ANS 3.5 Working Group Meeting Minutes
Ginna Nuclear Plant – Ontario, NY
2004 Aug 23-27

DRAFT ANS 3.5 Working Group Approved Meeting Minutes
Ginna Nuclear Power Plant

1 Next Meeting

Location: Salem/Hope Creek
Airport: Philadelphia
Date: 2004nov08 or 2004nov15

- Monday 1:00pm-5:00pm
- Tuesday 8:00am-5:00pm
- Wednesday 8:00am-5:00pm
- Thursday 8:00am-5:00pm
- Friday 8:00am-12:00pm

2 Motions

Welchel **2004Aug23** Accept 2003oct23 meeting minutes	Motion: **Carried** • 11 – For • 0 – Against • 1 – Abstained
Welchel **2004Aug23** Accept 2004apr05 meeting minutes	Motion: **Carried** • 11 – For • 0 – Against • 1 – Abstained
Florence **2004aug23** AI-121 Add Sentence to Section 4.2.2.2 Add the following sentence at the end of 4.2.2.2 to be consistent with Section 4.2.2.1; "Deviations that do not impact operator actions or do not detract from training are acceptable" (no change required to 3.2.2.2).	Motion: **Not Carried** • 6 – For • 6 – Against • 0 – Abstained
Florence **2004aug23** Motion to accept new Section 5.3.1.2 wording **5.3.1.2 Subsequent Upgrade.** Following the initial upgrade, reference unit modifications determined to be relevant to the operator training program shall be implemented on the simulator within 24 months of the reference unit's modification in-service date or earlier if warranted by a training needs assessment.	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained

Florence **2004aug23** Motion to accept new Section 4.2.2.1 wording **4.2.2.1 Systems Controlled or Monitored from the Control Room.** It shall be demonstrated that the systems of the reference unit that are within the scope of simulation are adequate to perform the Normal evolutions required by 3.1.3.2 and the malfunctions required by 3.1.4. It shall be demonstrated that the scope of simulation includes system interactions with other simulated systems so as to provide a total integrated unit response. A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4.	Motion: **Carried** • 11 – For • 1 – Against • 0 – Abstained
Shelly Section 6 References **2004Aug24** In Section 6, removed references to other standards. Section 6 now only contains one reference to 10 CFR 55.	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained
Havens AI-129 (Colby) **2004Aug24** Motion to move the Appendix D footnote reference in Section 1.2 to the end of the first full sentence in Section 1.1.	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained
Havens AI-127 **2004Aug25** Core Performance testing in Sections 3 and 4	Motion: **Carried** • 13 – For • 0 – Against • 0– Abstained

Comment [BC1]: Approved change to add the word "normal before evolutions and change section reference 3.1.3 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

3.1.3.2 – Delete Bullet 5 3.1.5 – Deleted Section 3.4.3 – Add Core performance testing to first paragraph 3.4.3.1 – Remove Bullet 3 3.4.3.3 – New Section "Simulator Core Performance Testing" 4.1.3.2 – Remove "such as" list 4.1.5 – Delete Section 4.4.3.1 – Delete Bullet 3 in first list and delete remaining text following third bullet 4.4.3.3 – New Section "Core performance Testing"	
New Membership Consideration **2004Aug25** The Working Group will not accept new membership during the current revision process of this Standard.	Motion: **Carried** • 10 – For • 1 – Against • 2 – Abstained
Dennis AI-1 and AI-8 **2004Aug26** Reviewed and approved PINS form	Motion: **Carried** • 13 – For • 0 – Against • 0 – Abstained
Neis AI-133 **2004Aug27**	Motion: **Carried** • 11 – For • 1 – Against

Modify Section 3.4.3.2 to read: **3.4.3.2 Simulator Scenario-Based Testing.** Scenario-based testing shall be conducted to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process.	• 1 – Abstained

3 Action Item Activity

20	Reactivated • Consider a new Appendix • Educate WG	Paris (Noe) Colby Felker McCullough
25	Reactivated.	Dennis Neis
80	Reactivated.	Florence
130	Impact to 3.4.3.2 and 4.4.3.2 resulting from Kennett Square AI-115 and AI-116	Florence
131	Review 2003oct27 minutes concerning Continuation of the discussion Section 3.1.3 and 3.1.4 Comparison	Havens
132	Review of 4.1.4 After lengthy discussion, this AI was placed into deferred status Wyatt will assume lead. Clarify the scope of Malfunction testing. Deferred 2008	Wyatt Florence Change
133	Review 3.4.3.2 and 4.4.3.2 for redundancy and consolidation	Neis
134	Minimum Testing Periodicity Table Extra emphasis on Section 4.4.3.2 (Wyatt) Deferred 2008	McCullough Wyatt Felker
135	Mail PINS Form to ANS Headquarters	Neis
136	Write Forward	Dennis Koutouzis Tarselli
137	Establish better (routine) communication on ANS WG makeup and activities Target audience – Plant management	Florence Koutouzis Shelly

138	Revision Tracking • Kennett Square (2003oct27) – Rev 14a • DS&S (2004apr05) – Rev 16a • Post DS&S – rev 15 (Rev 14 Tech Editing) • Ginna (2004aug23) – Rev 17	Colby
139	Members to review their action items to ensure correct incorporation into the standard	Members
140	Review Section 4.1.3.2 needs tech editing consideration due to Kennett Square modification	Havens
141	Review incorporation of alternative testing methods into Section 3.4.3.2.	Tarselli

4 Visitors

Visitor	Date	Affiliation	Email, Phone Fax
Frank Tarselli	2004Aug23-27	PO Box 467 Berwick, PA 18603	Email: fatarselli@pplweb.com Phone: 570.542.3551 Fax: 570.542.3855
Don Noe	2004Aug23-27	Suite E 107 Industrial Dr St. Mary's, GA 31558	Email: donnoe@eagnet.com Phone: 912-576-6730 Fax: 912-576-6734
Mike Wyatt	2004Aug23-27	Exelon 200 Exelon Way Kennett Square, PA	Email: micheal.wyatt@exeloncorp.com Phone: 610.765.5659 Fax: 610.755.5807

5 Roll Call

Present	Member	Address	Notes-Proxy	Email-Phone-Fax
Present	Timothy Dennis **Chair**	645 Lehigh Gap St. P. O. Box 119 Walnutport, PA 18088-0119		Email: a243@yahoo.com Phone:610-767-0979 Fax: 610-767-7095
Present	Jim Florence **Vice Chair**	Nebraska Public Power District P. O. Box 98 Brownville, Nebraska 68321		Email: jbflore@nppd.com Phone: 402-825-5700 Fax: 402-825-5584
Present	Keith Welchel **Secretary**	Duke Power Company Oconee Training Center- MC:ON04OT 7800 Rochester Hwy Seneca, SC 29672		Email: kwelchel@duke-energy.com Phone: 864-885-3349 Fax: 864-885-3432
Present	F.J. (Butch) Colby **Editor**	CAE Inc. 8585 Cote-de-Liesse P.O, Box 1800 Saint-Laurent Quebec, Canada H4L 4X4		Email: butchcolby@cs.com Email: butch.colby@cae.com Phone: (410) 381-3557 Fax: (410) 381-2017
Present	William M. (Mike) Shelly **Style Editor**	Entergy Services, Inc. 1340 Echelon Parkway Jackson, MS 39213-8298		Email: wshelly@entergy.com Phone: 601-368-5861 Fax: 601-368-5799
Present Day 3	Larry Vick **Parliamentarian**	US NRC, Office of Nuclear Reactor Regulation 09-D24 Washington, DC 20555		Email: Lxv@nrc.gov Phone: 301-415-3181 Fax: 301-415-2222
Present	George McCullough	American Electric Power One Cook Place Bridgman, MI 49106		Email: gsmccullough@aep.com Phone: 269-466-3343 Fax: 269-466-3388 Cell: 269-449-5481
Proxy	Hal Paris	GSE Systems 8930 Stanford Blvd. Columbia, MD. 21004	Don Noe	Email: hal.paris@gses.com Phone: 410-772-3559 Fax: 410-772-3595
Present	Robert Felker	DS&S 7340 Executive Way, Suite A Frederick, MD 21704		Email: exibob@aol.com Phone: 301-644-2520 Fax: 301-682-8104
Present	Allan A. Kozak	Dominion Generation North Anna power Station P.O. Box 402 Mineral, VA 23117-0402		Email: allan_kozak@dom.com Phone: 540-894-2400 Fax:540-894-2441
Present	Dennis Koutouzis	INPO 700 Galleria Parkway, NW Atlanta, GA 30339-5957		Email: koutouzisjd@inpo.org Phone: 770-644-8838 Fax: 770-644-8120

Present	Oliver Havens, Jr	PSEG Power Hope Creek Generating Station, NTC 244 Chestnut St. Salem, NJ 08079		Email: Oliver.Havens@pseg.com Phone: 856-339-3797 Fax: 856-339-3997
Proxy	Kevin Cox	Exelon Generation Dresden Nuclear Power Station 6500 North Dresden Rd. Morris, IL 60450	Mike Wyatt	Email: kevin.cox@exeloncorp.com Phone: 815-942-2920 x-2109 Fax: 815-941-7121
Present	SK Chang	Dominion Nuclear Connecticut, Inc. Millstone Power Station L. F. Sillin, Jr. Nuclear Training Ctr. Rope Ferry Road Waterford, CT 06385		Email: Shih-Kao_Chang@dom.com Phone: 860-437-2521 Fax: 860-437-2671
Present	Jane Neis	R.E. Ginna Nuclear Power Plant Training Center 1517 Lake Rd Ontario, NY 14519		Email: jane.neis@reginna.com Phone: (585) 771-5216 Fax: (585) 771-5379
NA	Patricia Schroeder	Standards Administrator American Nuclear Society 555 North Kensington avenue La Grange Park, IL 60526-5592		Email: Phone: 708-579-8269 Fax: 708 352 6464

6 Action Item List

6.1 Action Item Quick-look Table

Open	Complete	Carried to 2008

1	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	8	~~9~~	~~10~~
~~11~~	~~12~~	~~13~~	~~14~~	~~15~~	~~16~~	~~17~~	~~18~~	~~19~~	20
~~21~~	~~22~~	~~23~~	~~24~~	25	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~
~~31~~	~~32~~	~~33~~	~~34~~	~~35~~	36	~~37~~	~~38~~	~~39~~	~~40~~
~~41~~	~~42~~	~~43~~	~~44~~	~~45~~	~~46~~	~~47~~	~~48~~	~~49~~	~~50~~
~~51~~	~~52~~	~~53~~	~~54~~	~~55~~	~~56~~	~~57~~	~~58~~	~~59~~	~~60~~
~~61~~	~~62~~	~~63~~	~~64~~	~~65~~	~~66~~	~~67~~	~~68~~	~~69~~	~~70~~
~~71~~	~~72~~	~~73~~	~~74~~	~~75~~	~~76~~	~~77~~	~~78~~	~~79~~	80
~~81~~	~~82~~	~~83~~	~~84~~	~~85~~	~~86~~	~~87~~	~~88~~	~~89~~	~~90~~
~~91~~	~~92~~	~~93~~	~~94~~	~~95~~	~~96~~	~~97~~	~~98~~	~~99~~	~~100~~
~~101~~	~~102~~	~~103~~	~~104~~	~~105~~	~~106~~	~~107~~	~~108~~	~~109~~	~~110~~
~~111~~	~~112~~	~~113~~	~~114~~	~~115~~	~~116~~	~~117~~	~~118~~	~~119~~	120
~~121~~	122	~~123~~	124	~~125~~	126	~~127~~	128	~~129~~	130
131	132	133	134	135	136	137	138	139	140
141									

6.2 Action Items

No.	Status	Date	Assigned To:	Work Assignment
1	**Status:** **2004aug26** **Complete** **Dennis** contacted Mike Wright. No Input from Mike. The Scope change should be approved soon. 2001Apr05 Scope statement will be revised based on SubCommittee-1 comments that ANS 3.1 is not Training Criteria	Priority 1 – PINS form will be completed by next meeting (15min)	**Dennis**	DOE Nuclear Facility vs. Power Plant Simulators – Check with ANS 3. Inquire as to whether other simulator issues are addressed/referenced in other ANS 3 standards Dennis will contact Mike Wright (ANS-3 chair). Are DOE issues referencing simulators? 2001Apr05 Dennis Dennis attended the SubCommittee-1 meeting and was informed the PINS form needs to be completed. Additionally, the scope statement states ANS 3.1 establishes Training Criteria, but does not. Accepted 3.5 Scope change and Appendix D **2000mar09** Chandler Comments (NUPPSCO) relating to DOE simulators. We need to resolve Open NUPPSCO comments from the 1998 standards approval process.

8	**Status:** **2004aug26** **Complete**	Priority 1 – PINS form will be completed by next meeting (15min)	**Dennis**	Contact Mike Wright about the scope change Scope and Background submitted to Shawn and Mike. No schedule at present for ANS-3 to review scope change. **2002Oct29** **PINs form completed and ready to send to ANS**. 2001Apr05 Contacted Sub-Committee-1 and Dennis needs to complete PINS forms;
20	**2004aug25** **Reactivated** **Date: 2002oct29** **Status: Deferred to 2008**	Priority 1 –	**Paris (Noe)** **Colby** **Kozak** **McCullough** **Felker**	Exploiting technology changes and future industry trends. What's coming around the corner; **2004aug25** **Reactivated** **Consensus to reactivate this AI and try to develop some language during this period. If DCS is postponed until the next standard, that will possibly be six years before DCS is addressed.** 2002oct29 Paris Deferred to 2008. Additional technologies will need to be considered (e.g. Virtual reality, DCS, WEB based training) 2001Apr05 Paris Presentation: What is Around the Corner (See Attachments Section) 2001Aug09 Paris Presentation – Distributed Control Systems scope needs to be considered in the standard (Hal will e-mail his presentation to Butch).

