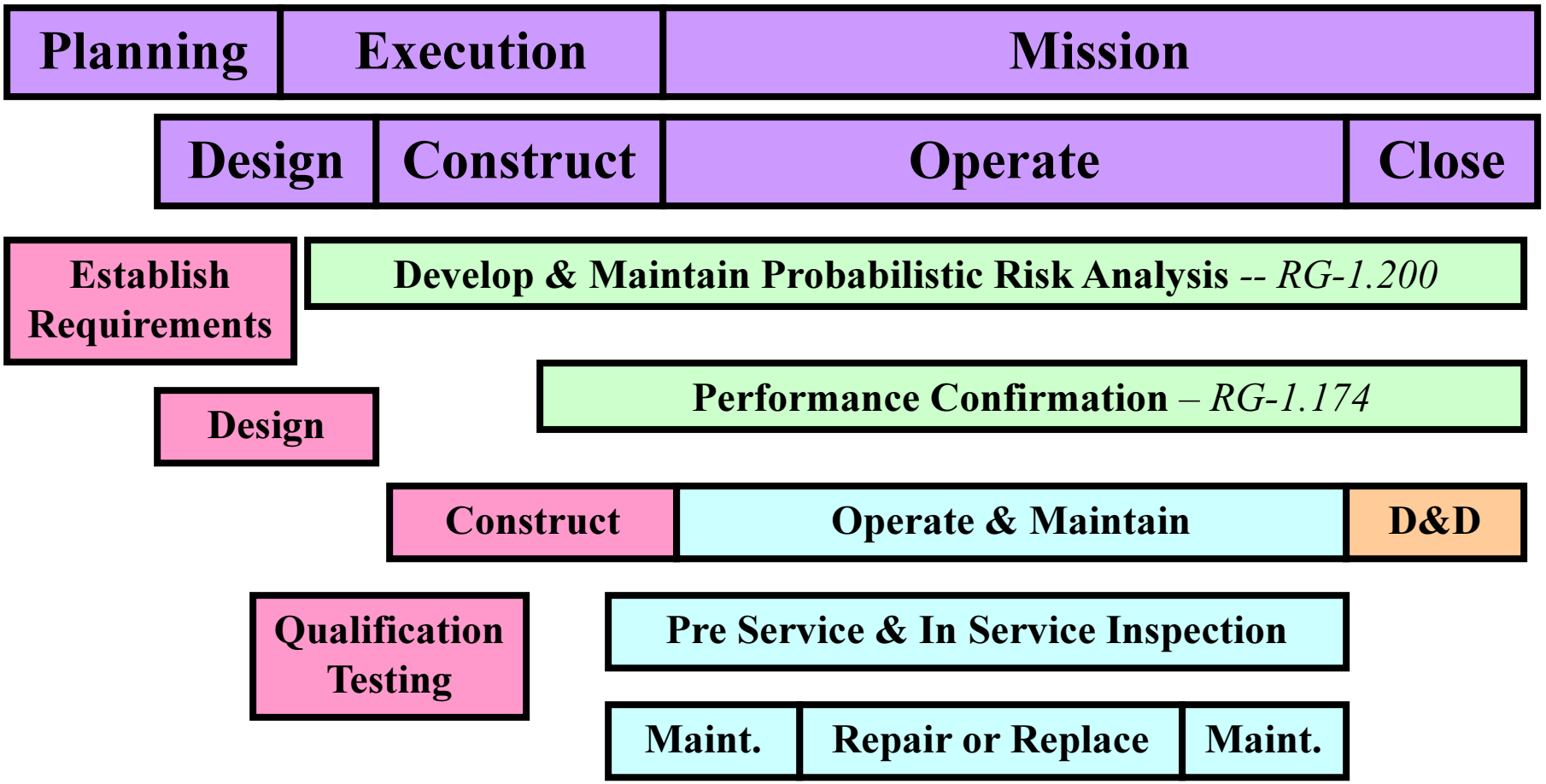
Current State of NRMCC

- Oversight narrowly focused
  - Absence of accountability against goals and objectives
  - Administrative issues with business agreement
  - Needs of RG 1.200 on PRA technical adequacy got highest priority
- Initiatives have lacked follow through
  - Road map of risk related standards activities
  - Prof. Ayyub's proposal to connect with federal resilient infrastructure activities not pursued

Looking Ahead with NRMCC

- JCNRM stays focused on RG-1.200
  - Deal with key issues like technical adequacy, aggregation, use of licensee models, etc.
- Owners Groups' issues need more attention
  - PRA costs outstripping benefits
  - Address training needs
- NRMCC needed for RG-1.174 related issues
  - Mitigating strategies using RIPB approaches
  - Code Case N-720 issues affected by defense-in-depth considerations

