ANS 3.5 Working Group Meeting Minutes
Salem/Hope Creek Nuclear Plant – Salem, NJ
2004 Nov 08-12

DRAFT ANS 3.5 Working Group Meeting Minutes
Approved Revision 12
Salem/Hope Creek Nuclear Power Plant

1   Next Meeting Proposed

Location: Millstone
Airport: Hartford, CT or Providence, RI
Date: TBD
     Monday 9:00am-5:00pm
     Tuesday 8:00am-5:00pm
     Wednesday 8:00am-5:00pm
     Thursday 8:00am-5:00pm
     Friday 8:00am-12:00pm

<u>2</u>   **<u>Motions</u>**

Welchel **2004Nov10** Description: Motion to accept Ginna Minutes Rev 12	Motion: **Carried** • 12 – For • 0 – Against • 00 – Abstained
Welchel **2004Nov10** Use Draft standard Rev 18 as the basis for all further considerations	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained
Havens **2004Nov10** Accept revision to Section 4.1.3.2 (4)	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained
Colby **2004Nov10** Add footnote to Section 4.4.3.3; Last sentence to refer to Appendix A	Motion: **Carried** • 12 – For • 0 – Against • 0 – Abstained
Florence **2004Nov11** New Sections Post Event Simulator Testing Replace Section 3.4.3 and add new sections 3.4.3.4 and 4.4.3.4	Motion: **Carried** • 11 – For • 0 – Against • 0 – Abstained
Koutouzis **2004Nov11** Suspend Rules and Adopt Motion without Motion (2/3 majority required)	Motion: **Carried** • 11 – For • 0 – Against • 0 – Abstained

<u>3</u>   **Action Item Activity**

141	Develop package to send to ANS Standards Administrator	Dennis Welchel

4   **Visitors**

Visitor	Date	Affiliation	Email, Phone Fax
Frank Tarselli	2004Nov8-12	PO Box 467 Berwick, PA 18603	Email: fatarselli@pplweb.com Phone: 570.542.3551 Fax: 570.542.3855
Dan Hudnut	2004Nov8-12	Constellation Energy 1503 Lake Road Ontario, NY 14519-9364	Email: dan.hudnut@constellation.com Phone: 585.771.5225 Fax: 585.771.5379
Mike Wyatt	2004Nov8-12	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:
Present	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
Present	Hal Paris	GSE Systems 8930 Stanford Blvd. Columbia, MD. 21004		Email: hal.paris@gses.com Phone: 410-772-3559 Fax: 410-772-3595
Absent	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
Proxy	Jane Neis	R.E. Ginna Nuclear Power Plant Training Center 1517 Lake Rd Ontario, NY 14519	Dan Hudnut	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 2010

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	142								

6.2   Action Items

No.	Status	Date	Assigned To:	Work Assignment
120			**Dennis**	Formalize a process for the industry to request a clarification and distribute through USUG **2003Apr05** **Initial AI**
135			**Neis**	Mail PINS Form to ANS Headquarters **2004aug26** **Initial AI**
136			**Dennis Koutouzis Tarselli**	Write Foreword **2004aug27** **Initial AI**
142			**Dennis Welchel**	Develop package to send to ANS Standards Administrator **2004nov11** **Initial AI**

<u>7</u>   **<u>Working Group Procedural Rules</u>**

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;
- 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.

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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 2004Nov08 (0900)**

8.1   Introduction to Salem/Hope Creek Nuclear Plant, (Havens)

Introduction and Welcome

8.2   Opening Comments (Dennis):

- Fourteenth Meeting

- Called Meeting to order

  o   Goal is to complete this standard works taking on more importance in the industry

  o   Will have a final reading on Thursday, if standard is ready

- Welcomed Visitors

  o   Dan Hudnut – Ginna – J. Neis got a promotion and will not be participating in working group.

  o   Frank Tarselli – MANTG Simulator Chair

8.3   Roll Call

Absent Members:

Welchel
Colby – Arrived on Wednesday
Felker - Arrived on Wednesday
Neis - Proxy
Cox - Proxy

8.4   Day 1 Consensus Level

10 Voting members

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

8.5   Agenda Review (Dennis)

8.6   Review of Meeting minutes Dated 2003Oct27

- With the significant number of absent members, the Ginna minutes will be read at a later date.

8.7   AI-134 (McCullough)

Presented a proposed Appendix E, Recommended Minimum Periodicity for Section 4. Testing Requirements for discussion. Concern expressed on use of IC as periodicity and potential confusion with IC- initial condition. Changed IC to NC to indicate clearly new construction. Corrected section number references. Wyatt supports the concept of having such a table but is not sure the right periodicity is shown on the current table. Vick feels this is an excellent idea that corrects a short coming in the regulation, but this issue is more appropriate for the next revision. Florence concurs that this is too much to try to work it into the current revision in this week. Shelly would have to perform some review work before approving such a table; the question is time. Wyatt supports pursuing this issue this week to provide guidance that we agree too and not letting the regulator set it for us. Chang feels the standard is not clear in this area and the standard needs to be clarified. Havens is not for pursuing this issue at this time. Dennis feels more work is needed but whether it should be now or later is the question. Kozak is in favor of pursuing it this week. Paris feels this is simple and should be pursued this week. Koutouzis wants to pursue it now or clarify the standard. The proposal was tabled. The working group is too perform their reviews of the proposed appendix and discussion will continue when we get to new business.

