American Nuclear Society Standards Committee Subcommittee 8 Meeting

Doug Bowen
ANS-8 Subcommittee Chair

Marriott Wardman Park – Washington, DC
November 2, 2017 – 9:35 AM – 11:40 AM
Location: Delaware B

ORNL is managed by UT-Battelle
for the US Department of Energy

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Agenda

- ANS-8 membership
- Approval of prior SC8 minutes (San Francisco, CA – June 2017)
- Use of web space for all ANS-8 work
- SC8 chair project activity
- ISO TC85/SC5/WG8 Standards Activity Report – D. Bowen
- Nuclear Criticality Safety Consensus Committee (NCSCC) Activity Report – L. Wetzel
- Reports from working group chairs
- Old/New business
- Next ANS-8 Standards Forum
- Adjourn

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Approval of prior SC8 minutes (San Francisco, CA – June 2017)

All Ballots in this Group

Actions

showing 26 of 26 ballots

Close Date	Ballot Name	Voting Results			Status
2017-11-02	Approval of ANS-8 June 2017 Minutes	**Affirmative**	**12**	**100%**	CHANGE VOTE
		Negative w/comm…	0	0%	4 voter comments
		Abstain w/comment	3		APPROVAL

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Welcome – ANS-8 Subcommittee Vice Chair

Nuclear Criticality Safety Consensus Committee

Home | Documents | Roster | Calendar | Comments | Ballots | Action Items | Discussions | Settings

You can vote on (2) ballots in Nuclear Criticality Safety Consensus Committee.

APPROVAL Appointment of K. Reynolds as ANS-8 Subcommittee Vice Chair

Ballot Question	Should Kevin Reynolds Resume be confirmed as Vice Chair of ANS-8?
Ballot Description	NCSCC Members, The purpose of this ballot is to seek your concurrence of the appointment of Kevin Reynolds as the Vice Chair of the Nuclear Criticality Safet in compliance with policy for the consensus committee to concur with subcommittee leadership appointment. Mr. Reynolds's resume is inc Please ... read more
Ballot Options	VOTING CLOSED: Thu, Jul 13 2017 11:59 pm PDT This ballot needs at least 66% Yes/Affirmative votes to pass. Affirmative (Comment Optional) 11 100% Tue, Jun 13 2017 12:47 pm PDT Negative (Comment Required) 0 0% Abstain (Comment Required) 0
Ballot Type	Official, as defined by organization policies and procedures
Document for Approval	Kevin Reynolds Resume
Voter Interest Category	National Laboratories/Government Facilities
Open Date	Tue, Jun 13 2017 8:00 am PDT
Close Date	Thu, Jul 13 2017 11:59 pm PDT

PASSED

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ANS-8 membership

#	ANS-8 SC Members	Company	E-mail address
1	J. S. Baker	Savannah River Nuclear Services	james.baker@srs.gov
2	D. G. Bowen (+)	Oak Ridge National Laboratory	bowendg@ornl.gov
3	M. Barnett	URS Professional Solutions, LLC	Marvin.barnett@aecom.com
4	N. Brown	Nuclear Fuel Services	nwbrown@nuclearfuelservices.com
5	M. Crouse (+++)	Consolidated Nuclear Security, LLC	michael.crouse@cns.doe.gov
6	E. Elliott	Los Alamos National Laboratory	elliottep@lanl.gov
7	D. Erickson	Savannah River Nuclear Services	david.erickson@srs.gov
8	B. O. Kidd	Paschal Solutions, Inc.	b.o.kidd57@gmail.com
9	K. Kimball	U.S. Department of Energy, Y-12	kimballkd@y12.doe.gov
10	T. P. McLaughlin	Los Alamos National Laboratory (retired)	tpm@pobox.com; tpm@lanl.gov
11	J. A. Morman	Argonne National Laboratory	jamorman@anl.gov
12	L. E. Paulson	GE Hitachi Nuclear Energy	lon.paulson@ge.com
13	A. Prichard (*)	Pacific Northwest National Laboratory	andrew.prichard@pnnl.gov
14	K. Reynolds (++) (*)	Consolidated Nuclear Security, LLC	Kevin.Reynolds@cns.doe.gov
15	C. Tripp	Nuclear Regulatory Commission	christopher.tripp@nrc.gov
16	D. Winstanley	Sellafield Sites (U.K.)	ddw1@sellafieldsites.com
17	*Vacancy*		

