ANS 3.5 Working Group Meeting Minutes

CAE
Montreal, Canada
2001 August 6 - 10

1 Index

1 INDEX 2

2 NEXT MEETING 5

3 MOTIONS 6

4 ACTION ITEM ACTIVITY 7

5 VISITORS 8

6 ROLL CALL 9

7 ACTION ITEM LIST 11

7.1 ACTION ITEM QUICK-LOOK TABLE 11
7.2 ACTION ITEMS 11

8 WORKING GROUP PROCEDURAL RULES 20

8.1 RULES OF THE CHAIR 20
8.2 RULES ENACTED BY THE WORKING GROUP 20

9 8. MONDAY 2001AUG06 (DAY 1) 21

9.1 OPENING COMMENTS (TIM DENNIS): 21
9.2 ROLL CALL 21

10 REPORTS 22

10.1 INPO 22
10.1.1 Terry Byron 22
10.1.2 MANTG – Mid Atlantic 22
10.1.3 NFSC 23
10.1.4 EXITECH 24
10.1.5 GSE 24
10.1.6 CAE 24

10.1.7 North Anna and Surry *24*
10.1.8 Ginna *24*
10.1.9 Entergy Nuclear South *25*
10.1.10 Excelon *25*
10.1.11 Millstone *25*
10.1.12 Oconee *25*
10.1.13 Cooper *25*
10.1.14 USUG *25*
10.1.15 SCS *26*
10.1.16 DOE *26*
10.2 ADJOURNED 2001AUG06: 1630 27
10.3 TUESDAY 2001AUG07 (DAY 2) 27
10.4 OFFICERS REPORT 27
10.4.1 Styles discussions *27*
10.5 ADJOURNED 2001APR04: 1700 28
10.6 8. WEDNESDAY 2001AUG08 (DAY 3) 28
10.6.1 Presentation *28*
10.7 ADJOURNED 2001APR05: 1730 29
10.8 THURSDAY 2001AUG09 (DAY 4) 29
10.9 PRESENTATIONS 29
10.9.1 Commercial flight regulation presentation by Mike Fedele *29*
10.9.2 Action Item #13 by Bob Felker *29*
10.10 DISCUSSED PRIORITIZING THE ACTION ITEM LIST 29
10.11 ADJOURNED 2001AUG09: 1200 29

11 ACTION ITEMS 30

11.1 AI-67 (FLORENCE) - CLARIFICATION RESPONSE – SCENARIO-BASED TESTING 30
11.1.1 Reference: Nebraska Public Power District Letter dated July 10, 2001, Request for Clarification - ANSI/ANS-3.5-1998 Standard Document, Section 4.4.3.2 ..... *30*
11.2 AI-14 (SK CHANG) - DCS STIMULATION: 31
11.3 AI-42 (SK CHANG) – INDUSTRY SURVEY 32
11.4 AI-13 (ROBERT FELKER, JIM FLORENCE AND BUTCH COLBY) – REVIEW OF LISTS 34
11.5 AI-68 (BUTCH COLBY) - INDUSTRY SURVEY 38
11.5.1 List of utilities which contributed to Survey *38*
11.5.2 Percentages of yes – no inputs to the total *39*
11.6 AI-60 (GEORGE MCCULLOUGH) TRAINING NEEDS ASSESSMENT 42

ATTACHMENTS 45

1 AN INTRODUCTION TO SIMULATION BASED ELEARNING – ALLAN BIGNELL 46

1.1 WHAT IS THE ROLE FOR SIMULATION IN THE NEW ECONOMY? 46
1.2 INTRODUCTION 46
1.3 TRANSFORMING DATA 46
1.4 SIMULATION AND ELEARNING 47
1.5 EVOLUTION OF ELEARNING TO SELEARNING 47
1.6 ELEARNING TODAY 48
1.7 SIMULATION TODAY 48
1.8 ELEARNING 48

2 COMMERCIAL FLIGHT REGULATIONS - MIKE FEDELE 51

2.1 REGULATORY REQUIREMENTS - THE PAST TEN YEARS 51
2.2 REGULATORY REQUIREMENTS – TYPICAL REQUIREMENTS 52
2.2.1 Section 1 - List of Requirements 52
2.2.2 Section 2 - List of Tests 52
2.2.3 Section 3 - List of Subjective Evaluations 52
2.3 REGULATORY REQUIREMENTS – TYPICAL CONTENT 52
2.4 REGULATORY REQUIREMENTS – REVIEW PROCESS 52
2.5 CANADA: AS REQUIRED 52