25	**2004aug25** **Reactivated** **Moved to 2008**		**Dennis** **Neis**	Process Guidelines (Mods and Testing) ;Institutionalizing Procedures **2004aug24** **Reactivated** **Try to complete during this revision** 2002apr24 Dennis Gave presentation on Millstone experience Defer AI-25 to 2008 2001Apr05 Dennis Deferred
80	**2004aug25** **Reactivated** **Moved to 2008**		**Florence**	2008 Copy and Paste RG 1.149 Rev 3 Section 1.5 into the 2008 Standard. (Software V&V) **2004aug25** **Florence** **Reactivated and will be considered at this meeting.**
120			**Dennis**	Formalize a process for the industry to request a clarification and distribute through USUG **2003Apr05** **Initial AI**

122	**Status:** **2004aug26** **Complete**		**Vick**	Simulator Performance testing Item Experience **2004aug26** **Presentation to WG** 2003Apr05 Initial AI
124			**Florence** **Tarselli** **Welchel**	Evaluate plant transient and for simulator performance (Post Event Data) Consider Reference unit post event guidance to evaluate simulator performance **2004aug24** **Florence will lead development of additional language for "Post Event Processing".** 2003Apr05 Initial AI
126	**Status:** **2004aug26** **Deferred**		**Vick** **Shelly – BWR** **Kozak – PWR** **Golightly - BWR**	Consider adding Performance Test Program in next standard **2004aug26** **Deferred** **Vick** 2003Apr05 Initial AI
128			**Shelly**	Single column Version of Standard ready for final reading **2003Apr05** **Initial AI**

130	**Status:** **2004aug26** **Closed**		**Florence**	Impact to 3.4.3.2 and 4.4.3.2 resulting from Kennett Square AI-115 and AI-116 **2004aug26** **Neis, Florence** **Closed to AI-133** 2004aug23 Initial AI
131	**Status:** **2004aug26** **Complete**		**Havens**	Review 2003oct27 minutes concerning Continuation of the discussion Section 3.1.3 and 3.1.4 Comparison **2004aug26** **Havens** **Closed- No error in minutes found after review** 2003augxx Initial AI
132			**Wyatt**	Review of 4.1.4 **2004augxx** **Initial AI**
133			**Neis** **Havens** **Felker-** **Presenter**	Review 3.4.3.2 and 4.4.3.2 for redundancy and consolidation **2004aug27** **Review Section 4.4.3.2** **2004aug27** **Section 3.4.3.2 was modified by Motion** **2004aug26** **Initial AI**

134			**McCullough Felker Florence**	Minimum Testing Periodicity Table **2004aug26 Initial AI**
135			**Neis**	Mail PINS Form to ANS Headquarters **2004aug26 Initial AI**
136			**Dennis Koutouzis Tarselli**	Write Forward **2004aug27 Initial AI**
137			**Florence Koutouzis Shelly**	Establish better (routine) communication on ANS WG makeup and activities Target audience – Plant management **2004aug27 Initial AI**
138			**Colby**	Revision Tracking • Kennett Square (2003oct27) – Rev 14b • DS&S (2004apr05) – Rev 16b • Post DS&S – rev 15 (Rev 14 Tech Editing) • Ginna (2004aug23) – Rev 17 **2004aug27 Initial AI**
139			**All Members**	Members to review their action items to ensure correct incorporation into the standard **2004aug27 Initial AI**

140			**Havens**	Review Section 4.1.3.2 needs tech editing consideration due to Kennett Square modification **2004aug27** **Initial AI**
141			**Tarselli**	Review incorporation of alternative testing methods into Section 3.4.3.2. **2004aug27** **Initial AI**

7 Working Group Procedural Rules

7.1 Rules of the Chair

- Interim Voting (Motions – Substantive Changes) shall be by Consensus (75% [rounded up] of quorum in session)
- The Chairman rules that no Motions will be accepted when not in session
- Administrative issues by simple majority (quorum in session);
- The Chair shall be informed of absences;
- The absent member is encouraged to send a proxy;
- A Proxy shall not have voting privileges;
- Members attend the full length of the meeting;
- Word 7.0 will be the document format;
- The Host will collect and send all handout material for absent members without proxy;
- Robert's Rules of Order will be used as a general guide;
- Guest Individual Contributors may receive working copy of the draft standard based on need;
- Chair approval required for distribution of working copies of the draft standard;
- Members cannot Vote against their own non-amended Motion;

7.2 Rules Enacted by the Working Group

Missing two consecutive meetings in a row with out representation could result in loss of membership on the committee.

8 **Monday 2004Aug23 (Day 1 1:00PM)**

8.1 Introduction to Ginna Nuclear Plant, Constellation Energy (Neis)

Introduction and Welcome

8.2 Opening Comments (Dennis):

- Fourteenth Meeting
- Called Meeting to order
    - Goal is to complete this standards works taking on more importance in the industry
    - New emphasis on maintenance and performance based
    - More performance based standards versus specifications
- Welcomed Visitors

8.3 Roll Call

Absent Members (1):

Vick (Missed Day 1 and Day 2)

Hal Paris (Proxy: Don Noe)

Kevin Cox (Proxy: Mike Wyatt)

8.4 Day 1 Consensus Level

12 Voting members

9 members for consensus (75% Rule of the Chair)

8.5 Agenda Review (Dennis)

8.6 Review of Meeting minutes Dated 2003Oct27

- 2003Oct27 Minutes were sent to member prior to this meeting. Welchel will incorporate any last minute modifications and recommends that acceptance of minutes dated 2003Oct27 be moved to this Wednesday Aug25.

- **Motion to accept minutes**
  - **For: 11**
  - **Against: 0**
  - **Abstained: 1**

  Abstention Reason: Not present at 2003oct23 meeting

8.7 Review of Meeting minutes Dated 2004Apr05

- 2004Apr05 Minutes were sent to member prior to this meeting. Welchel will incorporate any last minute modifications and recommends that acceptance of minutes dated 2004Apr05 be moved to this Wednesday April 07.

- **Motion to accept minutes**
  - **For: 11**
  - **Against: 0**
  - **Abstained: 1**

  Abstention Reason: Not present at 2004apr05 meeting

8.8 Officers:

Officer Reports:

- Dennis
  - Florence sent letter of condolence to Scott Halverson on the Working groups behalf
  - Attended NFSC meeting in
  - Will NFSC meeting in December of this year
- Florence:
  - WESTRAIN meeting
    - Feedback to WG - testing clarification needed
- Welchel:
  - SSNTA met at the SCS conference in 2004Jan. Major topics included SBT and Core performance testing.
- Shelly:
  - Single page document generated for final reading. Will continue to provide single page document based on document modifications until final read & approval is obtained.
- Vick:
  -
- Colby:
  - Revision 16 now Out for Comment.
    - Three column format
      - Column 1 – 1998 Standard
      - Column 2 – 2005 Standard
      - Column 3 – History of Changes

8.9 Release of WG Information (Dennis)

- Basis for discussion is that Rev 16 was released to MANTG
- Open for Discussion:
  - What level of Revision will be released to the Industry
    - Possible confusion.

- Maintaining openness should be a major goal
- The WG solicits industry feedback via surveys
- The present two column format has the 1998 Standard in the Left Column. The WG cannot give the present standard out to the industry due to Copyright concerns
- Colby – Past policy is that the WG will not give out the revised standard. Meeting minutes will be the official
- WG wanted to draft a policy concerning working group output.
- Draft "Release of Information Policy" (Florence):
    - The WG will through the course of normal business, generate confidential documentation applicable to the WG charter. As a result of this business, documentation may be released to the public through approved minutes posted on the ANS 3.5 WEB site. Other information may be released to the public as deemed appropriate by the WG Chair or Vice-Chair. In addition, information may be supplied to non-working group members on a need-to-know basis for the purpose of review and comment.
- The language was adopted as "Rule-of-the-Chair"

8.10 Miscellaneous Reports (Dennis)

New ANS Secretary: Patricia Schroeder

New ANS 3.2 Standard

ANS 21 – No meeting

No DOE or EPRI

NEI – presentation at NRC outcome. Tarselli read the NRC/NEI minutes.

Wyatt – The NRC is spending a lot more time looking and analyzing Simulator performance. The NRC now has more in house expertise.

With the latest NRC Green findings, the level of fidelity required for low training priority systems is uncertain

The WG discussed various industry green Finding and NRC IP findings.

Utility members gave brief summaries of their IP experience.

8.11 AI-121 (Florence)

Florence present several modifications and each will be determined by separate motions

4.2.2.2

Add the following sentence at the end of 4.2.2.2 to be consistent with Section 4.2.2.1; "Deviations that do not impact operator actions or do not detract from training are acceptable" (no change required to 3.2.2.2).

Consistency between sections 4.2.2.1 and 4.2.2.2

New wording for Section 4.2.2.2

It shall be demonstrated that systems operated or monitored external to the control room, and necessary to perform the normal evolutions required by 3.1.3.2 and the malfunctions required by 3.1.4, are simulated. It shall be demonstrated that the operator is able to interface with the remote activity in a similar manner as in the reference unit. A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4. **Deviations that do not impact the actions to be taken by the operator or do not detract from training are acceptable.**

Comment [BC2]: Approved change to add the word "normal before evolutions and change section reference 3.1.3 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

Motion to add sentence to Section 4.2.2.2:

- **For: 6**
- **Against: 6**
- **Abstained: 0**

Against Reason: Same sentence is missing from other similar sections.

5.3.1.2

Subsequent Upgrade – add the word "modification" in Section 5.3.1.2: Following the initial upgrade, reference unit modifications determined to be relevant to the operator training program shall be implemented on the simulator within 24 months of the~~ir~~ reference unit's *modification* in-service date~~s~~ or earlier if warranted by a training needs assessment.

New Section wording:

5.3.1.2 Subsequent Upgrade. Following the initial upgrade, reference unit modifications determined to be relevant to the operator training program shall be implemented on the simulator within 24 months of the reference unit's modification in-service date or earlier if warranted by a training needs assessment.

Concern – Is a training needs assessment required to complete the modification early.

Motion to accept new Section 5.3.1.2 wording:

- **For: 12**
- **Against: 0**

- **Abstained: 0**

4.1.3.2

Current Wording:

4.1.3.2 Normal Evolutions. The performance of procedures on the simulator, such as heat balance and determination of shutdown margin, shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability.

Proposed Wording to delete duplicate references to examples such as heat balance and determination of shutdown margin identified in 3.1.3.2:

4.1.3.2 Normal Evolutions. *The performance of the simulator shall correctly represent the response of the reference unit consistent with reference unit procedures and data availability*.

Amendment to Section 4.1.3.2 is closely linked to AI-127 so is tabled.

Old Section 4.2.2.1 Wording

4.2.2.1 Systems Controlled or Monitored from the Control Room. It shall be demonstrated that the systems of the reference unit that are within the scope of simulation are adequate to perform the Normal evolutions required by 3.1.3.2 and

Comment [BC3]: Approved change to add the word "normal before evolutions and change section reference 3.1.3 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

the malfunctions required by 3.1.4. It shall be demonstrated that the scope of simulation includes system interactions with other simulated systems so as to provide a total integrated unit response. A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4. Deviations that do not impact the actions to be taken by the operator or do not detract from training are acceptable.

Motion to remove the last sentence in Section 4.2.2.1 for better consistency

New Section 4.2.2.1 Wording

4.2.2.1 Systems Controlled or Monitored from the Control Room. It shall be demonstrated that the systems of the reference unit that are within the scope of simulation are adequate to perform the Normal evolutions required by 3.1.3.2 and the malfunctions required by 3.1.4. It shall be demonstrated that the scope of simulation includes system interactions with other simulated systems so as to provide a total integrated unit response. A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4.

Comment [BC4]: Approved change to add the word "normal before evolutions and change section reference 3.1.3 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

During the discussion of AI-121, it was discovered that the last sentence in Section 4.2.2.1 was repeated from Section 4.2.1.4. Since the motion to add this Sentence in 4.2.2.2 failed, consistency would be served if removed from Section 4.2.2.1 .

Motion to accept new Section 4.2.2.1 wording:

- **For: 11**
- **Against: 1**
- **Abstained: 0**

Against Reason: Preferred the explicit wording.

AI-121 is Closed

8.12 **Adjourned 2004Aug23 at 1800**

9 **Tuesday 2004Aug24 (Day 2 8:00am)**

9.1 Day 2 Consensus Level

12 Voting members

9 members for consensus (75% Rule of the Chair)

9.2 Draft Letter to NRC Consideration (McCullough)

Would like the committee to consider drafting a letter to the NRC expressing an opinion concerning the NRC's interpretation of the 1998 standard.

9.3 AI-124 (Florence)

Presented language for consideration for adding Unit Post Event testing

Proposal: Add new Section 4.4.3.3:

4.4.3.3 Simulator Post Event Testing.

The intent of post event testing is to ensure the simulator is capable of producing the reference unit response after a reference unit event that results in a plant shutdown and/or a transient. It shall be demonstrated that simulator post event testing is conducted and data compared to ensure that the simulator is capable of reproducing the event of the reference unit.

OR, add (4) to Section 4.4.3.1 (would need a change to 3.4.3.1):

4.4.3.1 Simulator Operability Testing. A simulator operability test shall be conducted on a frequency as indicated below. A record of the conduct of this test and its evaluation shall be maintained.

The intent of the operability test is to demonstrate overall simulator model completeness and integration by testing the following:

(1) Simulator steady-state performance (once per year on a calendar basis);
(2) Simulator transient performance for a benchmark set of transients (once per year on a calendar basis), and;
(3) Simulator Reactor Core Performance (each reference unit fuel cycle)
(4) Simulator Post Event Performance (as the reference unit experiences a scram or transient)

Lead the discussion for comparing Simulator data to Unit Data

Presented a Rx scram example from DC Cook.

Review of Mission Statement with respect to the Post Event Review

Action Item Screening Criteria:

Committee agreed to use the screening criteria for considering standard language changes.

If the action facilitates clarification of the existing document

AND
If Clarification results in minimal impact to the 1998 standard

AND
If work is doable by December 31, 2004

THEN
ACCEPT Action Item for 2004

ELSE
TABLE Item until 2009

The committee agrees consideration of Post Event Validation may not pass "**If the action facilitates clarification of the existing document**"

Some members expressed concerns that "Post Event Validation" may become as problematic as SBT is presently

This issue was tabled to allow Florence/Welchel/Tarselli to work on a proposal for the WG to consider for addition or modification to the standard.

9.4 Modified Mission Statement accounting for schedule slips

Action Item Screening Criteria:

Committee agreed to use the screening criteria for considering standard language changes.

If the action facilitates clarification of the existing document

AND
If Clarification results in minimal impact to the 1998 standard

AND
If work is doable by December 31, 2005

THEN
ACCEPT Action Item for 2005

ELSE
TABLE Item until 2010

9.5 Schedule and Priority Discussion

Discussion centered on whether or not to extend the present standard out one more year or add work and go for two years. Some members are concerned the WG will not address important topics such as DCS for up to six years if it (they) are not addressed in this standard's revision.

The Action Item discussion will be moved to Thursday before the PINS discussion.

9.6 ANS 21 Vice Chair Visit (Mike Ruby)

Mike Ruby dropped by for a quick visit and discussion of ANS 21 and the 3.5 WG.

ANS 3.5 WG is probably the most active sub-committee

9.7 AI-125 (Florence)

Florence led the discussion for proposed changes to Appendix B.

Original Appendix B1.2

B1.2 Transient Performance Test. This test consists of running the transient events identified in B2 (for a BWR) or B3 (for a PWR). The set of parameters to be monitored has been identified in B2 (for a BWR) and B3 (for a PWR). Many of these events may be introduced through the use of malfunctions, however the intent of Transient Performance Testing is to verify simulator response and not to test the malfunction. Refer to 4.1.4 of the standard for the acceptance criteria.

Proposed modification to Appendix B1.2 (Append the language from section 4.1.4 into the Appendix B1.2**):**

B1.2 Transient Performance Test. This test consists of running the transient events identified in B2 (for a BWR) or B3 (for a PWR). The set of parameters to be monitored has been identified in

B2 (for a BWR) and B3 (for a PWR). Many of these events may be introduced through the use of malfunctions, however the intent of Transient Performance Testing is to verify simulator response and not to test the malfunction. It shall be demonstrated that simulator response during the conduct of transient performance tests meet the following acceptance criteria:

(1) The simulator allows the use of applicable reference unit procedures.
(2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit to the malfunction.
(3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances.
(4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances.

Members identified other inconsistencies in the Appendices.

Florence – The Standard body does not have a "Transients" section but B1.2 disclaims this as malfunction testing, but is tied to Section 4.1.4, Malfunctions.

Consensus was never reached.

AI-125 is Closed.

9.8 AI-123 (Felker) Suggestion from Industry Peer

While at the WSC conference last week I received the enclosed suggestion for consideration at our next meeting. Please reserve a half hour to discuss the following:

Proposal:

Change the first two sentences of section 1.2 to the following:

1.2

This standard is intended to be a guideline for the development and implementation of simulation facilities processes used to support the Systematic Approach to Training (SAT) process for licensed operator training and testing. It is not intended to impose absolute requirements for simulation facilities programs.