+ ANS-8 Chair; ++ ANS-8 Vice Chair; +++ ANS-8 Secretary; * new member

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Use of Standards Workspace for all ANS-8 work

YouTube Links to Recorded Trainings

(Policies, Rules, Procedures, Process)

*Table Acronyms: CC = consensus committee SubC = subcommittee WG = working group SB = Standards Board VChair = vice chair

Description of Training	Recommended Audience
Training Module #1: Overview of Nuclear Related Standards https://www.youtube.com/watch?v=RiSVzLSW1D0	• CC members • SubC chairs, Vchairs, members • WG chairs & Vchairs • RP3C at-large members
Training Module #2: ANS Standards Organization & Staffing https://www.youtube.com/watch?v=2viBGwHpnwk	• CC members • SubC chairs, Vchairs, members • WG chairs , Vchairs, and members • RP3C at-large members
Training Module #3: Voluntary Consensus Standards Development Process https://www.youtube.com/watch?v=74oRKQPrM_w	• CC chairs, Vchairs, and members • SubC chairs, Vchairs, and members • WG chairs , Vchairs, and members
Training Module #4: Governing Documents (Part 1) includes: 1) ANS Bylaws, Rules, and Procedures (not audited by ANSI) 2) ANSI Essential Requirements: Due process requirements for American National Standards 3) ANS Standards Committee Rules and Procedures https://www.youtube.com/watch?v=DARFskn-U1w	• SB members • CC chairs, Vchairs, and members • SubC chairs & Vchairs • WG chairs & Vchairs
Training Module #5: Governing Documents (Part 2) includes: 1) Policy Manual for the ANS Standards Committee 2) ANS Standards Committee Procedures for Consensus Committees 3) ANS Standards Toolkit https://www.youtube.com/watch?v=4ic8Y5awwAM	• SB members • CC chairs, Vchairs, and members • SubC chairs & Vchairs • WG chairs & Vchairs

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ANS-8 Ballots Since the Last ANS-8 Meeting

All Ballots in this Group

showing 26 of 26 ballots

Close Date	Ballot Name	Voting Results			Status
2017-11-02	Approval of ANS-8 June 2017 Minutes	**Affirmative**	**11**	**100%**	CHANGE VOTE 4 voter comments APPROVAL
		Negative w/co...	0	0%	
		Abstain w/com...	3		
2017-09-22	ANS-8 Approval of ANS-8.7-1998; R201x	**Affirmative**	**14**	**100%**	PASSED APPROVAL
		Negative w/co...	0	0%	
		Abstain w/com...	0		
2017-08-04	ANS-8 Approval of ANS-8.1-201x PINS	**Affirmative**	**13**	**100%**	PASSED 2 voter comments APPROVAL
		Negative w/co...	0	0%	
		Abstain w/com...	0		
2017-07-29	ANS-8 Approval of Reaffirmation of ANS-8.3-1997; R201x	**Affirmative**	**13**	**100%**	PASSED APPROVAL
		Negative w/co...	0	0%	
		Abstain w/com...	0		
2017-07-29	ANS-8 Approval of Reaffirmation of ANS-8.5-1996; R2012	**Affirmative**	**13**	**100%**	PASSED 1 voter comment APPROVAL
		Negative w/co...	0	0%	
		Abstain w/com...	0		

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NCSCC Ballots Since the Last ANS-8 Meeting