CLOSED ACTION ITEMS 54

2 Next Meeting

Location: Entergy Headquarters, Jackson, Mississippi
Date: March 9-11, 2002

- Monday Mar 08 – Travel or Break Out Session
- Tuesday Mar 09 - Full Day
- Wednesday Mar 10 - Full Day
- Thursday Mar 11 - Full Day
- Friday

3 Motions

Welchel Accept 2001 April 3 Minutes	Motion: Carried (Unanimous)
Florence Allow Keith Welchel voting privileges for this meeting via the video conference	Motion: Carried (Unanimous)
Dennis Grant Larry Vick Voting Privileges	Motion: Carried (Unanimous)
Motion from the Floor Missing two consecutive meetings in a row with out representation could result in loss of membership on the committee.	Motion: Carried (Unanimous)
Butch – Jim Florence seconded To amend the 10 items listed in section 3.1.3 to the following 4 items: 1.Heat-up from cold shutdown to rated power; 2.Operator-conducted surveillance and performance testing; 3.Load changes; 4.Unit shutdown from rated power to cold shutdown conditions	Motion: (Not carried)

4 Action Item Activity

69	Check out and report information on SECY-01-0125	Vick
70	Come up with a set of rules for use and what will go on the web site.	Florence
71	Verify if ANS normally provide the minutes of group meetings	Dennis
72	Check if we can add an appendix and still reaffirm	Shelly
73	Send the clarification letter to ANS on the Scenario Based Testing	Dennis
74	Contact ANS Standards Administer to determine if we can refer to documents other than ANS Standards	Dennis
75	Contact the industry	Florence
76	To research Germany regulatory standards and navy standards	Colby Paris

5 Visitors

Visitor	**Date**	**Affiliation**	**Email, Phone Fax**
Assad Hodhod	2001Aug06-08	CAE	Email: assad.hodhod@cae.com Phone: (514)()9740405 Fax: (514)(01)29899090
Jane Neis	2001Aug06-09	MANTG Chairman R.E. Ginna Nuclear Power Plant Training Center	Email: jane_neis@rge.com Phone: (716) 546-6646 Fax: (716) 524-8278
Terry Byron	2001Aug06-09	INPO Suite 100 700 Galleria Parkway, SE Atlanta, GA 30339-5957	Email: byrontr@inpo.org Phone: 770-644-8627 Fax:
Allan Bignell	2001Aug08	CAE	Email: bignell@cae,com Phone: 514 341-6780 ext. Fax:
William A. DeLuca	2001Aug09	Pennsylvania Power & Light, Co. Susquehanna Steam Electric Station P.O. Box 467 Berwick, PA 18603	Email: WADeLuca@pplweb.com Phone: 570-542-1988 Fax: 570-542-3177
Mike Fedele	2001Aug09	CAE	Email: fedele@cae.com Phone: 514 341-6780 ext. 4334 Fax:

6 Roll Call

Present	Member	Address	Notes-Proxy	Email-Phone-Fax
Present	Timothy Dennis **Chairman**	P. O. Box 119 645 Lehigh Gap St. Walnutport, PA 18088-0119		Email: a243@yahoo.com Phone:610-767-0979 Fax: 610-767-7095
Present	Jim Florence **Vice Chairman**	Nebraska Public Power District P. O. Box 98 Brownville, Nebraska 68321		Email: jbflore@nppd.com Phone: 402-825-5700 Fax: 402-825-5584
Absent(1)	Keith Welchel **Secretary**	Duke Power Company Oconee Training Center- MC:ON04OT 7800 Rochester Hwy Seneca, SC 29672	Absent but attending via Video conference	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	Larry Vick	US NRC, Office of Nuclear Reactor Regulation 09-D24 Washington, DC 20555		Email: Lxv@nrc.gov Phone: 301-415-3181 Fax: 301-415-2222
Absent	George McCullough	American Electric Power Sixth Ave. St. Albans, WV 25177-2964	Absent but attending via telethon conference	Email: gsmccullough@aep.com Phone: 304-722-1337 Fax: 304-722-1332
Present	Hal Paris	GSE Systems 8930 Stanford Blvd. Columbia, MD. 21004		Email: hal.paris@gses.com Phone: 410-772-3559 Fax: 410-772-3595
Present	Robert Felker	EXITECH Corporation 102 E. Broadway Maryville,TN 37804		Email: rfelker@EXITECH.com Phone: 410-461-4295 Fax: 410-730-4008
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:
Present	William M. (Mike) Shelly **Style Editor**	Entergy Services, Inc. 1340 Echelon Parkway Jackson, MS 39213-8298		Email: wshelly@entergy.com Phone: 601-368-5861 Fax: 601-368-5816
Absent	Dennis Koutouzis	INPO 700 Galleria Parkway, NW Atlanta, GA 30339-5957	Proxy: Terry Byron	Email: koutouzisjd@inpo.org Phone: 770-644-8838 Fax: 770-644-8120