Proposed Life-Cycle Risk-Informed Code Framework



Summary

- NRMCC should be restructured, repurposed, and redirected: Locate between Boards and JCNRM
  - The NRMCC should be required to come up with a new charter and strategic plan within a year
  - ANS-SB and ASME-BNCS should jointly pass judgement
- Ongoing oversight should be outcome oriented
  - Every strategic element should connect with at least one observable outcome objective
  - Every action plan should show product plus “delta” toward outcome with a proposed performance measure
- Objectives hierarchy should recognize key drivers
  - Gain participation from SDOs inclined toward risk management
  - Support twin objectives of safety and economic efficiency

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	A	B	C	D	E
2	**Source Document**	**NRMCC Objective or Responsibility**	**Activities related to the Objective or Responsibility**	**Discussion on the activity**	**RESPONSIBILITY TRANSFER PROPOSED Target Organization(s)**
12	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 4: Work with all stakeholders to implement the Commission's phased approach to PRA technical adequacy according to a reasonable schedule that permits adequate time for PRA development, peer reviews, and pilot programs (as needed).	It is the responsibility of the governing Boards to coordinate, to the extent practical, consistent and coordinated approaches to implement the NRC phased approach to PRA technical adequacy. The TGRM Strategic Plan as advised by the JCNRM Strategic Plan is scheduling standard development, peer reviews, and trial use (i.e., pilots) for PRA standards that are instrumental in achieving the NRC's phased approach to PRA technical adequacy.	This key initiative is most appropriate for the ASME BNCS and ANS SB.	ASME BNCS and ANS SB The ASME and ANS SDO organizations have the responsibility for scheduling and providing forums for exchanges and collaboration with other SDOs. It is recommended that a new inter-SDO committee be established with members from SDO organizations and supported by selected Board members and members from technical standard writing committees such as JCNRM. An appropriate NRC representative would need to be a participant, so as to ensure proper interaction and communication relative to the Commission's phased approach to PRA.
13	NRMCC Strategic Plan, 2009 version	Key NRMCC Initiative 5: Work with all stakeholders to develop its plans to implement 10CFR50.69	This initiative is associated with the Special Treatment Requirements contained within the scope of 10CFR50.69. Currently, this initiative is primarily associated with BNCS committees JCNRM, NQA, Section XI, QME, O&M, and possibly Section III, and will likely also include other SDOs such as ANS and IEEE.	This initiative is associated with the Special Treatment Requirements contained within the scope of 10CFR50.69. It relies on a regulatory-approved component-level risk-significance categorization process, including a passive categorization as well, to define a scope of systems, structures, and components that can be exempted from the "Special Treatment Requirements." This initiative is primarily associated with BNCS committees JCNRM, NQA, Section XI, QME, O&M, and possibly Section III, and some ANS standards committees as well. The intent is to incorporate changes into the standards owned by those committees, in an appropriate way, that will permit the allowances granted by 50.69 to be realized within a codes and standards structure.	It is recommended that this activity be a key item to be adddressed, facilitated and monitored by the new proposed Inter-SDO Committee. This initiative can be supported by multiple SDOs with the intent to improve nuclear safety and cost efficiences for the nuclear power sector. This area requires coordination to ensure consistency in terminology, appropriate scope distribution, and appropriate recognition of teclhnically acceptable risk methods to to establish significance of nuclear power plant structures, systems, and components, as well as associated activities and processes. It is further recommended that the ASME BNCS TGRM should take responsibility to ensure the BNCS committees associated with Special Treatment Requirements are being addressed take ownershiop of making necessary changes to facilitate implementation of 10CFR50.69. It is recommended that the ANS SB also coordinate within its consensus committees to determine if any linkages to 10CFR50.69 exist and if any

Attachment 9

Instructions for the WG Chair

The IEEE-SA strongly recommends that at each WG meeting the chair or a designee:

- **Show slides #1 through #4 of this presentation**
- **Advise the WG attendees that:**
  - The IEEE's patent policy is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
  - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
  - There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
- **Instruct the WG Secretary to record in the minutes of the relevant WG meeting:**
  - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
  - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
  - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.
- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG chair review the guidance in *IEEE-SA Standards Board Operations Manual* 6.3.5 and in FAQs 12 and 12a on inclusion of potential Essential Patent Claims by incorporation or by reference.

Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE-SA Standards Board.

(Optional to be shown)

Participants, Patents, and Duty to Inform

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

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

Patent Related Links

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

Patent Policy is stated in these sources:

IEEE-SA Standards Boards Bylaws

http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6

IEEE-SA Standards Board Operations Manual

http://standards.ieee.org/develop/policies/opman/sect6.html#6.3

Material about the patent policy is available at

http://standards.ieee.org/about/sasb/patcom/materials.html

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/about/sasb/patcom/index.html

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

Call for Potentially Essential Patents

- If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:
  - Either speak up now or
  - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or
  - Cause an LOA to be submitted

Other Guidelines for IEEE WG Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
      - Technical considerations remain primary focus
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed … do formally object.**

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

Attachment 10

NPEC Subcommittee SC-3

Operations, Maintenance, Aging, Testing, and Reliability

SC-3 Standards Schedule

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

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

Balloting and Approval Includes:

1 Preview, ballot pool, ballot, receive comments

2 Resolve comments, recirc

3 Submit to/ revcom approval/publish