Proposed Appendix E:

Appendix E

(This Appendix is not a part of American National Standard for Nuclear Power Plant Simulators for Use in Operator Training and Examination, ANSI/ANS-3.5-2005, but is included for information purposes only.)

Recommended Minimum Periodicity for Section 4. Testing Requirements

**Table E1
Recommended Testing Frequency**

Section	Description	Periodicity
4.1.1	Real Time and Repeatability	NC, A
4.1.2	Limits of Simulation	NC, A
4.1.3.1	Steady-State Operation	NC, A
4.1.3.2	Normal Evolutions	NC, B
4.1.4	Malfunctions	NC
4.2.1	Physical Fidelity and Human Factors	NC, B
4.2.2	Systems to be Simulated and the Degree of Completeness	NC
4.3	Simulator Instructor Station Capabilities	NC
4.4.1	Simulator Verification Testing	SD
4.4.2	Simulator Validation Testing	SD
4.4.3.1	Simulator Operability Testing	SD
4.4.3.2	Simulator Scenario-Based Testing	SD
4.4.3.3	Core Performance Testing	SD

NC - New Simulator Construction
A – Annual (Once per year on a calendar basis)
B – Biennial (Once every two years on a calendar basis)
SD – Section Defined (Periodicity defined in the referenced section of the standard)

8.8   AI-140 (Havens)

Proposing technical editing change to 4.1.3.2.(4) to have it read the same as 4.1.4(2).

Current Rev 17a wording:

4.1.3.2   Normal Evolutions

(4)   Require that the observable changes in simulated parameters correspond in direction to the changes expected from actual or best estimate response of the reference unit.

Proposed Wording:

(4)   Required that any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit.

Due to potential variance in wording from Rev 17a and the "latest" version distributed by Colby today, this issue was tabled until Colby could be consulted on the wording variance.

8.9   AI-80 (Florence)

Ginna minutes indicate that this action item is closed, yet the body of the minutes indicate the action was reactivated by the chair. Reviewed the action item. Florence recounted the discussion on this item at Ginna, and the working group concurred that this item is closed. No further action required.

8.10   AI-133 (Hudnut)

Presented the review and consolidation effort performed by Neis on sections 3.4.3.2 and 4.4.3.2.

Proposed new words:

3.4.3.2 Simulator Scenario-Based Testing

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

A training and examination scenario validation process is a methodology that may be used to support the conduct of this testing.

4.4.3.2 Simulator Scenario-Based Testing.

The intent of scenario based testing is to ensure that the simulator response during training or examination scenarios reproduces the expected reference unit response to assure that operators do not receive negative training.

It shall be demonstrated that the simulator response to training and examination scenarios reproduces the expected plant response based on actual or predicted reference unit data without significant performance discrepancies or deviations from the approved scenario sequence

It shall be demonstrated that the simulator response is capable of satisfying the predetermined learning or examination objectives.

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.

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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;
      assertion that no unexpected alarms and automatic actions occurred.

Vick feels this rewording potentially changes the intent of previously approved wording for these sections that have already been heavily debated. McCullough discussed testing the simulator versus testing the scenario and how this is reflected in the current wording. The working group consensus was that the wording changes result in an intent change to the standard, and further discussion would be recovering ground already discussed and approved.

It was recommended that this item be closed with no further discussion. The chair closed the item without objection from the working group.

8.11   AI-20 (McCullough)

Went through power point of AEP experience with DCS controls for fossil unit presented to Sim-World. McCullough discussed various aspects of the project that resulted in simulation difficulties and how AEP had to deal with these difficulties related to tuning the DCS and synchronization of processors. Related how this project would affect a two unit site with one simulator and how this would be dealt with when training the operators, especially in the area of Human Machine Interface (HMI). Source code from DCS vendors is very good and well documented, but most consider it proprietary information and will not release it. Florence questioned what part/portions of the standard need to be modified for DCS simulation. Paris pointed out that this is potentially more of a training issue in that people don't understand the magnitude of the changes when shifting to DCS systems. Does the standard need to be changed to specifically address simulators moving into DCS simulation? No! The standard is written to ensure fidelity and training for licensed operators. Incorporating DCS into simulation will still require the simulator to meet the requirements as stated in the standard for simulation. Discussion was held on the difference between simulation, stimulation, and emulation.

The standard is applicable to Distributed Control Systems (DCS). Problems occurring are in the interface between site and vendor(s) and within project management. The standard is adequate to cover incorporation of DCS into simulators used for operator training. Working group consensus is that this item should be closed. The chair agreed to close the item.

8.12   AI-132 (Wyatt)

Opened discussion on the background of the item and previewed a proposed change to section 4.1.4. Basically, calls for invoking V&V testing of malfunctions specifically when new malfunctions are generated, and subsequently test them via SBT when used for training. Working group to review proposed wording change tonight and be ready for detailed discussion tomorrow.

8.13   **Adjourned 2004Nov8 at 1700**

9   **Tuesday 2004Nov09 (Day 2 8:00am)**

9.1   Day 2 Consensus Level

11 Voting members

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

6 Majority

9.2   AI-132(Wyatt) Continued

Continued the discussion on the background of the item and previewed a proposed change to section 4.1.4.