Absent(1)	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
Present	Kevin Cox	Exelon Generation Dresden Nuclear Power Station 6500 North Dresden Rd. Morris, IL 60450		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
NA	Suriya Ahmad	Standards Administrator American Nuclear Society 555 North Kensington avenue La Grange Park, IL 60526-5592		Email: sahmad@ans.org Phone: 708-579-8269 Fax: 708 352 6464

7 Action Item List

7.1 Action Item Quick-look Table

Open	Complete

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				

7.2 Action Items

No.	Status	Date	Assigned To:	Work Assignment
1	**Tim** contacted Mike Wright. No Input from Mike. The Scope change should be approved soon. 2001Apr05 Scope statement will be	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 Tim Dennis will contact Mike Wright (ANS-3 chair). Are DOE issues referencing simulators? 2001Apr05

	revised based on SubCommittee-1 comments that ANS 3.1 is not Training Criteria			Dennis Tim attended the SubCommittee-1 meeting and was informed the PINS form needs to be completed. Additionally, the scope statement states ANS 3.1 establishes Training Criteria, but does not. Accepted 3.5 Scope change and Appendix D **2000mar09** Chandler Comments (NUPPSCO) relating to DOE simulators. We need to resolve Open NUPPSCO comments from the 1998 standards approval process.
8		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. 2001Apr05 Contacted Sub-Committee-1 and Dennis needs to complete PINS forms;
13		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. 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 automatic action. Suggestion to replace Sections 4.1.3 and 4.1.4 with the language above. 2001Apr05 Felker – Tables that remain in the 2003 Std should updated or noted as Historical. Florence – Recommendation for wording in Section 3.1.3. See Notes in Minutes Body. 2001Apr04 Colby Presented the History of the Critical Parameters list. 2001
14		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) 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 New Definitions: Suggested choices for new definitions: **stimulated hardware.** Components or devices that are integrated to the simulator process via simulator inputs and/or outputs which perform their functions independently of and parallel to the simulation process". **stimulated components.** Hardware or software components that are integrated to the simulator process via simulator inputs and/or outputs which perform their functions independently of and parallel to the simulation process". **stimulated components.** Components or devices that are integrated to the simulator process via simulator inputs and/or outputs which perform their functions independently of and

				parallel to the simulation process". **stimulated components.** Hardware or software components that perform their functions independently of and parallel to the simulation process" and Change Stimulated Hardware to Stimulated Device Originator: NUPPSCO comments 1998 review process and in Butch's survey **2000mar09** Determine the source of this comment
16		Priority 1 –	**Welchel Dennis**	Coordinate use of Discrepancy and Deviation. Consider Yoder #12. NUPPSCO Comment **2001apr03** Welchel Discrepancy is used in sections 4.4.3.2 and 5.2. Webster's definition: Discrepancy-inconsistency Deviation – diverge
20		Priority 1 –	**Paris Colby Kozak**	Exploiting technology changes and future industry trends. What's coming around the corner; 2001Apr05 Paris Presentation: What is Around the Corner (See Attachments Section) **2001Aug09**

				Paris Presentation – Distributed Control Systems scope needs to be considered in the standard (Hal will e-mail his presentation to Butch).
25		Priority 2 –	**Dennis**	Process Guidelines (Mods and Testing) ;Institutionalizing Procedures Dennis: Next meeting, present external review showing procedures etc… and present recommendations using Millstone experience. 2001Apr05 Dennis Deferred
36		Priority 2	**Koutouzis** **Havens**	Questions from Review of INPO Documents: Timeline for incorporation of Plant design changes into the simulator Instructor Qualification Long Term Open Simulator Fidelity Issues This is an information AI 2001Apr05 Koutouzis No Update Related AI: 34
40		Priority 1	**Cox** **Vick** **Florence** **Collins** **McCullough**	Appendix Update for Scenario Based Testing Documentation. 2001Apr05 Draft a Scenario Based Testing Guideline (new) Appendix
42		Priority 1 -	**Chang** **Felker**	Use of Verification and Validation Origination: Colby Survey

			Cox	**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.**
44		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. 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**
57		Priority 1 -	**Dennis**	Remove all references to 3.1 2001Apr05