Felker led the discussion of a suggestion concerning modifying the Standard Scope

Felker will respond to the industry peer stating no action will be taken by the WG.

AI-123 is Closed

9.9 Review of Section 6 References

Members questioned why the 1998 Standard References were placed at the end. Shelly stated that references were required at the end and sufficient info is placed there for the reader.

The standard no longer references any other standard, so in [1] the reference to other standards should be removed.

The reference to ANS should be removed.

Section 6 should only reference the Federal Regulations

Old wording:

[1] [Title 10, "Energy," Code of Federal Regulations, Part 55, "Operator's Licenses."

Only the standards explicitly referred to in this document qualify as references. Subsequent revisions of these standards shall not be substituted.

[2] Previously approved denotes those scenarios approved prior to

Comment [BC5]: Remove reference "[1]" and renumber reference "[2]" as reference "[1]". Approved change of removing all reference to ANS-3.1 within the Standard. From April 22-25, 2002 meeting. Action item #57. This change is due to the fact that ANS-3.1 does not establish training criteria for use of simulators. This change was supported by the chairman for ANS-3.1.

the adoption of this Standard.

The documents herein referenced are available from:

American Nuclear Society
555 N. Kensington Avenue
La Grange Park, IL 60526
[1]

Superintendent of Documents
Government Printing Office
Washington, DC 20402

Motion for new Section 6, References, Wording:

[1] Title 10, "Energy," Code of Federal Regulations, Part 55, "Operator's Licenses."

The document herein referenced is available from:

Superintendent of Documents
Government Printing Office
Washington, DC 20402

Comment [BC6]: Remove reference "[1]" and renumber reference "[2]" as reference "[1]". Approved change of removing all reference to ANS-3.1 within the Standard. From April 22-25, 2002 meeting. Action item #57. This change is due to the fact that ANS-3.1 does not establish training criteria for use of simulators. This change was supported by the chairman for ANS-3.1.

Motion to accept new Section 6, References, wording:

- **For: 12**
- **Against: 0**
- **Abstained: 0**

Against Reason: None

9.10 AI-129 Appendix D reference in Standard (Colby)

The 1998 Standard body does not reference Part-task simulators

Part-task simulation devices are reference in 1.149r3.

Appendix D History (Felker) – Part-task simulators were being used to training on task. The standard did not address this specific configuration. Collins pushed for Appendix D to establish criteria (guidelines) for use of part-task training to satisfy learning objectives.

Motion to move the Appendix D footnote reference in Section 1.2 to the end of the first full sentence in Section 1.1.

Original Wording:

The sub-numbering of Sections 3 and 4 is consistent so that corresponding section paragraphs address the same subject matter from a requirements and testing standpoint.(Old Appendix Footnote)

Motion to move footnote to Appendix D to the end of the first sentence in Section 1.1
(Note: Footnote numbering will need to be reviewed)

1.1 Scope. This standard establishes the functional requirements for full-scope nuclear power plant control room simulators for use in operator training and examination.(New Appendix Footnote)

Motion to move the Appendix D footnote reference in Section 1.2 to the end of the first full sentence in Section 1.1.

- **For: 12**
- **Against: 0**
- **Abstained: 0**

Against Reason: None

9.11 AI-127 Core Performance Testing (Neis, Havens, Chang)

Rx Core Performance testing just another Simulator Performance test

Propose consolidating Rx Core related items into new Sections Core performance testing

Proposed Markup Rx Core Performance testing

3.1.3.2 Normal Evolutions. The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows:

(1) Unit startup from cold shutdown to rated power conditions;
(2) Unit shutdown from rated power to cold shutdown conditions;
(3) Power operations and Load changes;
(4) Operator-conducted surveillance testing on safety related equipment or systems; and
~~(5) Unit performance testing such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed instrumentation.~~

For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.

3.1.5 Reactor Core.
The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit within the limits of simulation.

Comment [BC7]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

Comment [bjc8]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group.

Comment [BC9]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

3.4.3 Simulator Performance Testing.
Simulator performance testing comprises operability testing, scenario-based testing, *and reactor core performance testing*. Simulator performance testing shall be performed in a fully integrated mode of operation.

3.4.3.1 Simulator Operability Testing.
Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following:

Simulator steady-state performance;
Simulator transient performance for a benchmark set of transients, and;
~~Simulator Reactor Core Performance~~.

NEW SECTION
3.4.3.3 Simulator Reactor Core Performance Testing
Simulator reactor core performance testing shall be conducted to confirm that the simulator model nuclear and thermal hydraulic characteristics are capable of reproducing the expected reference unit core response to reactivity changes.

4.1.3.2 Normal Evolutions
The performance of procedures on the simulator~~, such as heat balance and determination of shutdown margin,~~ shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability.

It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria……

4.1.5 Reactor Core Performance ~~Testing~~
The performance of reference unit core performance procedures on the simulator, such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed

Comment [BC10]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

Comment [BC11]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC12]: Approved change to change section reference 3.1.2 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

instrumentation, shall be compared and demonstrated to represent correctly the response of the reference unit.

It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit procedures acceptance criteria.

4.4.3.1 Simulator Operability Testing. A simulator operability test[1] shall be conducted on a frequency as indicated below. A record[2] of the conduct of this test and its evaluation shall be maintained.

~~The intent of the operability test is to demonstrate overall simulator model completeness and integration by testing the following:~~ **DELETE THIS SENTENCE – IT IS ALREADY STATED IN 3.4.3.1**

(5) Simulator steady-state performance (once per year on a calendar basis);
(6) Simulator transient performance for a benchmark set of transients (once per year on a calendar basis), and;
(7) ~~Simulator Reactor Core Performance (each reference unit fuel cycle)~~

Simulator operability testing credit may be taken for having performed those normal evolutions, malfunctions, local operator actions, and other features exercised by the scenario during scenario-based testing or operator training, provided that both of the following conditions are satisfied:

(1) The evolutions are performed in accordance with reference unit procedures.
(2) The scenario-based testing results are evaluated and documented.

NEW SECTION

4.4.3.3 Core Performance Testing.

Core Performance Testing shall be conducted each reference unit fuel cycle. Testing shall be performed in accordance with the reference unit procedures and a record of the conduct of this test

[1] Appendix B provides examples of acceptable simulator operability tests.

[2] Appendix A provides examples of acceptable simulator operability tests.

Comment [bjc13]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group.

Comment [BC14]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to make the acceptance criteria the same as the reference unit core testing criteria. "Why should the simulators be held to a higher standard than the actual plant?"

Comment [bjc15]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and the option of either per year or calendar basis.) Section 4.4.3.1 was reworded for clarity (reads easier). In ...

Comment [BC16]: Approved change of adding a foot note to refer to Appendix A. Refer to action item #114 from the April 5, 2004 meeting. The reason for the addition is because Appendix A does provide a means to record test data.

Comment [BC17]: Approved addition of the words, "overall simulator model completeness and integration by testing the following:" from the July 21-24 meeting. Action Item #100. This change will better define the type of testing to be performed.

and its evaluation shall be maintained.

Proposed Final Modification:

3.1.3.2 Normal Evolutions. The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows:

(1) Unit startup from cold shutdown to rated power conditions;
(2) Unit shutdown from rated power to cold shutdown conditions;
(3) Power operations and Load changes;
(4) Operator-conducted surveillance testing on safety related equipment or systems.

For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.

3.1.5 Reactor Core.
The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit core within the scope of simulation

3.4.3 Simulator Performance Testing.
Simulator performance testing comprises operability testing, scenario-based testing, *and reactor core performance testing.* Simulator performance testing shall be performed in a fully integrated mode of operation.

Comment [BC18]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

Comment [BC19]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

Comment [BC20]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

Comment [BC21]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

3.4.3.1 Simulator Operability Testing.
Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following:

Simulator steady-state performance;
Simulator transient performance for a benchmark set of transients.

NEW SECTION
3.4.3.3 Simulator Reactor Core Performance Testing
Simulator reactor core performance testing shall be conducted to confirm that the simulator model nuclear and thermal hydraulic characteristics are capable of ~~re~~producing the actual or predicted reference unit core response ~~to reactivity changes~~.

4.1.3.2 Normal Evolutions
The performance of procedures on the simulator shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability.

It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria…

4.1.5 Reactor Core Performance
The performance of reference unit core performance procedures on the simulator, such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed instrumentation, shall be compared and demonstrated to represent correctly the response of the reference unit.

It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit procedures acceptance criteria.

Comment [BC22]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC23]: Approved change to change section reference 3.1.2 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

Comment [bjc24]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group.

Comment [BC25]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to make the acceptance criteria the same as the reference unit core testing criteria. "Why should the simulators be held to a higher standard than the actual plant?"

4.4.3.1 Simulator Operability Testing. A simulator operability test[3] shall be conducted once per year on a calendar basis by testing the following:

(1) Simulator steady-state performance;
(2) Simulator transient performance for a benchmark set of transients.

A record[4] of the conduct of this test and its evaluation shall be maintained.

NEW SECTION

4.4.3.3 Core Performance Testing.

Core Performance Testing shall be conducted each reference unit fuel cycle. Testing shall be performed in accordance with the reference unit procedures and a record of the conduct of this test and its evaluation shall be maintained.

Comment [bjc26]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and the option of either per year or calendar basis.) Section 4.4.3.1 was reworded for clarity (reads easier). In addition, a new operability testing requirement was added to perform core testing. (Note: core testing is in the 1985 standard under "Normal Evolutions", this was changed in the 1993 standard to "Unit Performance Tests". This, in essence, brings back the core testing requirement and delineates the periodicity.

Comment [BC27]: Approved change of adding a foot note to refer to Appendix A. Refer to action item #114 from the April 5, 2004 meeting. The reason for the addition is because Appendix A does provide a means to record test data.

Consensus that Rx Core criteria will not be establish now

Below is a side-by-side view of the proposed modification

Working Standard Rev 16	**Havens, Neis, Chang Modification**
3.1.3.2 Normal Evolutions. The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows:	**3.1.3.2 Normal Evolutions.** The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows:

Comment [BC28]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

Comment [BC30]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

[3] Appendix B provides examples of acceptable simulator operability tests.

[4] Appendix A provides examples of acceptable simulator operability tests.

(1) Unit startup from cold shutdown to rated power conditions; (2) Unit shutdown from rated power to cold shutdown conditions; (3) Power operations and Load changes; (4) Operator-conducted surveillance testing on safety related equipment or systems; and (5) Unit performance testing such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed instrumentation. For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.	(1) Unit startup from cold shutdown to rated power conditions; (2) Unit shutdown from rated power to cold shutdown conditions; (3) Power operations and Load changes; (4) Operator-conducted surveillance testing on safety related equipment or systems. For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.
3.1.5 Reactor Core. The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit within the limits of simulation.	**3.1.5 Reactor Core**. The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit *core within the scope of simulation*
3.4.3 Simulator Performance Testing. Simulator performance testing comprises	**3.4.3 Simulator Performance Testing.** Simulator performance testing comprises operability testing, scenario-based testing, *and reactor core performance testing.*

Comment [bjc29]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group.

Comment [BC32]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

Comment [BC33]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

Comment [BC31]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

operability and scenario-based testing. Simulator performance testing shall be performed in a fully integrated mode of operation.	Simulator performance testing shall be performed in a fully integrated mode of operation.
3.4.3.1 Simulator Operability Testing. Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following: Simulator steady-state performance; Simulator transient performance for a benchmark set of transients, and; Simulator Reactor Core Performance.	**3.4.3.1 Simulator Operability Testing.** Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following: Simulator steady-state performance; Simulator transient performance for a benchmark set of transients.
	NEW SECTION ***3.4.3.3 Simulator Reactor Core Performance Testing*** The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit *core within the scope of simulation* *Simulator reactor core performance testing shall be conducted to confirm that the simulator model nuclear and thermal hydraulic characteristics are capable of producing the actual or predicted reference unit core response.*

Comment [BC35]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

Comment [BC34]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

Comment [BC36]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC38]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC37]: Approved addition of the words, "overall simulator model completeness and integration by testing the following:" from the July 21-24 meeting. Action Item #100. This change will better define the type of testing to be performed.

Comment [BC39]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

4.1.3.2 Normal Evolutions. The performance of procedures on the simulator, such as heat balance and determination of shutdown margin, shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability. It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria:	**4.1.3.2 Normal Evolutions** The performance of procedures on the simulator shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability. It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria…
4.1.5 Reactor Core Performance Testing. It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit acceptance criteria.	**4.1.5 Reactor Core Performance** *The performance of reference unit core performance procedures on the simulator, such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed instrumentation, shall be compared and demonstrated to represent correctly the response of the reference unit.* It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit procedures acceptance criteria.

Comment [BC42]: Approved change to change section reference 3.1.2 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

Comment [BC40]: Approved change to change section reference 3.1.2 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

Comment [BC41]: Approved change to make the reference section consistent with the new section number. Action Item #109 from October 27-30-03 meeting. Reason to align the sections.

Comment [BC43]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to make the acceptance criteria the same as the reference unit core testing criteria. "Why should the simulators be held to a higher standard than the actual plant?"

Comment [bjc44]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tab ...

Comment [BC45]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to ma ...

4.4.3.1 Simulator Operability Testing. A simulator operability test[5] shall be conducted on a frequency as indicated below. A record[6] of the conduct of this test and its evaluation shall be maintained. The intent of the operability test is to demonstrate overall simulator model completeness and integration by testing the following: (1) Simulator steady-state performance (once per year on a calendar basis); (2) Simulator transient performance for a benchmark set of transients (once per year on a calendar basis), and; (3) Simulator Reactor Core Performance (each reference unit fuel cycle) Simulator operability testing credit may be taken for having performed those normal evolutions, malfunctions, local operator actions, and other features exercised by the scenario during	**4.4.3.1 Simulator Operability Testing**. A simulator operability test[7] shall be conducted once per year on a calendar basis by testing the following: (1) Simulator steady-state performance; (2) Simulator transient performance for a benchmark set of transients. A record[8] of the conduct of this test and its evaluation shall be maintained.

[5] Appendix B provides examples of acceptable simulator operability tests.

[6] Appendix A provides examples of acceptable simulator operability tests.

[7] Appendix B provides examples of acceptable simulator operability tests.

[8] Appendix A provides examples of acceptable simulator operability tests.

Comment [bjc50]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and the option of either per year or calendar basis.) Section 4.4.3.1 was reworded for clarity (reads easier). In addition, a new operability testing requirement was added to perform core testing. (Note: core testing is in the 1985 standard under "Normal Evolutions", this was changed in the 1993 standard to "Unit Performance Tests". This, in essence, brings back ...

Comment [bjc46]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and th ...

Comment [BC47]: Approved change of adding a foot note to refer to Appendix A. Refer to action item #114 from the April 5, 2004 meeting. The reason for the addition is because Appendix A does provide a means to record test data.

Comment [BC51]: Approved change of adding a foot note to refer to Appendix A. Refer to action item #114 from the April 5, 2004 meeting. The reason for the addition is because Appendix A does provide a means to record test data.

Comment [BC48]: Approved addition of the words, "overall simulator model completeness and integration by testing the following:" from the July 21-24 meeting. Action Item #100. This change will better define the type of testing to be performed.