The same criteria multiple times in the standard.

Koutouzis – Modifications and new malfunctions are tested independently, and then tested with SBT before being used in training.

Existing malfunctions are tested via SBT and are not under some sort of continuing testing program.

Proposed new language for 4.1.4. Deletes the criteria list in 4.1.4 and reference instead the criteria in 4.4.3.2, SBT criteria.

Shelly – The language seems to imply that new malfunction must be V&V'd, than SBT'd before being used in training.

Concerns centered around whether or not the new language is new criteria that malfunctions have to be SBT'd before being used in training.

More debate centered on whether or not the draft standard requires that all scenarios must be tested before using used in training. Some members are unsure whether the draft requires (implies) ALL scenarios be tested. The draft standard does not explicitly require that all scenarios be tested prior to use.

Havens – Section 4.4.3.2 implies that SBT be conducted for scenarios before use.

Vick – The new language expands the testing and scope of malfunctions.

Florence – new malfunctions a re V&V'd and then put on the shelf. No periodic testing required. Malfunction testing will be covered in SBT.

Dennis – Malfunctions may be required to be tested based on ramifications of other changes and mods.

McCullough – Leave a lone for now. The new language does not cover when and where and opens it up for more ambiguities.

Florence – The next standard revision should address new simulators and simulator maintenance separately.

Wyatt – Summary Not achievable in the current standard. Should be taken up during the next session. No further discussion.

AI-132 will be deferred to the next standard.

9.3   Officers:

Officer Reports:
- Dennis
    - N/A
- Florence:
    - N/A
- Welchel:
    - N/A
- Shelly:
    - N/A
- Vick:
    - N/A
- Colby:
    - N/A

9.4   McCullough noted that the latest revision

The majority of the afternoon, Welchel and Shelly compared draft standard revision
"ans35rev17August04rev3.doc" against the motions as recorded in the minutes for Ginna, DS&S and Kennett
Square... in that order.

The changes were reviewed by the members and the majority of the discussion centered on the Motion to modify 3.1.3 and 4.1.3.

Member reviewed the various changes to Draft Standard No.18.

Members will review the Draft Standard 18 and discussion will continue on Wednesday.

9.5   **Adjourned 2004Nov09 at 1700**

10   **Wednesday 2004Nov10 (Day 3 8:00am)**

10.1   Day 3 Consensus Level

> 12 Voting members
>
> 9 members for consensus (75% Rule of the Chair)
>
> 6 Majority

10.2   Motion to accept Ginna Minutes Rev 12

> **Motion: Carried**
>
> **Vote:**
>
>> **For: 12**
>> **Against: 0**
>> **Abstained: 0**

10.3   Draft Standard Rev. 18 Discussion

Havens – Concerns that the language in the Draft Standard used at Ginna for sections 3.1.4 and 4.1.4 was incorrect.

The committee agreed that Draft Standard rev 18 will be the basis for all further considerations.

10.4 **Motion (Welchel)**

Use Draft Standard Rev 18 as the basis for all further considerations

Motion Second

The WG decided to make additional modifications to the standard.

Motion was withdrawn

10.5 **Motion (Welchel)**

Use Draft Standard Rev 18 as the basis for all further considerations.

Reason: To obtain agreement that modifications to draft standard ans35rev17August04rev3.doc, generating draft standard rev 18, based on the working group minutes from Kennett Square, DS&S and Ginna, will be the basis for all further modification to the draft standard. Members started with draft standard ans35rev17August04rev3.doc… reviewed and compared it to every motion in the approved minutes in Kennett Square, DS&S and Ginna to ensure the new draft standard rev. 18 aligned with the minutes. Previous technical edits were taken into consideration and the draft standard rev. 18 does not in all cases agree with the minutes concerning technical edits.

Vote:

    For: 12
    Against: 0
    Abstained: 0

10.6   Draft Standard rev 19 is the basis for further review

10.7   AI-139 – Individual review of member action Items

Members were polled to determine if they had any outstanding issues with their action items included in the draft standard.

Additional review is still required to clean up the draft standard

- o Extra notes (comments)
- o Section numbering
- o Semi-colon usage in lists
- o One final tech editing review (gray text from Kennett Square)
- o

AI-139 is closed

10.8   AI-140 (Havens)

Havens reviewed the changes to Section 4.1.3.2 and how a previous modification to bullet 4 in Section 4.1.3.2 was not brought forward during the review and alignment creating draft standard 18. Section 4.1.3.2 was modified during AI-127 (Core performance testing).

Draft Standard Rev 18	Proposed Revision for Section 4.1.3.2 This mods (4) only
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	**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

Comment [w1]: 2004Aug23 minutes - verified incorporation of AI-127 (Havens)

Comment [w7]: 2004Aug23 minutes - verified incorporation of AI-127 (Havens)

Comment [BC2]: Approved change from the August 26, 04 meeting. Refer to AI #127. The reason for this change is that these words were removed from 3.1.3.2 (5), also removed here to remove from normal operation words removed from 3.1.3.2 (5), also removed here to remove from normal operation this bullet is a test requirement and are now incorporated in new sections 3.4.3.3 and 4.4.3.3 for Core Performance testing. This will better define this item. This change will affect 8 different sections. – 3.1.3.2; 3.1.5; 3.4.3; 3.4.3.1; 3.4.3.3; 4.1.3.2; 4.1.5; 4.4.3.1; and 4.4.3.3

Comment [BC8]: Approved change from the August 26, 04 meeting. Refer to AI #127. The reason for this change is that these words were removed from 3.1.3.2 (5), also removed here to ...