All Ballots in this Group

Actions

showing 34 of 34 ballots

Close Date	Ballot Name	Voting Results			Status
2017-11-10	NCSCC Approval of ANS-8.7-1998; R201x	Affirmative	8	100%	CHANGE VOTE 1 voter comment APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-10-29	NCSCC Approval of ANS-8.21-201x Draft	Affirmative	8	72.727%	PASSED 32 voter comments APPROVAL
		Negative w/comment	3	27.273%	
		Abstain w/comment	0		
2017-10-06	Recirculation of NCSCC Approval of Draft of ANS-8.24-201x	Affirmative	15	100%	PASSED 2 voter comments RECIRCULATION
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-09-29	Approval of Reaffirmation of ANS-8.5-1996; R201x	Affirmative	12	100%	PASSED APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-09-29	NCSCC Approval of ANS-8.1-201x PINS	Affirmative	13	100%	PASSED 1 voter comment APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-09-18	Approval of Reaffirmation of ANS-8.3-1997; R201x	Affirmative	13	100%	PASSED APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-07-20	NCSCC Approval of Reaffirmation of ANS-8.6-1983; R2010	Affirmative	11	100%	PASSED 3 voter comments APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		
2017-07-13	Appointment of K. Reynolds as ANS-8 Subcommittee Vice Chair	Affirmative	11	100%	PASSED APPROVAL
		Negative w/comment	0	0%	
		Abstain w/comment	0		

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SC8 chair project activity

- The basis/intent of standards recommendations and requirements are often not well understood. Examples include the following:
  - Double contingency principle
  - Difference between a "…credible abnormal condition…" and "…changes in process conditions…"
  - CAAS detection criterion \ "non-trivial risk of criticality"
- In other cases, perhaps the reason the requirement exists can help with general understanding of the standards and how they work together for safety purposes: Example from ANS-8.10-2015, 4.2.3, "Structural integrity":

  The shielding and confinement system shall be designed to withstand physical damage from credible events and maintain function.

WHY?

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SC8 chair project activity (continued)

- The statements appear to be clear, but they may not be to those using the standards but not involved with their development

- **Goal**: Provide an intent or basis statement for each requirement and recommendation in the ANS-8 standards during the revision process
- **Task**: Generate a whitepaper for each ANS-8 standard to provide a basis statement for each recommendation or requirement in the standard. Load onto ANS Standards Workspace

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ISO TC85/SC5/WG8 standards activity report

- ISO/TC 85/SC5 /WG8, Nuclear Criticality Safety meeting on May 15–18, 2017 at ASTM Headquarters in West Conshohocken, Pennsylvania
- Countries represented:
  - 3-CA
  - 3-FR
  - 1-JP
  - 1-SE
  - 3-UK
  - 2-US

ISO TC85/SC5/WG8 standards activity report: major projects

- New work item proposals
  - Revision to ISO 7753, *Performance and Testing Requirements for Criticality Detection and Alarm Systems* (planning in progress – FR to lead)
  - Solid waste standard (new work item proposal [NWIP] ballot successfully completed)
  - Nuclear criticality safety risk assessment methodology (committee debate still in progress)
  - NCS operations training (NWIP ballot in progress)
- Draft international standards
  - Nuclear criticality safety dimensions (NWIP ballot successful; FR would like to proceed directly to a draft international standard [DIS] ballot)
  - ISO 1709 *Principles of Criticality Safety in Storing, Handling, and Processing* (final DIS [FDIS] ballot in progress)

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NCSCC activity report

L. Wetzel

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Reports from working group chairs

Standard	Title	Chair
ANS-8.1	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	D. Bowen N. Brown
ANS-8.3	Criticality Accident Alarm System	D. Bowen (acting)
ANS-8.5	Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material	J. Hicks
ANS-8.6	Safety in Conducting Subcritical Neutron-Multiplication Measurements in Situ	B. Myers
ANS-8.7	Nuclear Criticality Safety in the Storage of Fissile Materials	K. Kimball
ANS-8.10	Criteria for Nuclear Criticality Safety Controls in Operations With Shielding and Confinement	A. Prichard
ANS-8.12	Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors	C. Tripp
ANS-8.14	Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors	L. Berg
ANS-8.15	Nuclear Criticality Control of Special Actinide Elements	C. Rombough

Standard	Title	Chair
ANS-8.17	Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors	B. Kidd
ANS-8.19	Administrative Practices for Nuclear Criticality Safety	J. Miller
ANS-8.20	Nuclear Criticality Safety Training	R. Knief D. Hill
ANS-8.21	Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors	D. Erickson
ANS-8.22	Nuclear Criticality Safety Based on Limiting and Controlling Moderators	M. Crouse
ANS-8.23	Nuclear Criticality Accident Emergency Planning and Response	J. Baker
ANS-8.24	Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	L. Wetzel
ANS-8.26	Criticality Safety Engineer Training and Qualification Program	K. Reynolds
ANS-8.27	Burn-up Credit for LWR Fuel	D. Lancaster
ANS-8.28 (in dev.)	Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety	J. Chapman