Comment [BC49]: Approved change of adding a time reference to each item 1, 2, and 3 from July 21 – 24 meeting. Action item #100. This will better define the time sequence with both the plant and simulator taken in to consideration as to when these tests should be performed.

scenario-based testing or operator training, provided that both of the following conditions are satisfied: (1) The evolutions are performed in accordance with reference unit procedures. (2) The scenario-based testing results are evaluated and documented. *Note: The last paragraph and the two bullets were deleted, but Rev 16 of the Standard was not updated to reflect the motion.*	
	NEW SECTION 4.4.3.3 Core Performance Testing. *Core Performance Testing shall be conducted each reference unit fuel cycle. Testing shall be performed in accordance with the reference unit procedures and a record of the conduct of this test and its evaluation shall be maintained.* It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit procedures acceptance criteria.

Comment [BC52]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to make the acceptance criteria the same as the reference unit core testing criteria. "Why should the simulators be held to a higher standard than the actual plant?"

Havens read the above changes. Additional discussion ensued.

The WG agreed to take this up again tomorrow.

9.12 Adjourned 2004Aug24 at 1815

10 Wednesday 2003Aug25 (Day 3 8:00am)

10.1 Day 3 Consensus Level

13 Voting members

10 members for consensus (75% Rule of the Chair)

10.2 AI-127 Continuation (Havens)

Quick Summary – All Reactor Core testing references have been consolidated in two new sections 3.1.5/4.1.5 and 3.4.3.3/4.4.3.3

There was discussion as to whether to combine 3.1.5 and 3.4.3.3; and to combine 4.1.5 and 4.4.3.3. Additionally, it was recognized that the Rector Core section 3.1.5 was created to satisfy the fact that the Core is will now receive more attention due to Rx manipulations.

Pulling Rx Core out as a separate section, may give the regulator a bigger hook to hang their hat. Probably not a good thing.

The following was modified by the WG.

Working Standard Rev 16	Havens, Neis, Chang Modification	Reason
3.1.3.2 Normal Evolutions. The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows: (1) Unit startup from cold shutdown to rated power conditions;	**3.1.3.2 Normal Evolutions.** The simulator shall support the following minimum evolutions, using only operator action normal to the reference unit, as follows: (1) Unit startup from cold shutdown to rated power conditions;	**The requirements in this bullet are test requirements, they are now incorporated in new sections 3.4.3.3 and 4.4.3.3 for Core**

Comment [BC53]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

Comment [BC55]: Approved change of adding this new heading 3.1.3.2 Normal Evolutions and associated sentence. Also added the words Power operations and to item number (3). Action item #109 from October 27-30-03 meeting. Reason to better align the sections 3.1.3 and 4.1.3.

(2) Unit shutdown from rated power to cold shutdown conditions; (3) Power operations and Load changes; (4) Operator-conducted surveillance testing on safety related equipment or systems; and (5) Unit performance testing such as heat balance, shutdown margin, determination and measurement of reactivity coefficients and control rod worth through the use of permanently installed instrumentation. For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.	(2) Unit shutdown from rated power to cold shutdown conditions; (3) Power operations and Load changes; (4) Operator-conducted surveillance testing on safety related equipment or systems. For evolutions not listed above, such as reactor core end-of-cycle coastdown, mid-loop operations, refueling operations, or evolutions in which the reactor vessel head is removed, conditions may be achieved in a non-continuous manner, and mathematical model or initial condition changes are permitted.	**Performance testing**
3.1.5 Reactor Core. The simulator shall utilize models relating to the nuclear and thermal hydraulic characteristics that replicate the reference unit within the limits of simulation.	**The contents of Section 3.1.5 in rev 16 have been deleted and incorporated into Section 3.4.3.3**	**Incorporated into new section 3.4.3.3**
3.4.3 Simulator Performance Testing.	**3.4.3 Simulator Performance Testing.**	**Add Core**

Comment [bjc54]: Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group.

Comment [BC56]: Approved change of adding this new paragraph 3.1.5 to section 3.1 from the July 21-24, 2003 meeting. Action item #100. Section 3.1.5 was added to provide section consistency in the standard with section 4.1.5. This also utilizes some of the same verbiage as the current CFR.

Simulator performance testing comprises operability and scenario-based testing. Simulator performance testing shall be performed in a fully integrated mode of operation.	Simulator performance testing comprises operability testing, scenario-based testing, *and reactor core performance testing.* Simulator performance testing shall be performed in a fully integrated mode of operation.	**Performance to Simulator Performance testing; places core performance testing as a separate performance test and removes from operability testing**
3.4.3.1 Simulator Operability Testing. Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following: Simulator steady-state performance; Simulator transient performance for a benchmark set of transients, and; Simulator Reactor Core Performance.	**3.4.3.1 Simulator Operability Testing.** Simulator operability testing [1] shall be conducted to confirm overall simulator model completeness and integration by testing the following: (1) Simulator steady-state performance, and; (2) Simulator transient performance for a benchmark set of transients.	**Core Performance Testing moved to Simulator Performance testing as 3.4.3.3; places core performance testing as a separate performance test and removes from operability testing**
	NEW SECTION ***3.4.3.3 Simulator Reactor Core Performance***	**Added new section as a**

Comment [BC58]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

Comment [BC57]: Approved change of adding section 3.4.3 Simulator Performance Testing and adding the above words. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3 compared to section 4.4.3

Comment [BC61]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC59]: Approved change of adding new section heading 3.4.3.1 Simulator Operability Testing. The above words remain the same as before. Action Item 116 &115 from October 27-30-03 Meeting. Reason to better align sections 3.4 and 4.4. The new words better explain the intent of section 3.4.3.1 compared to section 4.4.3.1.

Comment [BC60]: Approved addition of the words, "overall simulator model completeness and integration by testing the following:" from the July 21-24 meeting. Action Item #100. This change will better define the type of testing to be performed.

	Testing *Simulator reactor core performance testing shall be conducted to confirm that the simulator nuclear and thermal hydraulic models replicate the reference unit core response within the scope of simulation.*	**Simulator Performance Test. Incorporated content of 3.1.5 which is deleted. Also incorporates the intent of item 3.1.3.2 (5)**
4.1.3.2 Normal Evolutions. The performance of procedures on the simulator, such as heat balance and determination of shutdown margin, shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability. It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria:	**4.1.3.2 Normal Evolutions** The performance of procedures on the simulator shall be compared and demonstrated to represent correctly the response of the reference unit at the same power level consistent with reference unit procedures and data availability. It shall be demonstrated that simulator response during conduct of the normal evolutions identified in 3.1.3.2 meets the following acceptance criteria: (1) Be the same as the reference unit startup test procedure acceptance criteria. (2) Be the same as the reference unit surveillance procedure acceptance criteria. (3) Be the same as the reference unit normal operating procedure acceptance criteria. (4) Require that the observable changes in the parameters correspond in direction to the	**These words removed from 3.1.3.2 (5), also removed here to remove from normal operation**

Comment [BC62]: Approved change to change section reference 3.1.2 to 3.1.3.2 in the first sentence. Action item 117 from April 5, 2004 meeting. The reason for this change is to better define the evolutions as a normal evolution and to reference back to the correct section

	changes expected for a best estimate of normal unit operation. (5) Require that the simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances. (6) Require that the simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances.	
4.1.5 Reactor Core Performance Testing. It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit acceptance criteria.	**The contents of Section 4.1.5 in rev 16 have been deleted and incorporated into Section 4.4.3.3**	**Removal of 4.1.5 – content moved to new 4.4.3.3**
4.4.3.1 Simulator Operability Testing. A simulator operability test[9] shall be conducted on a frequency as indicated below. A record of the conduct of this test and its evaluation shall be maintained.	**4.4.3.1 Simulator Operability Testing**. A simulator operability test shall be conducted once per year on a calendar basis by testing the following: (1) Simulator steady-state performance, and; (2) Simulator transient performance for a benchmark set of transients.	**Align with the change in 3.4.3.1; remove redundant information contained in 3.4.3.1; consolidate time requirements; rewording for**

[9] Appendix B provides examples of acceptable simulator operability tests.

Comment [bjc66]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and the option of either per year or calendar basis.) Section 4.4.3.1 was reworded for clarity (reads easier). In addition, a new operability testing requirement was added to perform core testing. (Note: core testing is in the 1985 standard under "Normal Evolutions", this was changed in the 1993 standard to "Unit Performance Tests". This, in essence, brings back the core testing requirement and delineates the periodicity.

Comment [bjc63]: Approve change of calendar basis to a frequency as indicated below from the July 21-24 meeting. NOTE: This change has deleted this previously approved change (of deleting the words "on either" and "or certification" from April 22-25 meeting. Action item #40. The rule change has eliminated the requirement for certification and the option of either per year or calendar basis.) Section 4.4.3.1 was reworded for clarity (reads easier). In addition, a new operability testing requirement was added to perform core testing. (Note: core testing is in the 1985 standard under "Normal Evolutions", this was changed in the 1993 standard to "Unit Performance Tests". This, in essence, brings back the core testing requirement and delineates the periodicity.

The intent of the operability test is to demonstrate overall simulator model completeness and integration by testing the following: (1) Simulator steady-state performance (once per year on a calendar basis); (2) Simulator transient performance for a benchmark set of transients (once per year on a calendar basis), and; (3) Simulator Reactor Core Performance (each reference unit fuel cycle) Simulator operability testing credit may be taken for having performed those normal evolutions, malfunctions, local operator actions, and other features exercised by the scenario during scenario-based testing or operator training, provided that both of the following conditions are satisfied: (1) The evolutions are performed in accordance with reference unit procedures. (2) The scenario-based testing results are evaluated and documented. *Note: The last paragraph and the two bullets were deleted, but Rev 16*	A record of the conduct of this test and its evaluation shall be maintained.	**readability; and consistency with arrangement of other 4.4 sections**

Comment [BC64]: Approved addition of the words, "overall simulator model completeness and integration by testing the following:" from the July 21-24 meeting. Action Item #100. This change will better define the type of testing to be performed.

Comment [BC65]: Approved change of adding a time reference to each item 1, 2, and 3 from July 21 – 24 meeting. Action item #100. This will better define the time sequence with both the plant and simulator taken in to consideration as to when these tests should be performed.

of the Standard was not updated to reflect the motion.		
	NEW SECTION ***4.4.3.3 Core Performance Testing.*** *Core Performance Testing shall be conducted each reference unit fuel cycle. Testing shall be performed in accordance with the reference unit procedures and shall be compared and demonstrated to replicate the response of the reference unit.* *It shall be demonstrated that the simulator response during conduct of core performance testing meets the reference unit procedures acceptance criteria* *A record of the conduct of this test and its evaluation shall be maintained*	**Incorporates content of 4.1.5, adds new section corresponding to 3.4.3.3**

Comment [BC67]: Approved change of adding this new paragraph (4.1.5), to section 4.1 from the July 21-24, 2003 meeting. Action item #100. Section 4.1.5 was added in response to industry feedback requesting core testing criteria. Because the BWRs don't have an industry standard for actual core testing as the PWRs do, it was decided to make the acceptance criteria the same as the reference unit core testing criteria. "Why should the simulators be held to a higher standard than the actual plant?"

Motion (Havens):

Modify Rev 16 Sections 3 and 4 as defined in the table above

Summary of changes:

- **3.1.3.2 – Delete Bullet 5**
  - **Reason:**

the requirements in this bullet are test requirements, they are now incorporated in new sections 3.4.3.3 and 4.4.3.3 for Core Performance testing

- **3.1.5 – Deleted Section**
  - **Reason:**

    Incorporated into new section 3.4.3.3

- **3.4.3 – Add Core performance testing to first paragraph, added 'testing' after 'operability'**
  - **Reason:**

    Add Core Performance to Simulator Performance testing; places core performance testing as a separate performance test and removes from operability testing.

- **3.4.3.1 – Remove Bullet 3**
  - **Reason:**

    Core Performance Testing moved to Simulator Performance testing as 3.4.3.3; places core performance testing as a separate performance test and removes from operability testing.

- **3.4.3.3 – New Section "Simulator Core Performance Testing"**
  - **Reason:**

    Added new section as a Simulator Performance Test. Incorporated content of 3.1.5 which is deleted. Also incorporates the intent of item 3.1.3.2 (5).

- **4.1.3.2 – Remove "such as" list in the first paragraph**
  - **Reason:**

These words removed from 3.1.3.2 (5), also removed here to remove from normal operation.

- **4.1.5 – Delete Section**
  - **Reason:**

    Removal of 4.1.5 – content moved to new 4.4.3.3.

- **4.4.3.1 – Delete Bullet 3 in first list and delete remaining text following third bullet**
  - **Reason:**

    Align with the change in 3.4.3.1; remove redundant information contained in 3.4.3.1; consolidate time requirements; rewording for readability; and consistency with arrangement of other 4.4 sections.

- **4.4.3.3 – New Section "Core performance Testing"**
  - **Reason:**

    Incorporates content of 4.1.5, adds new section corresponding to 3.4.3.3

A question was raised: If the simulator core meets the Unit Core Procedure Criteria, is this sufficient? General consensus is that this is sufficient as the definition of replicate.

Vote:

For: 13

Against: 0

Abstained: 0

Carried

AI-127 is Closed

10.3 AI-20 (Deferred) DCS (Noe)

Led the discussion and presented several PPT slides outline DCS concerns.

DCS is very similar to plant computers, with a significant different in that DCS systems control the simulator.

An example was given where a vendor used the fact that the present standard does not mandate I/O overrides for stimulated controls, to not deliver other simulator features that are generally included (e.g. I/O overrides).

DCS may not be able to be completed in one or two meetings.

The WG determined AI-20 should be reactivated and try to develop some language during this period. If DCS is postponed until the next standard, that will possibly be six years before DCS is addressed.

Reactivated AI-20

10.4 AI-25 (Deferred)

Reactivated by Dennis

Neis will work on this AI

10.5 AI-36 (Deferred) INPO ACAD Documents (Koutouzis)

Koutouzis update

- ACADs are not written with the intent to provide prescriptive guidance. ACAD 90-022, for simulator training is not intended to provide sufficiently prescriptive guidance to facilitate the simulator testing

- Numerous references to the ANS standard regarding fidelity, configuration control, scenario development, instructor selection and training and us of simulator features are contained primarily in ACAD 90-022 as well as various other Academy documents and provide information to communicate the intent of the guideline.
- ACADs are produced with utility support, and are generally an accumulation of good practices and responses to industry issues that need to be addressed.
- Reviewed Plant Reference Simulator Fidelity Guideline. References the ANS 3.5 standard. Good Practice TQ504
- ACADs will, in all likelihood, not become sufficiently prescriptive to "tell" utilities how to accomplish tasks or functions. Each utility will develop their processes in the context of their way of doing business and culture.

The chair recommended closing this AI.

This AI is Closed.

10.6 AI-60 (Deferred) Define the term "Training Needs Assessment" (McCullough)

McCullough Update

- Numerous (13) uses of "Training Needs Assessments"
- Too large a task for this revision
- Will require significant consideration, but not an industry issue at this time.
- **Recommendation is to defer to the next revision.**

10.7 AI-80

Florence Update

- Should be considered this meeting
- **Reactivated by Chair**

10.8 INPO feedback (Koutouzis)

Koutouzis presented a PPT… items of interest

- The simulator's fidelity is closely tied to trainings ability to create challenging scenarios
- Currently no programs are on probation.
- Operator Training Working Meeting – Perception that the ANS 3.5 Working Group does not have sufficient "Training" expertise
- SSNTA operator Training Sub-Committee meeting at INPO – NRC Update (Vick, Trimble, Ernstes)
    - NRC considering new rev to 1.149
- PWR Owners group (WOG)
    - Use of Fidelity versus Realism (mixing words… using Fidelity when Realism is more appropriate)

10.9 New Membership Consideration

Motion - The Working Group will not accept new membership during the current revision process of this Standard.