Comment [BC3]: 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 ...

Comment [w4]: 2004Apr05 minutes - verified change based on AI-117 (Havens)

Comment [BC5]: 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 [BC9]: 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 ...

Comment [w10]: 2004Apr05 minutes - verified change based on AI-117 (Havens)

Comment [BC11]: 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.

following acceptance criteria:	acceptance criteria:	
(1) Be the same as the reference unit startup test procedure 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.	(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.	(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 changes expected for a best estimate of normal unit operation.	**(4) Require that any observable change in simulated parameters corresponds in direction to the change expected from actual or best estimate response of the reference unit.**	**Comment [BC6]:** Approve change of changing the wording in item (4) from the Oct 27-31-03 meeting. The reason to add clarity to the acceptance critieria
(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.	(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.	(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.	

Motion:

Accept the revision to Section 4.1.3.2 as defined in the table above.

Vote:

For: 12
Against: 0
Abstained: 0

Reason: Includes already agreed on language that was lost during AI-127.

AI-140 is Closed

10.9   Additonal Draft Standard Rev 18 clean up was performed

- Removed Section 4.1.5 number… no Section body (was deleted)

- 4.4.3.1 – Moved the reminder (to keep footnote 10) in the body text to a comment

10.10   **AI-124 (Florence) Post Event testing**

Florence lead the discussion on Simulator Post Event testing Section 3.4.3.4 and 4.4.3.4

Concerns that this add significant work burden if required "shall". This activity need to be bounded. The group

Poll was taken to determine where the members stand. Member comments:

- Make Post Event testing a "should"
- Too much to do in a short period… committee is too deliberate
- Very worth while
- Post Event testing is a lot of bang for the buck

Havens – consider 5.3.1… possible conflict

Several members will consider drafting a Post Event Section for presentation

AI-124 tabled until tomorrow morning.

10.11   AI-141 (Tarselli) Alternative Testing

Tarselli – Alternative testing is too broad of an issue to be covered in the standard.

Recommendation is to defer AI-141 to the next standard session.

WG agreed to defer AI-141

10.12   AI-25 (Dennis) Process Guidelines

Dennis gave presentation

- Millstone Recovery with a procedures emphasis
-

Hudnut – Presented INPO 87-016 Simulator Configuration management (Koutouzis – 87-016 has probably been rolled into 90-012)

- Suggest adding a item (5) to Section 5. Simulator Configuration management

    Comments that the committee has avoided using the word "procedure"

    The discussion centered on the use of the term procedure

    Background on why this AI was brought to the table – Dennis brought this to the table based on industry problems with a lack of simulator procedure and documentation.

    Poll comments:

    - Procedures to string
    - Change the word "procedure" to "process"

- New item already covered in other statements
- Simulator already have processes that cover this

Support appears to be limited…

The standard today does not state procedures are required

AI-25 is closed

10.13   AI-20 (Dennis) Foreword

Dennis presented a new Foreword that included:

- Highlights that the industry has matured; Units remain on line longer; Operational experience is more limited
- A brief revision history
- Less real unit operational experience opportunities, therefore simulator experience is substitute
- Summary of major contributors
- Major changes to standard identified
- WG pedigree

Additional language should be added that address how we go where we are today including:

- Surveys
- conference feedback
- Emails
- visitors to WG meetings
- clarification
- strengthen the training experience (75 years of WG experience)

Shelly – Referred the committee to the styles manual definition and purpose of a Foreword. The Foreword should stand alone and inform the reader of the contents of the document. The Foreword should allow the reader to determine if the document requires additional reading.

Additional modifications will be completed off line and presented to the committee at a later date

10.14 AI-134 Appendix E (McCullough) Recommended minimum Periodicity for Section 4 (Get Electronic Copy)

McCullough presented a table outlining the minimum periodicity for each Section 4

Discussions included SBT and whether or not malfunctions are required to be tested using SBT. General agreement was that new malfunctions are subject to V&V, but are not subject to SBT.

After a lengthy discussion, McCullough recommended AI-134 be deferred to the next standard.

AI-134 is deferred

10.15 Millstone Inspection Report (Chang)

Chang presented a summary of the Millstone inspection:

- MP2 – 10/04/2004
- MP3 – 10/25/2004

10.16 AI-138 (Colby) Revision Tracking

Draft Standard rev 19 will be used as the basis and the new draft standard will be rev 19.

Colby lead the review of draft standard rev 19

List of reviewed items:

- Section 1 - Footnote
- Section 1.4 - Capitalization of the word "Section" (Colby will change "Section" to "section" as appropriate)
- Section 3.2.1.3 – operational to

- Section 3.4.3.2
- Section 4.1.3.2
- Section 4.1.5
- Section 4.2.1.1 – tech edit change "which" to "that"
- Section 4.2.1.2 – no change
- Section 4.4.1 – no change
- Section 4.4.3.1 – added footnote for performance test documentation (per minutes)
- Section 4.4.3.3 - – added footnote for performance test documentation (Motion Approved)
- Appendix – Align Appendix Heading date agrees with standard approval date

Questions were raised as to what the WG will need to send to the parent committee:
What was done
Why the changes were made
A single page draft standard (no comments)
Double column 1998/2005
Triple column 1998/2005/reason

AI-138 is complete

10.17 Motion

Add footnote to Section 4.4.3.3 last sentence to refer to Appendix A.