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Nuclear Criticality Safety Consensus Committee (NCSCC)
List of Standards & Projects (8/24/17)

Chair: Larry L. Wetzel Vice Chair: William R. Shackelford

Fissionable Materials Outside Reactors Subcommittee (ANS-8)

Subcommittee Chair: Douglas Bowen

18 Current Standards

1 Proposed New Standard

Ⓟ = PINS submitted to ANSI

ANS-8.1-2014	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	RV 4/15/2014 (WGC: D. Bowen/N. Brown)
ANS-8.3-1997 (R2012) Ⓟ	Criticality Accident Alarm System	RF 7/26/2012 (WGC: D. Bowen [temp])
ANS-8.5-1996 (R2012)	Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material	RF 2/23/2012 (WGC: J. Hicks)
ANS-8.6-1983 (R2017)	Safety in Conducting Subcritical Neutron-Multiplication Measurements In Situ	RF 8/24/17 (WGC: W. Myers)
ANS-8.7-1998 (R2012) Ⓟ	Nuclear Criticality Safety in the Storage of Fissile Materials	RF 2/23/2012 (WGC: K, Kimball)
ANS-8.10-2015	Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement	RV 2/12/2015 (WGC: A. Prichard)
ANS-8.12-1987 (R2016) Ⓟ	Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors	RF 5/6/2016 (WGC: C. Tripp)
ANS-8.14-2004 (R2016)	Use of Soluable Neutron Absorbers in Nuclear Facilities Outside Reactors	RF 6/29/2016 (WGC: L. Berg)
ANS-8.15-2014	Nuclear Criticality Control of Special Actinide Elements	RV 10/10/2014 (WGC: C. Rombough)
ANS-8.17-2004 (R2014)	Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors	RF 7/28/2014 (WGC: B. Kidd)
ANS-8.19-2014	Administrative Practices for Nuclear Criticality Safety	RV 7/28/2014 (WGC: J. Miller)
ANS-8.20-1991 (R2015) Ⓟ	Nuclear Criticality Safety Training	RF 8/3/2015 (WGC: R. Knief/D. Hill)
ANS-8.21-1995 (R2011) Ⓟ	Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors	RF 5/19/2011 (WGC: D. Erickson)
ANS-8.22-1997 (R2016)	Nuclear Criticality Safety Based on Limiting and Controlling Moderators	RF 10/17/2016 (WGC: M. Crouse)
ANS-8.23-2007 (R2012) Ⓟ	Nuclear Criticality Accident Emergency Planning and Response	RF 5/31/2012 (WGC: J. Baker)
ANS-8.24-2007 (R2012) Ⓟ	Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	RF5/31/2012 (WGC: L. Wetzel)
ANS-8.26-2007 (R2016) Ⓟ	Criticality Safety Engineer Training and Qualification Program	RF 12/15/2016 (WGC: K. Reynolds)
ANS-8.27-2015	Burnup Credit for Light Water Reactor Fuel	RV 11/10/15 (WGC: D. Lancaster)
ANS-8.28 (NEW) Ⓟ	Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety	Active Project WGC: J. Chapman

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NCSCC delinquent standards report (1 of 3)

Consensus Committee Chair: Larry Wetzel (llwetzel@bwxt.com)
Consensus Committee Vice Chair: William R. Shackelford (wrshackelford@nuclearfuelservices.com)
ANS-8 Subcommittee Chair: Douglas Bowen (bowendg@ornl.gov)
ANS-8 Secretary: Michael Crouse (michael.crouse@cns.doe.gov)

Maintenance Coordinator:

Color Code:
Purple (~9th year): Perform maintenance ASAP. Those in revision should be reaffirmed to keep current if appropriate.
Dark Red (>5 years old): Delinquent. Maintenance needed if not already in progress.
Red (~4th year): Start Maintenance, if not already in progress.