Discussion – Since this revision process should be coming to an end shortly, the WG will limit voting memberships to the present roll.

Vote:

For: 10
Against: 1
Abstained: 2

Carried

Reason Against: All participants, proxies and guests, have made significant contributions and should be considered for membership.

Reason Abstained:

- **Conflict of interest.**
- **All participants, proxies and guests, have made significant contributions and should be considered for membership.**

10.10 Adjourned 2004Aug25 at 1730

11 **Thursday 2004Aug26 (Day 4 8:00am)**

11.1 Day 4 Consensus Level

13 Voting members

10 members for consensus (75% Rule of the Chair)

11.2 NRC Presentation (Vick)

POTENTIAL Negative Training may result in Green Finding

IP Inspections are achieving the desired results

Rx manipulations is Regulatory space… not ANSI space

Some use of unqualified personnel to model, test, and evaluate the simulator

Modifications preceding plant without Training Needs Assessment

SBT Documentation is described in Q&A Answer #6

NRC is considering 1.149r4

NRC allocates ~96 hours to IP Inspections

NRC Resident Inspector Roll

- Quarterly IP Review
- Quarterly Simulator performance review

11.3 AI-132 Section 4.1.4 (Felker)

Felker

Review of History of Section 4.1.4

There were six “pieces” to the previous motion to revise 4.1.4

Five of the six were resolved

Section 4.1.4 was not tackled at the time

Still have a 4.1.4 problem

Section 4.1.4 has very useful language… covers areas other than steady state.

There is a test section for malfunctions, but has not place in the testing program. How does one satisfy malfunctions 4.1.4 testing requirements.

Since malfunctions are defined in a stand alone section, malfunction testing is required in addition to SBT.

Possibly remove the list in 3.1.4.

Recommendation:

- Section 3.1.4 – Delete the malfunction list starting with “The simulator shall include the malfunctions listed below”
- Section 4.1.4 link back to Section 3.1.4.
- Removes Malfunction Testing

We’ve grown beyond Malfunction Testing

Malfunction testing grew out of the Denton Letter

The International community basically uses the ANS 3.5 Standard in their purchasing, but not as an on going testing standard.

Noe – The malfunction list is useful during initial simulator design

Chang – malfunctions should only be tested once when created. Malfunctions are special because they have a "Cause and Effects" document

Florence – Malfunction testing and scope incorporation would be completed regardless of the presence of Sections 3.1.4/4.1.4

Felker – This discussion is rooted in an NRC region rep's comment

Straw Poll – Does the issue of 4.1.4 and it's application need to be addressed in this revision

For: 9
Against: 7

75% Consensus of members, proxies and guest was not reached.

This AI will be placed into deferred status. Wyatt will assume lead.

11.4 AI-133 SBT (Neis)

Neis led the discussion of modification to Section 3.4.3.2

This wording should be more consistent with other sections

Section 3.4.3.2	**4.4.3.2 Simulator Scenario-Based Testing.**
Scenario-based testing shall be conducted utilizing the existing training and examination scenario validation	The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the

process. The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process.	existing training and examination scenario validation process to ensure the following: (1) The scenario meets the predetermined learning or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues; (2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence. Test data shall be acquired during scenario validation for subsequent evaluation of malfunctions, local operator actions, and other features exercised by the scenario. Evaluation of the test data shall consider: (1) The simulator allows the use of applicable reference unit procedures. (2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit to the malfunction. (3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances. (4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances. Results of this evaluation shall be documented and include: (1) the initial conditions, description of the scenario and perturbations used to induce the transient; (2) positive demonstration or, alternatively, an assertion that the learning or examination objectives were met; (3) listing of key parameters checked and assertion that there were no unexpected changes;

	(4) listing of key alarms and automatic actions occurring and assertion that they would be expected for the scenario; (5) assertion that no unexpected alarms and automatic actions occurred.

After lunch the follow modifications to SBT was reviewed by Neis

Proposed Neis/Florence Revision. Use this as the starting point for the deferred AI.

Section 3.4.3.2	**4.4.3.2 Simulator Scenario-Based Testing.**
Scenario-based testing shall be conducted utilizing the existing training and examination scenario validation process. ~~The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process.~~ ~~The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process to ensure the following:~~ Scenario-based testing confirms the following: (1) The scenario meets the predetermined learning	~~The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process to ensure the following:~~ ~~(1) The scenario meets the predetermined learning or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues;~~ ~~(2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence.~~ Test data shall be acquired during scenario validation for subsequent evaluation of malfunctions, local operator actions, and other features exercised by the scenario. Evaluation of the test data shall consider: (1) The simulator allows the use of applicable

or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues; (2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies or deviation from an approved scenario sequence.	reference unit procedures. (2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit. ~~to the malfunction.~~ (3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances. (4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances. Results of this evaluation shall be documented and include: (1) the initial conditions, description of the scenario and perturbations used to induce the transient; (2) positive demonstration or, alternatively, an assertion that the learning or examination objectives were met; (3) listing of key parameters checked and assertion that there were no unexpected changes. (4) listing of key alarms and automatic actions occurring and assertion that they would be expected for the scenario; (5) assertion that no unexpected alarms and automatic actions occurred.

After several hours of discussion, the WG decided to defer any modifications to sections 3.4.3.2 and 4.4.3.2

The WG agrees there is significant duplication and redundancy in 3.4.3.2 and 4.4.3.2, but the magnitude of change required to fix this is too large to be considered at this time.

Feedback from industry, comments from a committee member initiated this discussion.

Neis will lead the deferred AI-133

11.5 AI-134 Minimum Testing Periodicity (McCullough)

McCullough lead the discussion of minimum testing and periodicity

Section	New	Maintenance	Minimum
4.1.1	Yes	Annual Once per 4Yr Continuously	New Annual
4.1.2	Yes	Annual Once per 4Yr Never	New Annual
4.1.3.1	Yes	Annual	New Annual
4.1.3.2	Yes	Annual Fuel Cycle Once per 4Yr	New Fuel Cycle Never SBT
4.1.4	Yes	25% per Yr SBT Never	SBT

4.2.1	Yes	Annual Fuel Cycle Once per 4Yr Never	Fuel Cycles
4.2.2	Yes	Once per 4Yr	SBT

Further discussion will be deferred until the next standard

Possibly consider a table defining minimum testing periodicity in the next revision

New AI-134 Deferred to 2008 Revision

11.6 AI-128 One Column Standard Format Status (Shelly)

ANS Headquarters not concerned with two column formatting

Formatted standard into one column format

New version based on Rev 16

Shelly will maintain a one column format

11.7 AI-1 and 8 PINS (Dennis)

Dennis presented a PPT PINS status

Motion:

Accept the PINS form named "pinsform for ANS 3.5 2003 Revision .doc"

For: 13
Against: 0
Abstained: 0

Motion carried

AI-1 and AI-8 are Complete

11.8 Adjourned 2004Aug26 at 1700

12 **Friday 2004Aug27 (Day 5 8:30am)**

12.1 Day 5 Consensus Level

13 Voting members

10 members for consensus (75% Rule of the Chair)

12.2 ANS WG Visibility

Discussion that the Working Group is not visible enough… i.e. industry comments that the WG is does not have any trainers

Florence will lead the effort to establish better and routine communications with plant management.

New AI-137

12.3 Editorial Report (Colby)

Colby reviewed the three column format that lists the changes to the standard with reasons.

The official standard revisions that incorporate the changes from the last three meetings:

- Kennett Square (2003oct27) – Rev 14a
- Post DS&S – rev 15 (Rev 14 Tech Editing))
- DS&S (2004apr05) – Rev 16a
- Ginna (2004aug23) – Rev 17

Color Code

- Red – (Kennett Sq) Corrections to based on minutes review incorporation i.e. 14 to 14a
- Blue – DS&S Changes
- Yellow – Approved Changes by Motion
- Green – tech editing Changes

New AI-138 Colby - Track Standards Revision

New AI-139 Colby - Members to review their Standard's modifications for correct incorporation into the Standard

Colby reviewed revision 14a

Colby reviewed revision 16a

New AI-140 Havens - Review Section 4.1.3.2 needs tech editing consideration due to Kennett Square modification

12.4 AI-133 Section 3.4.3.2 and 4.4.3.2 Review for Redundancy (Neis)

Neis lead a discussion for additional consideration of removing redundancy and consolidating Section 3.4.3.2 and 4.4.3.2

New Proposed wording

3.4.3.2 Simulator Scenario-Based Testing. Scenario-based testing shall be conducted to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process.	**4.4.3.2 Simulator Scenario-Based Testing.** The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process to ensure the following:

Comment [BC68]: Approved change of replacing the entire section with the new wording. Also delete the reference to Appendix E. Refer to action item #114 from our April meeting. .

	(1) The scenario meets the predetermined learning or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues; (2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence. Test data shall be acquired during scenario validation for subsequent evaluation of malfunctions, local operator actions, and other features exercised by the scenario. It shall be demonstrated that the simulator response during the conduct of the scenario-based test meets the following acceptance criteria: (1) The simulator allows the use of applicable reference unit procedures. (2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit (3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances. (4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances.

	Results of this evaluation shall be documented and include: (1) the initial conditions, description of the scenario and perturbations used to induce the transient; (2) positive demonstration or, alternatively, an assertion that the learning or examination objectives were met; (3) listing of key parameters checked and assertion that there were no unexpected changes; (4) listing of key alarms and automatic actions occurring and assertion that they would be expected for the scenario; (5) assertion that no unexpected alarms and automatic actions occurred.

Members were questioned as to why they would Vote No

Normal Evolutions

Does not have Prior to Training

Motion (Neis): Modify Sections 3.4.3.2 to read:

3.4.3.2 Simulator Scenario-Based Testing.

Scenario-based testing shall be conducted to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and

examination scenario validation process.

The discussion ended up centering on previous issues with Section 3.4.3.2 and not on the Motion for consideration.

Motion to End Debate (2/3 = 9 Fors to End Debate):

For: 9
Motion Carried – Debated is Ended

Motion Vote:

For: 11
Against: 1
Abstained: 1

Motion carried

Reason Abstained: Wanted both 3.4.3.2 and 4.4.3.2 to be considered at the same time.

Reason Against: This motion was not fully debated (debate was ended prematurely). Alternatives testing methods are not allowed. "Prior to use" is no longer in the language.

New AI-141 Tarselli – Review the possibility of incorporating alternative testing methods in addition to what is presently listed into Section 4.4.3.2

New wording for Section 4.4.3.2

4.4.3.2 Simulator Scenario-Based Testing.

The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response to satisfy predetermined learning or examination objectives by utilizing the existing training and examination scenario validation process to ensure the following:

(1) The scenario meets the predetermined learning or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues;
(2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence.

Test data shall be acquired during scenario validation for subsequent evaluation of malfunctions, local operator actions, and other features exercised by the scenario.

It shall be demonstrated that the simulator response during the conduct of the scenario-based test meets the following acceptance criteria:

(1) The simulator allows the use of applicable reference unit procedures.
(2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit
(3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances.
(4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances.

Results of this evaluation shall be documented and include:

(1) the initial conditions, description of the scenario and perturbations used to induce the transient;
(2) positive demonstration or, alternatively, an assertion that the learning or examination objectives were met;

Comment [BC69]: Approved change of replacing the entire section with the new wording. Also delete the reference to Appendix E. Refer to action item #114 from our April meeting. .

(3) listing of key parameters checked and assertion that there were no unexpected changes;
(4) listing of key alarms and automatic actions occurring and assertion that they would be expected for the scenario;
(5) assertion that no unexpected alarms and automatic actions occurred.

Felker brought to the committee a comment by an industry peer to modify Section 3.4.3.2

4.4.3.2 Simulator Scenario-Based Testing.

The intent of scenario-based testing is to ensure the simulator is capable of producing the expected reference unit response ~~to satisfy predetermined learning or examination objectives~~ by utilizing the existing training and examination scenario validation process to ensure the following:

(1) The scenario meets the predetermined learning or examination objectives and includes the appropriate instructor interfaces, operator actions, and operator cues;
(2) The simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence.

Test data shall be acquired during scenario validation for subsequent evaluation of malfunctions, local operator actions, and other features exercised by the scenario.

It shall be demonstrated that the simulator response during the conduct of the scenario-based test meets the following acceptance criteria:

(1) The simulator allows the use of applicable reference unit procedures.
(2) Any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit
(3) The simulator shall not fail to cause an alarm or automatic action if the reference unit would have caused an alarm or automatic action under identical circumstances.

Comment [BC70]: Approved change of replacing the entire section with the new wording. Also delete the reference to Appendix E. Refer to action item #114 from our April meeting. .

(4) The simulator shall not cause an alarm or automatic action if the reference unit would not cause an alarm or automatic action under identical circumstances.

Results of this evaluation shall be documented and include:

(1) the initial conditions, description of the scenario and perturbations used to induce the transient;
(2) positive demonstration or, alternatively, an assertion that the learning or examination objectives were met;
(3) listing of key parameters checked and assertion that there were no unexpected changes;
(4) listing of key alarms and automatic actions occurring and assertion that they would be expected for the scenario;
(5) assertion that no unexpected alarms and automatic actions occurred.

No action was taken on modifying Section 4.4.3.2

12.5 Next meeting at Salem Hope Creek 2004Nov08 or 2004Nov15

Most members consider the week of 2004nov08 as the best week.

12.6 Colby – Additional Standards Document correction

Rev 14a and 16a had Section 3.3.5 twice. The additional Section 3.3.5 was removed in both.

Official Revisions:

- Kennett Square (2003oct27) – Rev 14b
- DS&S (2004apr05) – Rev 16b

12.7 Ai-80 (Florence)

Presented language adding 10CFR50 Appendix B V&V to the standard.

The standard is basically clear on this and recommended to close this AI.

1.149r3 states that the Simulator Corrective Action program is not part of the 10CFR50 Appendix B QA program.

AI-80 is Closed.

12.8 Dennis – Consensus required to Pass Standard

12.9 Adjourned 2004Aug27 at 1200

13 Appendix

13.1

Refer to document: **Tech Edit of ans35rev13 0CT03.doc**

14 Action Items Carried to 2008 Standard

60	**2004aug25** **Remain Deferred** **Moved to 2008**	Priority 1	**McCullough** **Shelly**	Define the Term **Training Needs Assessment** in such a manner that it is clear in intent to both Training and Simulator staffs **2004aug25** **McCullough** **Recommend to keep deferred due to effort to correct** 2002apr23 McCullough History presentation of Training Need Assessment. See Appendix 2001Apr05 McCullough Trainers and Simulator personal view Training Needs Assesments Differently; Training Needs Analysis and Training Needs Assessment are not used consistently. McCullough will revisit this item in a future date; Reference: ACAD-85-006 “A Suppliment to Principles of Training Systems Development”
132			**Wyatt**	Review Section 4.1.4 – Malfunction testing 2004aug26 Felker Required Malfunction testing is ambiguous. Lengthy Discussion concerning removing the malfunction list in 4.1.3.

				Wyatt will assume lead role for this AI in the next standard's revision.