Footnote: Appendix A provides examples of acceptable simulator performance test documentation

Motion:

> **For: 12**
> **Against: 0**
> **Abstained: 0**

Reason: Consistency with other sections that refer to Appendix A - Guideline for Documentation of Simulator Design and Test Performance

10.18   **Adjourned 2004Nov10 at 1715**

11   **Thursday 2004Nov11 (Day 4 8:00am)**

11.1   Day 4 Consensus Level

11 Voting members

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

6 Majority

11.2   AI-124 (Florence) Post Event Testing – Continued

Florence continued the discussion of Post Event Testing

Florence presented the new Sections 3.4.3.4 and 4.4.3.4 as developed by Florence, Welchel, Hudnut and Tarselli

Over break, several members drafted another version for consideration

The term event was a major point of discussion

The WG developed a consensus version

Motion:

   Accept the following language for Post Event Simulator Testing

---

Section 3.4.3 is replaced in it's entirety
Sections 3.4.3.4 and 4.4.3.4 are new

3.4.3 Simulator Performance Testing.

Simulator performance testing comprises operability testing, scenario-based testing, reactor core performance testing and post event simulator testing. Simulator performance testing shall be performed in a fully integrated mode of operation.

3.4.3.4 Post Event Simulator Testing.

Certain reference unit events provide the opportunity to acquire relevant reference unit performance data. For such data, Post Event Simulator Testing should be conducted to confirm that the simulator is capable of reproducing the response of relevant reference unit parameters within the scope of simulation.

4.4.3.4 Post Event Simulator Testing.

Post Event Simulator Testing should be conducted when a reference unit event generates relevant data for evaluating simulator performance. Such testing shall:

(1) consider the sequence-of-events, operator actions, and be performed in accordance with reference unit procedures;

(2) demonstrate that post event simulator testing is conducted and relevant data compared to ensure that the simulator is capable of reproducing the response of relevant reference unit parameters within the scope of simulation.

The motion was withdrawn to fix capitalization issues

Motion:

    Accept the following language for Post Event Simulator Testing

Section 3.4.3 is replaced in it's entirety
Sections 3.4.3.4 and 4.4.3.4 are new

3.4.3 Simulator Performance Testing.

Simulator performance testing comprises operability testing, scenario-based testing, reactor core performance testing and post event simulator testing. Simulator performance testing shall be performed in a fully integrated mode of operation.

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4.4.3.4 Post Event Simulator Testing.

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    (1) consider the sequence-of-events, operator actions, and be performed in accordance with reference unit procedures;

    (2) demonstrate that post event simulator testing is conducted and relevant data compared to ensure that the simulator is capable of reproducing the response of relevant reference unit parameters within the scope of simulation.

Vote:

> **For: 11**
> **Against: 0**
> **Abstained: 0**

Reason: Promote a consistent behavior for Sim facilities to utilize relevant unit event data to ensure simulator operational fidelity

11.3   AI-137 (Florence) Industry Communication

Florence recommends deferring this to the next meeting based on higher priority issues

11.4   AI-135 (Dennis) Mail PINS form to ANS headquarters

PINS form was sent to ANS headquarters. Dennis was notified that the incorrect form was used.

New PINS form

		Date:	*8/26/2004*

PINS: PROJECT INITIATION NOTIFICATION SYSTEM FORM *(Rev. 1/2003)*

*NOTE: Adoptions of international standards require compliance with ANSI's Sales & Exploitation Policy.

1. Designation of Proposed Standard:	ANS-3.5
2. Title of Standard:	Nuclear Power Plant Simulators for Use in Operator Training and Examination
3. Project Intent: (Check the applicable box below)	**Supersedes or Affects:** (Specify designation of approved ANSI standard(s) or international standard(s)* affected or superseded.)

Create new standard		
*Adopt identical international standard (see Expedited Procedures, Section 1.2.9.2, Annex H: IDT and Annex I)		
*Adopt modified international standard (see Requirements Associated, Section 1.2.9.1, Annex H: MOD and Annex I)		
AND this adoption revises this current ANS		
Revise current standard		
Revise and Redesignate current standard	x	To supercede ANSI/ANS-3.5-1998
Revise, Redesignate and Consolidate current standard		
Revise and Partition current standard		
Reaffirm current standard		
Reaffirm and Redesignate current standard		
Supplement to a current standard		
Withdraw current standard		
4. This standard contains excerpted text from an **international standard, but is not an ISO or** **IEC adoption.**		Check here if this standard includes excerpted text from an ISO or IEC standards but is not an identical or modified adoption of an international standard.