Designation	Title	Sub-committee	Working Group Chair	PINS Submitted	ANSI Approval	Extension Date	Action Needed By	Comments
ANS-8.21-1995 (R2011)	Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors	ANS-8	D. Erickson	2/12/2008 & resubmitted 6/1/2011 after RF	5/19/2011		5/19/16	Draft @ NCSCC ballot Per PINS, ANS-8.5 w/b incorporated into RV of ANS-8.21
ANS-8.5-1996 (R2012)	Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material	ANS-8	J. Hicks		2/23/2012	12/31/19	2/23/17	RF Certified by SB; ANSI Approval Pending; Being incorporated into ANS-8.21
ANS-8.7-1998 (R2012)	Nuclear Criticality Safety in the Storage of Fissile Materials	ANS-8	K. Kimball	10/18/16	2/23/2012		2/23/17	RF @ NCSCC ballot Revision in progress.
ANS-8.23-2007 (R2012)	Nuclear Criticality Accident Emergency Planning and Response	ANS-8	J. Baker	7/7/16	5/31/2012		5/31/17	Revision in progress. Should be reaffirmed as soon as possible
ANS-8.24-2007 (R2012)	Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	ANS-8	L. Wetzel	3/18/14	5/31/2012		5/31/17	Letter Ballot for Revision @ SB for Certification

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NCSCC delinquent standards report (2 of 3)

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Designation	Title	Sub-committee	Working Group Chair	PINS Submitted	ANSI Approval	Extension Date	Action Needed By	Comments
ANS-8.3-1997 (R2012)	Criticality Accident Alarm System	ANS-8	D. Bowen (temp chair)	8/1/12	7/26/2012		7/26/17	RF Certified by SB; ANSI Approval of RF Pending Revision in development
ANS-8.1-2014	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	ANS-8	D. Bowen N. Brown		4/15/14		4/15/19	PINS @ SB
ANS-8.17-2004 (R2014)	Criticality Safety Criteria for the Handling, Storage and Transportation of LWR Fuel Outside Reactors	ANS-8	B. Kidd		7/28/2014		7/28/19	
ANS-8.19-2014	Administrative Practices for Nuclear Criticality Safety	ANS-8	J. Miller		7/28/2014		7/28/19	
ANS-8.15-2014	Nuclear Criticality Control of Selected Actinide Nuclides	ANS-8	C. Rombough		10/10/2014		10/10/19	
ANS-8.10-2015	Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement	ANS-8	A. Prichard		2/12/2015		2/12/20	
ANS-8.20-1991 (R2015)	Nuclear Criticality Safety Training	ANS-8	R. Knief D. Hill	3/10/2011 & resubmitted 9/30/2015 after RF	8/3/2015		8/3/20	Revision in progress.
ANS-8.27-2015	Burnup Credit for LWR Fuel	ANS-8	D. Lancaster		11/10/2015		11/10/20	

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NCSCC delinquent standards report (3 of 3)

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Designation	Title	Sub-committee	Working Group Chair	PINS Submitted	ANSI Approval	Extension Date	Action Needed By	Comments
ANS-8.12-1987 (R2016)	Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors	ANS-8	D. Biswas	9/27/2007 & resubmitted 5/16/2016 after RF	5/6/2016		2/11/16	Revision in progress.
ANS-8.14-2004 (R2016)	Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors	ANS-8	L. Berg		6/29/2016		6/29/21	
ANS-8.22-1997 (R2016)	Nuclear Criticality Safety Based on Limiting and Controlling Moderators	ANS-8	M. Crouse		10/11/16		10/11/21	Revision to be initiated
ANS-8.26-2007 (R2016)	Criticality Safety Engineer Training and Qualification Program	ANS-8	K. Reynolds	1/17/17	12/15/16		12/15/21	
ANS-8.6-1983 (R2017)	Safety in Conducting Subcritical Neutron-Multiplication Measurements in Situ	ANS-8	B. Myers		8/24/17		8/24/22	

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Old and new business

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Next ANS-8 standards forum:

Marriott Philadelphia Downtown

Philadelphia, PA

Thursday, June 21, 2018

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