15 Closed Action Items

No.	Status	Date	Assigned To:	Work Assignment
2	**Date: 2000oct25** **Status:** Additional Editorial Review Required **Date: 2000mar09** **Status: Complete**		**Colby** **Welchel**	Obtain a Master Copy of the ANS 3.5 standard in Dual Column (working/1998) format. The WordPerfect copy from Shawn does not port into WORD correctly Assigned to Butch Colby.
3	**Date: 1999sep14** **Status: Complete**		**Welchel**	Get NUPPSCO comments to members
4	**Date: 1999sep14** **Status: Complete**		**Welchel**	Send copy of meeting minutes 1998Nov04 and 1999Mar02-03 to Jim Florence
5	**Date: 1999sep14** **Status: Complete**		**Florence**	Jim will look at creating a survey on the USUG WEB concerning the Action Items and for soliciting info from the industry
6	**Date: 1999sep14** **Status: Complete**		**Dennis**	Jeff will contact ANS about ANSI Historical standards Cataudella-Spoke with ANS Standards Secretary, Shawn Coyne-Nalbach Historical Standards: Past standards are retired and are only available as historical standards. 1979, 1981, 1985, and 1993 are no longer endorsed by ANSI and ANS only the 1998 standard is endorsed.
7	**Date: 2001Aug9** **Status: Complete**		**Shelly** **Vick** **Dennis**	Talk to ANS about use of footnotes, asterisks, etc in standards To review style guide. 2001Apr05 Shelly Shelly will call Shawn.

9	**Date: 2001Apr05** **Status: Complete** **Dennis**		**Dennis**	Is ANS 3 considering that the standard may address other simulators not specific to NRC Regulatory Commission licensing? 2001Apr05 Dennis - No - per SubCommittee-1 Tamp Meeting Dennis will verify with Mike concerning additional scope (adding DOE facilities into 3.5). 2001Apr05 Dennis - No - per SubCommittee-1 Tamp Meeting **2000mar09** Dennis will check at the next ANS 3 meeting

10	**Date: 2001Apr04** **Status: Awaiting Kozak conversation with Chandler and Mallay** **Date: 2001Aug09** **Status: Closed Pending input from Alan Kozak** **Date: 2001Aug27** **Status: Complete**		**Kozak** **Collins (Vick)** **McCullough**	Propose security criteria for Simulators operating in Exam Mode 2001aug27 Kozak Contact was made with James Mallary (NUPPSCO) to clarify the comment concerning "non-prescriptive" His concern was the inclusion of further details within the body and stated that if this was not the case then he has no further comment. Contact could not be made with Harish Chandler. Information gathered via the ANS survey presents the fact that all of the responding sites are applying Exam Security measures that meet the requirements of their training programs and review from other agencies, i.e. NRC, INPO. It can be safely assumed that non responders are doing like wise. Based on this information no further action should be needed for this AI. 2001Apr04 Kozak PPT Presentation outlining several Security concerns. The presentation is included in the AI-10 documentation dated 2001Apr04. Final conclusion was that the current wording is sufficient. AI Originator: Parking Lot Issue 2001Apr05 Kozak Two NUPPSCO comments: NUPPSCO supporting comment: James: Mallay stated that this item should be non-prescriptive. NUPPSCO supporting comment: Harish Chandler Kozak will call Chandler and Mallay and discuss their NUPPSCO **2000mar09** Determine source of Exam Security comment

11	**Date: 2001Apr05** **Status: Complete** **Moved to AI 13**		**Felker** **Collins** **(Vick)**	Standard Section 3.1.4 - Add information notices and any other information; establish threshold of documents to be reviewed. Correspondences change over time. Discuss at next meeting with Felker present. Origin: Parking Lot List 2001Apr05 Deferred for later discussion pending more important issues
12	**Date: 2001Aug09** **Status: Complete**			Intentionally Left Blank

13	**Date: 2002oct29** **Status: Complete**	Priority 1 – Waiting input from Florence on feedback from industry	**Felker** **Florence** **Colby**	Standard Section 3.1.3(7) - Rated coolant Flow - are BWR's OK with this? Review entire list in section 3.1.3 for applicability. Review present parameter list. Colby has additional information for discussion at the next meeting. Consider instrument accuracy relating to different plant types. 2002OCT29 Florence Approved change of 3.1.3 items 1 trough 5 from April 22-25, 2002: Action item #13. The new words in Item 1 includes the intent of old items #1, 2, 3, 5, 7, and 10 and as a result has replaced them. Old item # 8 wording changed in new item #2 to be consistent with wording in new #1. Old item # 4, # 6 and #9 were not changed and are now new item #3, 4, and 5. The main reason for the change is to eliminated unnecessary wording contained within various tables of the Standard and to make them a little more in tune with the industry as it exist in today's environment. This was also the consensus of the industry peer group based on a survey conducted by the ANS Working Group. Origin: Parking Lot List Review all List; Combined with the 3.1.3(7) item (Moved from 23); Standard Section 3.1.4 - Add information notices and any other information; establish threshold of documents to be reviewed. Correspondences change over time. Discuss at next meeting with Felker present. Note: Review associations between removal of List and Appendix. 2001Apr05 Moved AI 11 to AI 13 Deferred for later discussion pending more important issues Felker: The Simulator shall cause an alarm or automatic action only if the reference plant would have caused an alarm or

14	**Closed:** **2002apr23** **Motion**	Priority 1 –	**Paris** **Felker** **Florence** **Chang**	2001Aug 09 SK Chang proposes including *synchronization* in the new definition for stimulated device. Hal Paris and SK Chang to provide working group a revised document regarding stimulated devices in one month. Members shall respond within 30 days. Review guidance on stimulated devices. Combine stimulated hardware and stimulated devices. Issues relating to various stimulated device functions and compatibility with the simulator (e.g. Run/Freeze, History retention and Recalls/Backtracks, software revision control) 2002apr23 Motion: Change Definition of Stimulated Hardware to Stimulated Components with the definition of Stimulated Components: • **stimulated components** Hardware/software components that are integrated to the simulator process via simulator inputs/outputs which perform their functions parallel to, and either independently of or synchronized with the simulation process • Replace Stimulated hardware and Stimulated Device with Stimulated Components 2001Apr04 Paris Recommends new definition: Old Definition: "**Stimulated hardware.** Components or devices that perform their functions independently of and parallel to the simulation process" 2001Apr05 Paris Considerations for new definitions for later review

15	**Date: 2000mar09** **Status: Complete** Presentation by Allan Kozak		**Collins** **(Vick)** **Kozak** **McCullough**	Numerous uses of Training Needs Assessment (TNA) Collins - Add paragraph in Section 3.0 detailing TNA and then remove all other references to TNA. Training Needs Assessment was changed to Training Impact Assessment **2000mar09** Determine Source of this comment
16	**2002apr24** **Status: Complete** **Motion No Carried**	Priority 1 –	**Welchel** **Dennis**	Coordinate use of Discrepancy and Deviation. Consider Yoder #12. NUPPSCO Comment 2002apr24 Welchel Prepared and presented Deviation/Discrepancy and Differences replacement. Closed – Motion Not Carried **2001apr03** Welchel Discrepancy is used in sections 4.4.3.2 and 5.2. Webster's definition: Discrepancy-inconsistency Deviation – diverge

17	**Date: 2001Aug09** **Status: Complete**		**Dennis Welchel**	Get feedback from industry on actually how the 1998 standard is actually used. Use USUG meetings. Cataudella – Seabrook MANTG meeting (Aug-1999) comments: How to document Scenario Based Testing? Expand on what is V&V and what is necessary. Shelly – User feedback is not available for inclusion at this time. Develop Mission statement for working group. Cataudella – Problems implementing Scenario Based Testing. Benchmarking of various sites has shown use of V&V and scenario validation. **2000mar09** Welchel – Add relevant SSNTA meeting minutes to WG minutes. Wait for industry experience 2001Apr05 Industry Feedback Callaway has implement the 1998 Standard and presently reports no concerns. **2001apr03** Welchel As of Jan 2001, Callaway (Scott Halverson) is the only simulator presently implementing the 1998 standard. The industry consensus, as expressed at the 2001 USUG meeting, is that implementing Scenario based testing for License Class Simulator Scenarios is unworkable. It is generally agreed that the Regulatory carrot for using the simulator for License Candidate Reactivity Manipulations, is a significant positive for adopting the 1998 3.5 ANS standard. Activity: MANTG Mar 2001 SSNTA Jan 2001 SCS Jan 2001 USUG Jan 2001

18	**Date: 2000mar09** **Status:** **Closed Statement (**Do we need to put some boundaries as to the limits simulator**)**		**Kozak** **Shelly** **Cox** **Havens** **Florence**	Part-Task – Should Part-Task become part of the standard or remain as an appendix. Possibly look at tying the Standard body to the Appendix; Application of Full Scope Simulators. Outside interest are asking for uses of simulators that are not related to Operator Training. ~~Do we need to put some boundaries as to the limits simulator;~~(Closed 2001Apr05) Origin: Scope Change at Oconee Meeting 2001Apr05 Florence Moved from AI 22 Look at the use of Simulator, Simulation Facility; Definitions change Simulation Facility becomes Simulator; Simulation Facility is now defined as the collection of Simulators; Coordinate use of Simulator and Simulation Facility. 2001Apr05 Kozak Close the Boundry issue *Do we need to put some boundaries as to the limits simulator;* 2001Apr05 Kozak See Minutes Body **2000mar09** Presentation of Virginia Power Classroom/Part-task trainer at the 2000mar09 meeting Related AI: 41

19	**Date: 2001apr05** **Status: Complete** (This Item will be ask on Survey#2)		**Colby** **Florence**	Using the simulator for other than Operator Training. Uses in predictive analysis and design mods, SAMGS procedures changes; 2001Apr05 Colby Include this as part of Survey #2 and Closed **2000mar09** Scope change. This will require approval from ANS-3
21	Date: 2000mar10 Status: Complete Keith Welchel wanted to dismiss this item. The WG agreed.		**Collins (Vick)** **Welchel** **Chang**	(JFC/KPW/JS) Hybrid Simulators. Hybrid Simulator refers to a simulator that implements many different technologies, source code vendors, different operating systems, integration vendors, etc. Maybe we need to have words that stipulate that testing needs to cover all the other changes we make to the simulator that may affect the operation of the simulator: Instructor Console, Operating Systems, New I/O, etc. (Voted to Dismiss-Consensus) Comments on regulation - The Working Group will not comment on regulations. The Standards Working Group is working in Working Group space. **2000mar10** Keith Welchel moved to dismiss this item. Jim Florence Seconded;

22	**Date: 2001apr05** **Status: Complete**		**Florence Kozak**	~~Workshops on Testing Philosophy (what are the benefits? testing that provides results); USUG participation;~~ ~~Schedule workshop during USUG at SCS in Jan. 1999. Develop materials for handout. Florence led material development.~~ Closed 2001Apr05 Complete Look at the use of Simulator, Simulation Facility; Definitions change Simulation Facility becomes Simulator; Simulation Facility is now defined as the collection of Simulators Coordinate use of Simulator and Simulation Facility. Closed Moved to AI 18 Jim gave a presentation at the 2000 SCS conference during the USUG meeting.
23				Intentionally Left Blank
24	**Date: 2000mar09** **Status: Complete** **No Action.** Real-time at this time does not seem to be an industry concern at this time. Committee members had no issues with the definition or Section 4.1.1. Therefore, this AI was Closed.		**Dennis DeLuca**	Real Time - Dennis will give further consideration and he will look at industry standards; Measuring Real-Time;

26	**Date: 2000mar10** **Status: Complete** Historical information was presented at the SCS conference. Dennis checked with ANS Headquarters and this issue was discussed in detail		**Dennis**	1985 ANS 3.5 Standard is Historical Standard; Dennis will follow up with Shawn and Mike Wright about Historical/Active Standards and how the present process does not follow the five year; How should we handle or should we comment that the 1985 ANS/ANSI 3.5 standard is now an Historical standard and is no longer in the ANSI catalog. Does the ANS 3.5 Working Group need to comment on this issue; Utilities would need to take exception by treating Certification as other; Mark up the Form 474 and state the other that you are going to do. Scenario Based testing (> 25%/yr.); Performance Based testing Plan Dennis will call Mike Wright confirming ANS-3 understands the Historical Standard issue
27	**Date: 2001Aug09** **Status: Complete**		Collins(Vick) Dennis Koutouzis	(JFC/TD) Possible cross-pollination with other standards. Frank and Dennis will contact others 2001Apr05 Dennis Reference: ANSI/ISA–77.20–1993 Fossil Fuel Power Plant Simulators – Functional Requirements Reviewed FAA WEB Site: www.faa.gov/nsp Simulator Qualifications: www.faa.gov/nsp/ac.htm Colby –To research Navy Simulator Systems Colby – To research Germany regulatory standards
28	**Date: 1999sep15** **Status: Complete**		**Florence**	Suggested a letter to Jim Stavely asking for a commitment to attend meetings along with 02Mar1999 meeting minutes; however, Jim Stavely resigned and submitted replacement resume Oliver Havens, Jr;

29	**Date: 2000mar10** **Status: Complete**		**Florence** **Dennis**	Vice-chair prepare letter to Jim Davis asking for commitment to attend meetings along with 02Mar1999 meeting minutes; Chair to sign and send. Chair to send letter to Jim Davis and Ken Rach thanking them for their past participation and asking them for substitute resumes.
30	**Date: 2001Apr05** **Status: Complete**		**Florence** **Welchel**	Jim Florence suggested that the following information be placed on the USUG Web Page: ANSI-3.5 Membership List, approved meeting minutes, meeting schedules and meeting agendas. Florence/Welchel will ensure WEB page is updated Florence: Check with Shawn (ANS) for WEB space. Check with USUG for WEB Space 2001Apr05 Florence Membership List Minutes Meeting Schedules Will not use ANS WEB Site All future approved ANS WG minutes will be placed on the USUG WEB site.
31	**Date: 1999sep15** **Status: Complete**		**Dennis**	Mission statement for Working Group for the 2003 standard. AI #31 added 1999sep14 **1999sep15:** Voted not to complete

32	**Date: 2001Apr04** **Status: Closed by Motion**	**1999sep15**	**Colby** **Collins** **Koutouzis** **Havens** **Felker** **McCulough**	Description: Multi-Units. Application of reference unit simulators to non-referenced units. Butch has offered to survey the industry. INPO will assist by supplying information from their databases; Misc Info: Reg Guide 1.149 refers to Multi-Unit Plant, but 3.5 does not. Felker - Simulators other than the referenced unit are not covered by this standard; 2001Apr04 The WG, by Motion, closed AI 51 and 32. There was agreement that the 3.5 Standard does not cover simulator configured for Multi-Unit use. The Multi-Unit issues are basically training related and are not minimum reference unit Standard's space. Additional Survey questions will be directed by AI 50. The WG approved a motion to delete AI 32 and AI 51 and Colby will still ask survey questions concerning multi-unit plants. **2000Oct26:** **Butch will request bullets on Multi-Unit from the Group for next meeting**

33	**Date: 2001Apr04** **Status: Complete**		**Havens** **Kozak** **Shelly** **Welchel**	Change 24-month design change limit to some shorter period. **2001apr03** Welchel Proposed new wording: ***5.3.1.2 Subsequent Upgrade.*** *Following the initial upgrade, reference unit modifications determined to be relevant to the training program shall be implemented on the simulator within 24 months of their reference unit in-service dates, or earlier if warranted by a training needs assessment.* Requiring that a determination of the relevance to training and that a training needs assessment be completed should be sufficient. Recommendation is that the "24 months" be removed and that section 5.3.1.2 should read: ***5.3.1.2 Subsequent Upgrade.*** *Following the initial upgrade, reference unit modifications determined to be relevant to the training program shall be implemented on the simulator based on training needs assessments in accordance with the criteria provided in 4.2.1.4.* ***5.1.2.2 Subsequent Update.*** *Following the initial update, new data shall be reviewed, and the simulator design data base appropriately revised, once per calendar year. Modifications made to the reference unit shall be reviewed for determination of the need for simulator modification within 12 months.* ***5.1.2.2 Subsequent Update.*** *Following the initial update, new data shall be reviewed, and the simulator design data base appropriately revised, once per calendar year. Modifications made to the reference unit shall be implemented on the simulator based on training needs assessments in accordance with the criteria provided in 4.2.1.4.* . WG agreed to close this AI with no further discussion. The 12 and 24 month timelines could be used to ensure the modifications.