5. **Provide an explanation of the need for the project:** (500 character maximum including spaces)	Current standard is actively endorsed by Nuclear Regulatory Commission and requires review and update to meet industry expectations.				
6. **Identify the stakeholders** (e.g., telecom, consumer, medical, environmental, etc.) **likely to be directly impacted by the standard:**	Domestic and International users and owners of Nuclear Power Plant Simulators				
7. **Description of Contents of Standard:** (Provide a one paragraph description, not to exceed 500 characters.)	This standard establishes the functional requirements for full-scope nuclear power plant control room simulators for use in operator training and examination. The Standard also establishes criteria for the scope of simulation, performance, and functional capabilities of simulators. This standard does not address simulators for test, mobile, and research reactors, or for reactors not subject to U.S. Nuclear Regulatory Commission licensing. This standard does not establish criteria for the use of simulators in training programs.				
8. **Canvass Developers: (**This request must include a statement of how to obtain a copy of the canvass list.)		Check here to request Canvass Initiation Announcement.			
9. **Obtain a Copy of the Canvass List:** (Specify name of contact or a URL address.)					
10. **Consumer Product or Service:**		Check here if standard covers Consumer or Service Product			
11. **Units of Measurement Used:** (check one)		Metric	X	US	Both	NA
12. **Accredited Standards Developer Acronym:**	ANS				
13. **Submitter:**	Name:	Patricia Schroeder			

(Specify submitter's name and complete contact information, address, phone, email, etc.)	Title:	Standards Administrator
	Organization:	American Nuclear Society
	Address:	555 North Kensington Avenue
	City, ST, Zip:	La Grange Park, IL 60526
	Phone:	+1708 589 8269
	Fax:	+1708 352 6464
	Email:	pschroeder@ans.org

The section below is not an official part of the ANSI PINS form. It was designed for ANS Standards Committee purposes only. It is to provide more background information about the standard. It is not required that this section be approved, only the ANSI PINS form located above.

Project #: ANS- 3.5

1. Purpose:

Revise existing standard to incorporate new technologies since last edition and to incorporate user feedback and clarification.

2. Documentation of Need:

Current standard is actively endorsed by Nuclear Regulatory Commission and requires review and update to meet industry expectations.

3. Likely Users:

Domestic and International users and owners of Nuclear Power Plant Simulators

4. Benefit to Users:

Provide Nuclear Power Plant Simulation Facilities guidance regarding maintenance of Nuclear Power Plant Simulators. Provide consistency among the users of Power Plant Simulators.

5. Consensus Body:

Nuclear Facility Standards Committee

6. Subcommittee under which it is assigned:

ANS-21

7. Interests Represented in Development of Standard:

Utilities, Vendors, Individuals, and Regulators, Electric Power Suppliers and Generators

8. Coordination and Interfaces (Liaison):

None

9. Related Standards or References, or Both:

10 CFR 55.46, Regulatory Guide 1.149 Revision 3,

10. Project Initiation Date:

November 4, 1998

11. Working Group Chair:

Timothy Dennis

11.5   AI-xxx (Koutouzis) Foreword

Koutouzis lead the discussion of the revised Foreword

Key Points:

1. Simulator are in maintenance mode

2. History of the Standard

3. Less operational experience as units performance gets better

4. Accredited Programs and Regulation impact on Simulator Testing

5. Technical editing of the Standard

6. The Standards expectations

7. Summary of member experiences

8. List of WG members and key contributors

Members developed a consensus Foreword and reviewed the list of members and contributors.

Motion

   To suspend the rules to adopt the Foreword by Motion

Vote (Supermajority requires 2/3):

   For: 11
   Against: 0
   Abstained: 0

The Foreword was adopted without motion and will be placed in the draft standard for the final reading.

(This Foreword is not a part of American National Standard for Nuclear Power Plant Simulators for Use in Operator Training and Examination, ANSI/ANS-3.5-2005, but is included for information purposes only.)

ANS-3.5-2005 Foreword
Draft

The nuclear power industry is currently in a mature phase of operation, with encouraging successes in operating license extensions. In addition to life extension activity, there is renewed interest in new construction of nuclear power plants. This fifth revision of the 1979 original standard continues in the philosophy of further addressing issues related to maintaining simulators throughout the life of commercial nuclear power plants. These issues include extended plant and simulator life cycles; elements to support evolving operator licensing and crew performance expectations, and potential new power plant and simulator construction.

The first ANS-3.5 Standard published in January 1979 provided essential requirements for the acquisition of full-scope simulators to support operator training programs. The second ANS-3.5 Standard published in April 1981 further delineated specification requirements. Improvements in testing methods and overall consistency were subsequently included in the third ANS-3.5 Standard published in October 1985. The fourth ANS-3.5 Standard published in March 1993 introduced a new testing methodology and processes that effectively

Comment [bjc12]: Approved change from March 2005 meeting. Action item #97. (Also refer to Action Item 94) Add the words "and Examination" to be consistent with the approved title for the ANS 3.5 Standard.

Comment [bjc13]: Approved change from March,2005 meeting. Action item #94. Change the Standard date from 1998 to 2003 to be consistent with the current Standard revision.

integrated training processes with simulator testing and configuration management processes. The fifth ANS-3.5 Standard published in April 1998 further refined the integration of the training scenario validation process with the simulator testing process.

As the industry matured and performance improved, plants routinely remain online throughout a fuel cycle. This provides fewer operational experience opportunities previously afforded to licensed operators. Excellent plant performance has also resulted in a more vital role for the simulator in providing operators with experience previously obtained in the actual plant. As a result, the importance of a thoroughly tested simulator in providing a high quality training tool cannot be overemphasized.

As industry performance continues to improve, accredited operator training programs become a valuable component of a comprehensive simulator test program. This standard recognizes the current synergy between the traditional simulator testing processes and training processes that may be used to compliment an overall simulator test program. This revision also recognizes recent changes in Nuclear Regulatory Commission regulations that eliminated formal simulator certification submittal requirements and allows applicants for an operator license to meet experience eligibility requirements on the reference unit simulator. The advent of increased regulator and industry oversight group scrutiny of simulators also influence this revision. The working group provided formal input to the regulatory process to facilitate consistent perspectives.

In addition to enhanced readability accomplished by professional technical editors, users of this revision will find improvements and clarifications in the performance testing methodology, new sections addressing simulator core performance testing and post event simulator testing, as well as other important guidance required to ensure accurate simulation for operator training.

When a simulator is used for operator training and examination, it is expected to meet the requirements set forth in this standard.

Acknowledgements:

This review and revision cycle was fortunate to receive substantial support from a diverse and dedicated group of nuclear simulator experienced professionals representing many utilities and interested parties. A wide range of utility, independent and industry oversight organization participation, including individuals with significant military and commercial reactor experience, were represented on this working group. Input to the development of the standard was received through various means, such as numerous surveys with greater than 95 percent industry participation as well as feedback from training and simulator associations. Working Group meetings were also attended and supported regularly by non-member participants. All aspects of power reactor and simulator design, construction and operation in addition to extensive operator training and evaluation experience was available throughout this review cycle. The average individual experience represented at each working group meeting was approximately 26 years of diverse nuclear industry experience

including 20 years of simulation related experience, and approximately 75 collective years of operator training experience. Working Group continuity was preserved by members with a range of 2 to 24 years of working group participation experience. The significant experience available and dedicated participation was effectively used to prioritize and address each important issue.

This standard was prepared by Working Group 3.5 of the Standards Committee of the American Nuclear Society, which had the following membership:

T. Dennis, Chair, Individual, Consultant
J. B. Florence, Vice Chair, Nebraska Public Power District, Cooper
K. P. Welchel, Secretary, Duke Energy, Oconee
F. J. Colby, Editor, CAE Inc.
W. M. Shelly, Style Editor, Entergy
L. Vick, Parliamentarian, U. S. Nuclear Regulatory Commission
S. K. Chang, Dominion, Millstone
K. Cox, Exelon, Dresden
R. A. Felker, Western Services Corporation
O. H. Havens Jr., PSEG Power LLC, Salem, Hope Creek
J. D. Koutouzis, Institute of Nuclear Power Operations
A. A. Kozak, Dominion, North Anna
G. S. McCullough, American Electric Power, D. C. Cook
J. B. Neis, Constellation, Ginna
H. O. Paris, GSE Systems Inc.

Certain highly technically qualified individuals provided additional expert assistance and advice to the working group during the development of this standard. They were:

T. R. Byron, Institute of Nuclear Power Operations
J. J. Cataudella, former Chair, Dominion
J. F. Collins, U. S. Nuclear Regulatory Commission
M. Fedele, CAE Inc. (Aviation)

D. Noe, GSE Systems, Inc.
B. Panfil, First Energy, Perry
F. Tarselli, PPL, Susquehanna LLC
D. Trimble, U. S. Nuclear Regulatory Commission
M. Wyatt, Exelon

List of ANS 21 Members:

ANS Standards Administrator list

List of NFSC Members:

ANS Standards Administrator list

Several nuclear industry training and simulator associations provided additional expert assistance and advice to the working group during the development of this standard. They were:

Mid Atlantic Nuclear Training Group (MANTG), Simulator Subcommittee
Utility Simulator Users Group (USUG)

11.6 New Action Item AI-142 Delivery to ANS

Letter to ANS Standards Administrator

Single Column Print

Electronic single column without tracking and comments

Electronic three column with 1998, draft revision, and comments

All approved meeting minutes

11.7   **Final Reading of the Draft Standard**

Motion

    Accept the hard Copy Draft Revision 21 that was printed from file: "021.ans35-Salem. nov-single page.doc"

Draft standard file **021.ans35-Salem. nov-single page.doc** was read in it's entirety. Several modifications were noted that need to be resolved. An amended motion to complete the modifications was raised.

Amended Motion:

    During the final read, several minor editing functions occurred. 022.ans35Rev22 Amended Motion.doc contains the comments from the final read from file 021.ans35-Salem. nov-single page.doc.

The amended motion was accepted by the proposer and gain unanimous acclamation by the working group.

Motion:

    Accept the electronic copy Draft Revision 22 named : 022.ans35Rev22 Amended Motion.doc as the final draft of the 2005 edition of the ANS 3.5 Standard.