34	**Date: 2001Apr05** **Status: Complete**	**1999sep15**	**Welchel** **McCullough** **DeLuca** **Koutouzis**	Present standard does not address software bugs, discrepancies, and enhancements. Time limits only relate to plant design changes, no time limits are associated for simulator fidelity and enhancements. Origin: Welchel 2001Apr05 Closed – Other issues are handled with the Simulator Configuration Process Related AI: 36
35	**Date: 2001Apr05** **Status: Complete**	**2000mar08**	**McCullough** **Collins(Vick)**	Review the double column Draft Working Document prepared by Butch Colby 2001Apr05 McCullough Reviewed and recommend no changes at this time. Footnotes in the side-by-side format do not agree with the original document but this should clear up when the double format is deleted. Additional editorial work may be needed to ensure the footnotes align correctly.
36	**2004aug25** **Closed** **Date: 2003Mar10** **Status: Deferred until 2008**	Priority 2	**Koutouzis** **Havens**	Questions from Review of INPO Documents: • Timeline for incorporation of Plant design changes into the simulator • Instructor Performance • Long Term Open Simulator Fidelity Issues This is an information AI **2004aug25** **Koutouzis update**

				The Chair closed this AI. **2003Mar10** **Koutouzis** **No INPO statements on Simulator Fidelity.** **INPO is primarily focused on performance based issues, but will address programmatic issues.** 2002Apr24 Havens – Keep this AI open pending additional input and data. Koutouzis is gathering additional data. Recommends to do nothing right now No Update 2001Apr05 Koutouzis No Update Related AI: 34
37	**Date: 2001Apr05** **Status: Complete** **Group agreed to closed this item. No additional information required.**	2000mar08	**Koutouzis** **Collins(Vick)**	Five Required Control Manipulations Clarification 2001Apr05 Koutouzis No Update
38	**Date: 2001Apr05** **Status: Complete**	2000mar08	**Dennis**	Discuss the ANS definitions and process of Clarification and Interpretation 2001Apr05 Refer to Meeting Minutes {find the meeting minutes and place here}

39	**Date: 2001Apr05** **Status: Complete**	2000mar08	**McCullough** **Florence** **Felker**	Consider differentiating validation of Requal and Initial License Scenarios 2001Apr05 McCullough {Add LTI Document Here}
40	**Date: 2002oct31** **Status: Complete**	Priority 1	**Cox** **Vick** **Florence** **Collins** **McCullough**	Appendix Update for Scenario Based Testing Documentation. 2002oct31 Florence New Appendix E Accepted See Minutes Appendix 2001Apr05 Draft a Scenario Based Testing Guideline (new) Appendix
41	**Date: 2000Oct26** **Status**: **Complete**	2000mar08	**DeLuca** **Colby**	Appendices consideration up-front and not as an after thought. Tie documentation and Testing to the Standard Body Related AI: 18 **Resolution (2000Oct26 – Colby)**: Continue using Appendices A and B as is Recommendation to revisit appendices content Consider moving Appendix D (Part-Task) into standard main body Related AI-18

42	**Closed:** **2002apr23** **Motion**	Priority 1 -	**Chang** **Felker** **Cox**	Use of Verification and Validation Origination: Colby Survey **2002apr23** **Closed by Motion** **2000Oct26:** **Chang to look at Survey and determine the issues with Verification and Validation and bring to next meeting** **Origin: ANS 3.5 WG Survey #1** **2001Apr05** **Felker** **The use of V&V as espoused through the IEEE 7xxx standards for SW Validation. We have outside documentation regarding the use of the term SW Validation &Verification;** **It is not V&V as defined in the Nuclear Industry.** **2001Aug09** **SK will put out a revised document on V&V in one week. Members shall respond within 30 days.**
43	**Date: 2001Apr03** **Status: Complete**	2000mar08	**Welchel**	Send 1998 Standard NUPPSCO comments to: Hal Paris Bob Felker Bud Havens **2001apr03** Welchel - Delivered 2001apr03

44	**Date: 2002oct29** **Status: Complete**	Priority 1 -	**Paris** **Havens** **Chang**	Clarify Simulator Repeatability wrt to Real-time and not Scenario Based Testing. Repeatability is not specified for Scenario Based Testing but is related to Real-time. 2002oct29 Paris Closed Refer to 2002apr motion to leave wording as is. This item is closed (originated form 1998 NUPSCO comments TVA) 2001Apr05 Paris Concern: What is Repeatability? Further review is needed. See Attachment for AI 44 **2000Oct26:** **Hal and Group will review the use of these terms and consistency**
45	**Date: 2000Oct26** **Status: Complete**	2000mar08	**Shelly** **Chang** **Havens**	Clarify Overrides do not have to be tested like Malfunctions and are not Malfunctions. (Survey Comment 3.15 p20) **2000Oct26:** **Non-issue because it's related to CFR and not the standard** Not all Overrides need to be tested Only Overrides in Scenarios need to be tested AI45 Originated from Colby survey Confusion between the CFR about 25%/yr and the 98 standard linking Overrides to Malfunctions Recommend that this is a non-issue and should be closed because its not an issue with the standard but is with the 10CFR Part 55

46	**Date: 2001Aug09** **Status: Complete**		**Committee**	Request members review the other parts of the survey and comment. Members are ask to review and submit two bullets that they consider important for further ANS3.5WG consideration
47	**Date: 2000Oct26** **Status: Complete**	2000mar09	**Colby**	Send Thank You notes to all Survey Participants
48	**Date: 2000Oct26** **Status: Complete**	2000mar09	**Colby**	Modify DCD Training Needs Assessment to Training Impact Assessment **2000Oct26:** **Deleted due to Motion by Felker being Carried** **WG decided to revert back to Training Needs Assessment**
49	**Date: 2000Oct26** **Status: Complete**	2000mar09	**Kozak**	Determine source of Training Needs Assessment Related AI: 15 **2000Oct26:** **Could not determine the Source of Training Needs Assessment**
50	**Date: 2001Apr04** **Status: Complete** **Redundant to AI 10**	2000mar09	**Colby**	Additional survey concerning Exam Security Concerns 2001Apr05 Colby Close redundant to AI 10. Closed 2001Apr04 Kozak presented a PPT presentation outlining and defining security issues Closed based on better understanding of NUPPSCO.

51	**Date: 2001Apr04** **Status: Closed by Motion**	2000mar09	**Colby**	Send out another survey concerning Multi-unit questions and will try to target Simulator, Training, and OPS 2001Apr04 The WG, by Motion, closed this AI 51 and 32. There was agreement that the 3.5 Standard does not cover simulator configured for Multi-Unit use. The Multi-Unit issues are basically training related and are not minimum reference unit Standard's space. Additional Survey questions will be directed by AI 50. The WG approved a motion to delete AI 32 and AI 51 and Colby will still ask survey questions concerning multi-unit plants;
52	**Date: 2000Oct26** **Status: Complete**	2000mar09	**Felker**	Locate previous Multi-Unit work completed by the 1993 WG. Bob will contact Bill Geiss **Resolution**: 2000Oct26 Felker Material does not exist.
53	**Date: 2001Aug09** **Status: Complete**		**Colby**	Review the Appendix A – A(3) (BOM). Consider removal of the BOM list and replace with I&C list 2001Apr05 Colby March 2000 meeting minutes Working Doc Editor to remove BOM from Appx A
54	Date: 2000Apr05 **Status: Complete**	2000mar09	**Vick**	Aquire US Government Style Guide 2001Apr05 Style manual given to Style Editor.
55	Date: 2000Oct25 **Status: Complete**	2000oct25	**Dennis**	Distribute Robert Boire work assignments 2001Oct25 Completed

56	Date: 2000Oct26 **Status: Complete**	2000oct25	**Colby**	Contact Mr. Cox (Com Ed) for 3.5 WG participation. **2000Oct26** **Colby called Mr Cox but Mr Cox is out until 2000Oct30.** **Terrill Laughton attended on behalf of Mr Cox**
57	**Date: 2002Oct29** **Status: Complete**	Priority 1 -	**Dennis** **Vick** **Colby**	Remove all references to 3.1 2002oct29 Dennis - Closed Verified by working group in Standard Draft Rev 6. 2002apr24 Dennis Vick and Colby will determine the changes necessary and bring these to the committee for approval. Revised wording presented to Working Group. One negative comment resolved by personal review of ANS-3.1; Motion passed to accept wording (see 14.11 2002apr22 minutes) 2002apr23 Dennis Get Copy of 3.1 for review. 2001Apr05 Dennis Deferred for later discussion.

58	**Date: 2002apr24** **Status: Complete**	Priority 1	**Dennis**	Send Robert Boire a note of thanks for his participation 2002apr24 Dennis Closed Letter reviewed by members. 2002apr23 Dennis Letter sent. Get copy of letter for members review. 2001Apr05 Dennis Letterhead not available. Florence will contact Shawn at ANS and request letterhead.
59	**Date: 2002apr23** **Status: Complete**	Priority 1	**Florence McCullough**	Develop a list of Action Items for 3.5-WG resulting from the 2000Oct26 USUG Ops Test Directors Meeting at DC Cook 2002apr23 Closed Closed – Items were reviewed by WG in the Oct 2000 meeting and they were incorporated into the Working Groups public comment to the NRC's proposed rule change. 2001Apr05 Florence Deferred until Florence communicates with McCullough
61	**Date: 2001apr03** **Status: Complete**	2000oct26	Welchel Dennis	Write letter to NRC concerning the WG comments on the proposed rule change 2001apr03 Welchel – Letter Written and mailed to NRC stating the three issues regarding the proposed rule change.

62	**Date: 2001Aug09** **Status: Complete**		Koutouzis	Send Meeting Materials to Absent members;
63	**Date: 2001Aug09** **Status: Complete**		Dennis	Address the problem of other standards placing requirements on the ANS 3.5 Standard without our knowledge. (NFSC Sub-Committee I);
64	**Date: 2001Aug09** **Status: Complete**		Florence Dennis	Florence to prepare W. DeLuca letter for T. Dennis signature;
65	**Date: 2001apr03** **Status: Complete**		Welchel	NUPPSCO comment to Kevin Cox (Complete)
66	**Date: 2001Aug09** **Status: Complete**		Havens	Scan NRC Form 398 and Email to WG members

67	**Date: 2001Aug09** **Status: Complete**		Dennis	Contact Shawn concerning Clarification Statement 2001jul11 Ms. Shawn M. Coyne-Nalbach NFSC Secretary American Nuclear Society 555 North Kensington Avenue La Grange Park, IL 60526-5592 Dear Ms. Coyne-Nalbach: Subject: Request for Clarification Reference: ANSI/ANS-3.5-1998 Standard Document, Section 4.4.3.2 I am a supervisor for the Nebraska Public Power District's Cooper Nuclear Station responsible for maintaining the functional requirements for our full-scope nuclear power plant control room simulator used for operator training and examination. I am writing this letter to your organization to request a clarification to the reference document in regards to Simulator Scenario-Based Testing. Section 4.4.3.2 of the reference document states that scenarios developed for the simulator, including the appropriate instructor interfaces and cueing, shall be tested before use for operator training or examination. The simulator shall be capable of being used to satisfy predetermined learning or examination objectives without exceptions, significant performance discrepancies, or deviation from the approved scenario sequence. A record of the conduct of these tests, typically in the form of a completed scenario or lesson plan checklist, and the evaluation of the test results, shall be maintained. I am concerned that the Standard requires scenarios developed for the simulator shall be tested before use for operator training or examination. It appears that this requirement may not be achievable with all operator training programs, namely initial license candidate training programs. Please clarify the preceding paragraph by addressing the following questions: 1. What is the intent of scenario-based testing? Does scenario-based testing impose additional training program requirements? ANS-3.5 Working Group answer: Scenario Based Testing is intended to best utilize, to the extent possible, the existing training scenario development process

68	**Date: 2003Mar11** **Status: Complete** **Date: 2002oct30** **Status: Re-Opened** **Closed** **2002apr24**	Priority 1	**Colby** **Shelly** **Felker**	Survey #2 Multi-Unit Different OPS Procedures Fuel Cycles Time Delay loading Sim Fuel load Unit Procedure Differences and Training **2003Mar11** **Colby** **Presented list of survey results.** **Motion:** **Delete Malfunction List Table in Section 3.1.4 and move to Appendix A** **2003Mar10** **Colby** **Presented list of survey results.** **This item was originally discussed in AI-83.** **2002oct30** **Reopened to consider additional Survey data.** **Consider AI-83 - Malfunctions List and Survey Results** 2002apr24 Colby Recommend Closing due to information will be handled by future Action Items. 2002apr23 Colby Nothing here that would be changed in the 2003 standard. 2001AUG7 All survey's have not been received, so the final results of the survey will be discussed at our next meeting in March.

69	**Status: Complete** **2002apr24**		**Vick**	Check out and report information on SECY-01-0125 2002apr24 Vick Simulator rule is in effect Nov 16,2001 and SECY reference is now background info only.
70	**Date: 2002oct29** **Status: Complete**		**Florence**	Come up with a set of rules for use and what will go on the web site. **2002oct29** Florence Closed WEB Site Changes: • Only latest minutes will be posted • Contact Keith Welchel to request previous minutes • ANS 3.5 WEB will not be password protected • Remove membership contact info accessible by general public 2002apr24 Florence Handout presented to members for review. AI-70 will be closed when the ANS 3.5 WEB site is password protected. Password protect the ANS 3.5 WEB site and post amended ANS 3.5 WEB page use policy.
71	**Date: 2002apr24** **Status: Complete**		**Dennis**	Vary if ANS normally provide the minutes of group meetings 2002apr24 Dennis Provided by request by ANS.

72	**Date: 2001Nov27** **Status: Complete**		**Shelly**	Check if we can add an appendix and still reaffirm **2001Nov27** **Shelly** I contacted Suriya with this question, and his response was that a standard can be reaffirmed if the appendix/annex will be informative. If the additional appendix is informative, then you should supply a statement in the foreword regarding this informative piece. The statement in the forward is NOT required but highly recommended. The standards can not be reaffirmed if the additional appendix will be normative. In this case the standard will have to be considered under the revision process through ANSI. According to Webster's, NORMATIVE means "of, relating or conforming to, or prescribing norms". Based on this, we could add an appendix to the standard and still reaffirm the current standard, but we must ensure the appendix contains clarifying information and doesn't prescribe any new requirements or parameter limits. I consider this action closed unless someone knows of a need for further research on this issue.

73	**Status: Complete** **2002apr24**		**Dennis**	Send the clarification letter to ANS on the Scenario Based Testing 2002apr24 Dennis Published in the Nuclear Standards News, Vol. 33/No. 2 March-April 2002
74	**Status: Complete** **2002apr24**		**Dennis**	Contact ANS Standards Administer to determine if we can refer to documents other than ANS Standards 2002apr24 Dennis
75	**Status: Complete** **2002apr24**		**Jim** **Florence**	Contact the industry 2002apr24 Florence does not know what this is about. Recommend to close .
76	**Status: Complete** **2002apr24**		**Butch & Hal**	To research Germany regulatory standards and navy standards 2002apr24 Colby Most International simulator customers refer to ANS 3.5 in their purchase spec
77	**Status: Complete** **2002apr22** **Dennis**		**Dennis**	Determine if the ANS 3.5 Working Group name will change due to the ANS 3 to ANS-21 name change. Closed 2002apr22 Dennis contacted Suriya Ahmad at ANS headquarters and no change is planned for ANS 3.5.

78	**Status: Complete 2002apr24**		**Keith Welchel**	AI16 - Prepare a document for review by ANS members that shows the result of substituting Difference for Deviation/Discrepancy. 2002apr24 Colby Prepared summary of all Deviation/Discrepancy and Difference replacements and reviewed with members.
79	**Date: 2002oct30 Status: Complete**		**Vick Cox Kozak**	Bring to the committee recommendation for implementing Roberts Rules or Order. (i.e. Revisiting Motions Not-carried) **2002Oct30** **Cox** **Consensus that Robert's Rules of Order will used a general guide**
81	**Date: 2002Oct29 Status: Complete**		**Dennis**	Get copy of ANS 3.1 for members review. **2002oct29** **ANS 3.1 is no longer referenced in ANS 3.5; No need for ANS 3.1.** **2002Apr24 Closed** **Dennis** **Copy of ANS-3.1 obtained from ANS Standards Secretary.** **Copy given to requesting Working Group member for review.**
82	**Status: Complete 2002apr24**		**Dennis**	Get copy of Letter of thanks to Robert Boire for members review 2002apr24 Dennis Members reviewed letter

83	**Date: 2002oct30** **Status: Complete**		**Colby**	Compare 3.1.4 Malfunction List with 10 CFR Part 55.59 **2002oct30** **Colby** **Reviewed items that are in 10CFR55.59 but are not in the Standard. This item was discussed before.** **This item may be discussed in AI-68.** 2002oct29 Colby Reviewed 10CFR55.59 List (See Appendix AI-83)
84	**Date: 2002oct29** **Status: Complete**		**Florence**	Review 4.4.3.1 for clarity concerning SBT and to remove Certification reference **2002oct29** **Florence** Complete Refer to AI-40 AI-84 was completed at Jackson meeting via AI-40. Cannot find reference in past minutes why this AI was created. AI-84 has been completed and is thus Closed.
85	**Date: 2002Oct28** **Status: Complete**		**Welchel**	Create another Bucket to place 2008 deferred AI's **2002Oct28 Closed** **Welchel** **New Section and Table to Hold Deferred Action Items**
86	**Date: 2002oct29** **Status: Complete**		**Colby** **Florence**	Create Frank Collins Plaque for review membership 2002oct29 Colby Colby create a plaque for the group to consider. Plaque is mahogany base with Brass ANS Logo and wording.

87	**Date: 2002oct29** **Status: Complete**		**Colby**	Review MANTG Simulator Historical base-line data 2002oct29 Colby Closed – Reference Section 5.1 "Current Simulator"
88	**Date: 2003Mar10** **Status: Complete**		**Cox**	Review simulator Fidelity. Standard does not define Software Fidelity, only HW Fidelity **2003Mar10** **Vick** **New AI - Recommends having Document Edited by a Technical Editor** **Complete – No need to define SW fidelity.** 2002oct30 Cox Cox and Vick will recommend new definition.
89	**Date: 2002oct29** **Status: Complete**		**Shelly** **Vick**	Review 4.4.3.1 "once per year on a calendar basis language" **2002oct29** **Shelly** **Defeated on Motion**

90	**Date: 2003Mar12** **Status: Complete**		**Florence** **Colby** **Cox** **Chang**	Review all Section for alignment specifically Sections 3.4 and 4.4 and report and recommend new Section alignments **2003Mar12** **Colby** **Report to committee complete** **AI-Closed** **Refer to AI-102** **2003Mar11** **Colby** **Motion: Defer AI-90 to 2008 Standard** **Motion withdrawn pending further discussions** 2002oct30 Colby Action deferred to next meeting. See AI-90 meeting minutes 2002oct30.
91	**Date: 2003** **Status: Complete**		**Dennis**	Call Mike Wright and get a determination on standards organizational alignment and possible standards name change **2003Mar11** **Dennis** **Refer to AI-77** **No further change from NFSC Nov 2002 meeting** 2002oct28 Dennis

92	**Date: 2003Mar11** **Status: Complete**		**Florence** **Colby** **Kozak**	Improve Definition of Simulation facility to include Part-task and limited scope. (coordinate with Scope State) **2003Mar11** **Colby** **Motion:** **Revise Scope Statement**
93	**Date: 2003Mar10** **Status: Complete**		**Shelly**	Appendix and Standard Dates referencing Are Appendices required to reference the standard's published date. **2003mar10** **Shelly** **Contacted Suriya Ahmad of ANS.** **Response: The appendix reference to the standard's published date is part of the ANSI's format when publishing a standard. Therefore, it can not be removed.**
94	**Date: 2003Mar10** **Status: Complete**		**Colby**	Align Appendix Header dates to Appropriate Published Standard Date **2003Mar11** **Colby:** **Presented New Appendix Wording**

95	**Date: 2003Mar11** **Status: Complete**		**Felker** **Florence** **Kozak**	Section 4.4.3.2 New 4.4.3.2 wording and/or integrate 4.4.3.1 and 4.4.3.2 **2003Mar11** **McCullough** **Motion to add procedural in Section 4.4.3.2 and Appendix E.** **Modify Paragraph Numbered Item (2) Section 4.4.3.2** (2) the simulator is capable of producing the expected reference unit response without procedural exception, significant performance discrepancies, or deviation from an approved scenario sequence; **Modify paragraph after "Scenario Lesson Plan Title:" in Appendix E** This test verifies that the simulator may be used to satisfy predetermined learning or examination objectives without procedural exception, significant performance discrepancies or deviation from the approved scenario sequence, including the appropriate instructor interfaces, operator actions, and operator cues.
96	**Date: 2002Oct30** **Status: Complete**		**Kozak** **Chang**	Locate a copy of INPO document concerning pre-running Scenarios and determine what validation is required. **2002Oct30** **ACAD 90-022 – "Guidelines for Simulator Training"** **The document uses the word "should" to validate scenarios before use in operator training.** **This document is only a guide.**

97	**Date: 2003Jul24** **Status: Complete**		**Dennis**	Determine reference usage within ANS Standards. Can the 3.5 Standard reference an INPO document? **2003Jul24** **Dennis presented minutes from NFSC meeting. It was noted that INPO documents are generally available to the public at large and should be avoided. But, may be used if required.** 2003Mar11 Dennis Researching using documents not available to general public.
99	**Status:** **Complete** **2003Oct28**		**Vick** **Koutouzis**	Vick and Koutouzis will have Standard reviewed by Technical Editors for consistency 2003Oct28 Complete Technical Review completed and present to working group. 2003Mar10 Initial Action Item.

100	**2003Jul24** **Status: Complete**		**<u>PWR</u>** **McCullough - Lead** **Neis** **Chang** **Kozak** **Welchel** **<u>BWR</u>** **Havens - Lead** **Felker** **Florence** **Panfil** **Tarselli** **Vick - Coordinator**	Create two subcommittee's (PWR and BWR) that will investigate Core Performance testing inclusion into the Standard. • Review Section 3.1.3 "Normal Evolutions" Item 9 ANS 3.5 1998 with regard to Core Performance testing for PWR and BWR types. • Should Core Performance be in Section 3.1.3 Is Unit Performance Testing the correct term or did the committee mean Core Performance Testing. **2003Jul24** **Closed** **Accept changes to sections: 3.1.5, 4.1.5, 4.4.3.1, 5.3.2** 2003Mar10 Initial Action Item.
101	**2003Jul24** **Status: Complete**		**Neis** **Felker** **Kozak**	Review 3.2.1.4 for language clarification **2003Jul24** **Neis** **Proposed new Wording** **Passed by Amended Motion** 2003Mar10 Initial Action Item.

102	**Status:** **2003Oct30** **Complete**		**Colby** **Paris** **Dennis** **Koutouzis** **Shelly** **Cox** **Vick - Coordinator**	Review Sections 3, 4, 5 and 6 for alignment and consistency and possible merge. **2003Jul21** **Colby** **Distributed comparison and groups were formed to review and report next meeting** Inform Tim Cassidy that Sections are under review. Options: • This Standard • Next Standard Formatting • Keep the Sections separate but aligned • Merge the Sections **2003Mar10** **Initial Action Item.**
103	**Status:** **2003Oct28** **Complete**		**Colby**	Will create two Revised Standards Versions Version 1 1998 versus 2003 No History Version 2 1998 versus 2003 with Revision History **2003Oct28** **WG is not sure what the reason for this AI. The WG recommend closing this AI. Colby can deliver this information at a later time.** 2003Mar10 Initial Action Item.

104	**Status:** **2003Oct28** **Complete**		**Vick**	Review the parliamentarian procedure for motion approval (75% Consensus Rule of the Chair) Rule of the Chair: Interim Voting (Motions) shall be by Consensus Action: Vick will review and advise at future meetings **2003Oct28** **Rule of the Chair is 75% for consensus motions. 75% for consensus is from ANS.** 2003Jul24 Initial Action Item
105	**Status:** **2003Oct28** **Complete**		**Shelly Neis Koutouzis**	Incorporate technical writing editor modifications for committee review Refer to Colby AI-102 handout (Comment 1 and 2) concerning technical editor review and suggested changes **2003Oct28** **Complete** **Delivered to WG via Email. AI-106 will continue Tech Editing Review.** **2003Jul24** **Initial Action Item**

106	**Status:** **Closed** **2004Apr05**		**Shelly-Lead** **Committee**	Working Group will review tech Editing markup Marked up version was distributed to committee members Comments to Shelly by 2003Sep01 **2004Apr05** **Shelly presentation** **Closed per Section 5.3 of the ANSI Style Manual (8th edition, version 1.0, 1991) addresses the use of notes within a standard.** 2003Oct31 Determine use of the term "NOTE" in the standard. 2003Jul24 Initial Action Item
107	**Status:** **2003Oct27** **Complete**		**Wyatt-Lead** **Neis** **Vick** **Koutouzis** **Havens** **Florence**	Determine what may be acceptable performance test documentation and evaluation test results documentation to take credit for a scenario-based test. Provide a white paper to the Working group for discussion at the next meeting. **2003Oct27** 2003Jul24 Initial Action Item

108	**Status:** **2003Oct30** **Complete**		**Felker** **Vick**	Review Section Comparison Section 3.0 Section 3.1 Section 3.1.1 Section 3.1.2 Format of change: • Reline changes (Track Changes) • Add "why change is made" comment for each change • Email changes to Florence for consolidation by 2003Oct01 Be prepared to present to WG at next meeting **2003Oct30** 2003Jul24 Initial Action Item
109	**Status:** **2003Oct28** **Complete**		**Havens** **McCullough**	Review Section Comparison Section 3.1.3 Section 3.1.4 **2003Oct28** **Amended Sections:** 2003Jul24 Initial Action Item

110	**Status:** **2003Oct28** **Complete**		**Welchel** **Paris/Noe**	Review Section Comparison Section 3.2 **2003Oct28** **Amended Sections:** **3.2.1.1 – 4.2.1.1** **3.2.1.2 – 4.2.1.2** **3.2.1.3 – 4.2.1.3** **3.2.1.4 – 4.2.1.4** 2003Jul24 Initial Action Item
111	**Status:** **2003Oct30** **Complete**		**Neis** **Kozak**	Review Section Comparison Section 3.3 **2003Oct30** 2003Jul24 Initial Action Item
112	**Status:** **2003Oct30** **Complete**		**Florence** **Tarselli** **Chang**	Review Section Comparison Section 3.4 **2003Oct30** 2003Jul24 Initial Action Item

113	**Status: Closed** **2004Apr07**		**Havens** **McCullough** **Tarselli** **Kozak**	Appendix B Revision to Appendix B will address requirements as a result of AI-100 Update Appendix B with Core Performance as a result of adding Core Performance Testing in the Standard **2004Apr07** **Closed with no Action. WG could not come to a consensus on the placement and word for adding additional CPT requirements and testing criteria into the standard.** 2003Oct31 Havens presented a revised Appendix B. Havens will review and make another recommendation at the next meeting. 2003Jul24 Initial Action Item
114	**Status:** **2004Apr08** **Complete**		**Felker** **Florence** **Neis**	SBT Resolution Felker will review section 4.4.3 and recommend a resolution to the SBT and checklist problem. **2004Apr08** **Completed SBT with various changes** **2003Oct28**

115	**Status:** **2003Oct30** **Complete**		**McCullough**	Find a another home the existing wording of Section 3.4 Create Data Collection Section **2003Oct30** **Removed all wording Section 3.4 and added new Section 3.3.5 and 4.3.5 Data Collection** **AI-115 and AI-115 were considered at the same time and Accepted by Motion** **2003Oct29** **Initial AI**
116	**Status:** **2003Oct30** **Complete**		**Koutouzis** **Florence**	Develop the requirements, Section 3.4 for Section 4.4 that better defines the requirements for V&V **2003Oct30** **2003Oct30** **New wording for Section 3.4** **AI-116 and AI-115 were considered at the same time and Accepted by Motion** **2003Oct29** **Initial AI**
117	**Status:** **2004Apr08** **Complete**		**Havens**	Review and evaluate references to Section 3.1.3 to determine if the correct linkage is still maintained **2004Apr08** **Changes to 3.2.2.1, 3.2.2.2, 4.2.2.1, 4.2.2.2, 4.1.3.2 to reference 3.1.3.2 instead of 3.1.3** 2003Oct30 Initial AI

118	**Status:** **2004Apr08** **Complete**		**Colby**	Examine Stimulated Hardware references to determine modification to Stimulated Components **2003Apr08** **Review presented by Colby and no Action required** 2003Oct30 Initial AI
119	**Status:** **2004Apr08** **Complete**		**Kozak**	Investigate the impact of removing "or initial condition" in paragraph one of Section 3.1.3 **2004Apr08** **Review and presentation by Kozak** **Recommendation to Do Nothing** **WG agreed to Close** 2003Oct30 Initial AI
121	**Status:** **2004aug23** **Complete**		**Florence**	During review of AI-106, three technical edits were considered "more than just technical edits" and were not adopted. Florence will champion the three issues: Affected sections: • Section 4.2.2.2 • Section 5.3.1.2 • Section 4.1.2.3 **2004aug23** **Several motions were considered.** 2003Apr05 Initial AI

123	**Status:** **2004aug24** **Closed**		**Felker**	Consideration of Change of Section 1.2 first two sentences **2004aug24** **Felker will send a note to Peer stating WG will take no action.** 2003Apr05 Initial AI
125	**Status:** **2004aug24** **Closed**		**Florence**	Consider placing 4.1.4 performance criteria into Appendix B1.2 **2004aug24** **Closed** **This AI was discussed and no final resolution. Florence agreed to close AI-125 with further action** 2003Apr05 Initial AI
127	**Status:** **2004aug25** **Completed by Motion**		**Neis** **Havens** **Chang**	Divorce Core Performance Testing from Operability Testing **2004aug25** **Havens presented several changes to Sections 3 and 4. Two new sections were added 3.4.3.3 and 4.4.3.3** 2003Apr05 Initial AI
129	**Status:** **2004aug24** **Complete**		**Colby**	Resolve that Appendix D is no longer referenced in standard **2004aug24** **Move Appendix D Footnote reference from Section 1.2 to Section 1.1** 2003Apr05 Initial AI