Vote (10 members present, Quorum 8, Consensus 8):

    For: 10
    Against: 0
    Abstained: 0

Roll Call Vote:

For	Against	Abstained
Florence		
Kozak		
Dennis		
Havens		
Chang		
Vick		
Shelly		
Felker		
Colby		
Welchel		

After approval, the secretary made the following modifications to the approved standard document:

Renamed **022.ans35Rev22 Amended Motion.doc** to **022.Approved_ 2003 ANS 3.5 Draft Standard_2004nov11.doc. All future Technical Edits to the standard should use this filename, increment the revision indicator in the filename and update the revision in the Scope and Background page.**

On the **Scope and Background** page, in the header, changed DRAFT to APPROVED and changed **Rev 21** to **Rev22**

11.8   **Adjourned 2004Nov11 at 1945**

12   **Appendix**

12.1

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

13   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"

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
132	Status: **2004nov09** **Deferred to the next** **standard**		**Wyatt**	Review Section 4.1.4 – Malfunction testing **2004nov09** **Deferred to the next standard revision** 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.
134	Status: **2004nov08** **Deferred to the next** **standard**		**McCullough** **Felker** **Florence**	Minimum Testing Periodicity Table **2004nov10** **After lengthy discussion, deferred to the next standard** 2004nov8 Presented proposed Appendix E 2004aug26 Initial AI

137	Status: Deferred 2004nov11		Florence Koutouzis Shelly	Establish better (routine) communication on ANS WG makeup and activities Target audience – Plant management **2004nov11** **Deferred to the next meeting** 2004aug27 Initial AI
141	Status: Deferred 2004nov10		Tarselli	Review incorporation of alternative testing methods into Section 3.4.3.2. **2004nov10** **Due to magnitude of subject matter, Tarselli recommended Alternative Testing be deferred to next standard** 2004aug27 Initial AI

14   **Closed 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. Closed by vote and e-mail to Standards Admin.

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.

No.	Status	Date	Assigned To:	Work Assignment
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;
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
20	**Status:** **2004Nov8** **Complete** **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; **2004Nov8** **Consensus from working group to close item based on discussions during this meeting.** **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)

No.	Status	Date	Assigned To:	Work Assignment
				2001Aug09 Paris Presentation – Distributed Control Systems scope needs to be considered in the standard (Hal will e-mail his presentation to Butch).
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;
25	Status 2004nov10 Closed		Dennis Neis	Process Guidelines (Mods and Testing) ;Institutionalizing Procedures 2004nov10

No.	Status	Date	Assigned To:	Work Assignment
				Dennis and Hudnut gave presentation on adding Item (5) to Section 5. AI-25 is Closed. No action. 2004aug24 Reactivated Try to complete during this revision 2002apr24 Dennis Gave presentation on Millstone experience Defer AI-25 to 2008 2001Apr05 Dennis Deferred
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**

No.	Status	Date	Assigned To:	Work Assignment
				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

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 her 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 foreword 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**
80	Status 2004nov08 Complete		Florence	2008 Copy and Paste RG 1.149 Rev 3 Section 1.5 into the 2008 Standard. (Software V&V) **2004nov8** **Florence** Item discussed and concluded no change to the standard should occur. This item was closed. **2004aug25** **Florence** **Reactivated and will be considered at this meeting.**

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		**PWR** **McCullough -** **Lead** **Neis** **Chang** **Kozak** **Welchel** **BWR** **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**

No.	Status	Date	Assigned To:	Work Assignment
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

No.	Status	Date	Assigned To:	Work Assignment
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

No.	Status	Date	Assigned To:	Work Assignment
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

No.	Status	Date	Assigned To:	Work Assignment
122	**Status:** **2004aug26** **Complete**		**Vick**	Simulator Performance testing Item Experience **2004aug26** **Presentation to WG** 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
124	**Status:** **Complete** **2004nov11**		**Florence** **Tarselli** **Welchel**	Evaluate plant transient and for simulator performance (Post Event Data) Consider Reference unit post event guidance to evaluate simulator performance **2004nov11** **The WG added Post Event Simulator testing Sections 3.4.3.4 and 4.4.3.4** 2004aug24 Florence will lead development of additional language for "Post Event Processing". 2003Apr05 Initial AI

No.	Status	Date	Assigned To:	Work Assignment
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
128	**Status:** **Complete** **2004nov11**		**Shelly**	Single column Version of Standard ready for final reading **2004nov11** **Complete and used for final reading** 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

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

No.	Status	Date	Assigned To:	Work Assignment
133	**Status:** **2004nov08** **Complete**		**Neis** **Havens** **Felker-** **Presenter**	Review 3.4.3.2 and 4.4.3.2 for redundancy and consolidation **2004nov8** **Hudnut** **Reviewed proposed wording changes. Intent change determined. Closed without further action.** **2004aug27** **Review Section 4.4.3.2** **2004aug27** **Section 3.4.3.2 was modified by Motion** **2004aug26** **Initial AI**
138	**2004nov10** **Completed**		**Colby**	Revision Tracking • Kennet Square (2003oct27) – Rev 14b • DS&S (2004apr05) – Rev 16b • Post DS&S – rev 15 (Rev 14 Tech Editing) • Ginna (2004aug23) – Rev 17 **2004nov10** **Reviewed draft standard rev 19** 2004aug27 Initial AI

No.	Status	Date	Assigned To:	Work Assignment
139	**Status:** **Complete** **2004nov11**		**All** **Members**	Members to review their action items to ensure correct incorporation into the standard **2004Nov11** **Complete** 2004aug27 Initial AI
140	**2004nov10** **Complete**		**Havens**	Review Section 4.1.3.2 needs tech editing consideration due to Kennett Square modification **2004nov10** **Replaced Item (4) in Section 4.1.2.3** 2004nov8 Presented potential change to standard 2004aug27 Initial AI