				Dennis Deferred for later discussion.
58		Priority 1	**Dennis**	Send Robert Boire a note of thanks for his participation 2001Apr05 Dennis Letterhead not available. Florence will contact Shawn at ANS and request letterhead.
59		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 2001Apr05 Florence Deferred until Florence communicates with McCullough
60		Priority 1	**McCullough**	Define the Term **Training Needs Assessment** in such a manner that it is clear in intent to both Training and Simulator staffs 2001Apr05 McCullough Trainers and Simulator personel view Training Needs Assesments Differently; Training Needs Analysis and Training Needs Assessment are npot used consistently. McCullough will revisit this item in a future date; Reference: ACAD-85-006 "A Suppliment to Principles of Training Systems Development"
68		Priority 1	**Colby Shelly Felker**	Survey #2 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			**Vick**	Check out and report information on SECY-01-0125
70			**Florence**	Come up with a set of rules for use and what will go on the web site.
71			**Dennis**	Vary if ANS normally provide the minutes of group meetings
73			**Tim**	Send the clarification letter to ANS on the Scenario Based Testing
74			**Tim**	Contact ANS Standards Administer to determine if we can refer to documents other than ANS Standards
75			**Jim F**	Contact the industry
76			**Butch & Hal**	To research Germany regulatory standards and navy standards

8 Working Group Procedural Rules

8.1 Rules of the Chair

- Interim Voting (Motions) shall be by Consensus
- The Chairman rules that no Motions will be accepted when not in session
- Administrative issues by simple majority;
- 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;
- The two absent policy will be enforced;
- Word 7.0 will be the document format;
- The Host will collect and send all handout material for absent members without proxy;

8.2 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

9 8. Monday 2001Aug06 (Day 1)

9.1 Opening Comments (Tim Dennis):

9.2 Roll Call

Absent Members:

- Keith Welchel
- Bill Deluca
- George McCullough
- Dennis Koutouzis
- Bud Havens

Review of Meeting minutes Dated 2001April

- Motion to Accept Minutes as Written
- Minutes Accepted

Review of the Agenda

Membership:

- Verified

.

10 Reports

10.1 INPO

10.1.1 Terry Byron

- Talked about aging fidelity issues
- Salem and Hope creek updating core models – INPO is looking at feedback on how the operator is looking at the training.
- Information on Pebble Bed
- Evaluators – Who decides How do they take in to account deficiencies in the simulator
- How does it affect the operator training.
- How does INPO train their evaluators.
- Is INPO looking at revising an old standard on performance of the simulator. INPO is not aware of any action at this time.

10.1.2 MANTG – Mid Atlantic

- Jane Neis
- Next Meeting, TMI 2001
- Mainly dealt with all areas of training issues
    - One would be the simulator sub committee started about 3 years ago
    - Also have operations, supervisors, etc
- They have two white papers on
    - Physical fidelity – On USUG web site
    - Scenario based testing - On USUG web site

- Can the meeting minutes be provided to others? Jane will check

- Gave presentation on where the industry was at for SBT.
- Had very good discussion. Concerned with initial license training and also licensed training
- A lot of the fear seems to dissipating with regard to SBT
- Concerned on lack of manpower
- Concerned with having simulator time available
- They are waiting for the rule change. Things on hold for the most part
- Concerned this task will be transferred to the ops training and taking away from the simulator group. Will they understand what is good enough. Having trouble going with this issue. Will is save money and why have we not gone this way by now.
  - Documentation
  - How much is needed
  - When will have to done
  - What type will be required
  - They put on an instructor work shop
  - Instructor training
  - Guest speakers
  - Talk about SBT
  - How long should a scenario be left on the shelf? - Any time you change a training load. Look at what was changed.
  - Jim offered to go out after SBT is completed, ANS working group should go out to the industry
  - How do you define SBT?
  - Run the scenario – run the test look at two different parameters. Same direction, and time frame.
  - Would it help if we gave some input on off the shelf tests and guide lines
  - Core updates
  - Looking at developing a whited paper on core updates. Looking for general guide lines of when and how often it should be done.
  - What does the operator actually see
  - Cost verse benefit for core and thermal hydraulic up grades

10.1.3 NFSC

- Tim Dennis
- June 21 meeting

- We report to Sub Committee 21 now
- We can not provide a clarification to the standard with out a formal question being asked.
- We should look at writing standards for nuclear facilities rather than just simulator.
- Incorporate risk informed approach
- We have to submit an annual report – Tim will use the meeting minutes.
- Organization
- We report to the old 3.1. 3.0 reports to NFSC
- They are looking at withdrawing some standards. Do not think any of them apply to simulators.
- ANS web site being updated
- They have a new administrator Suriya Ahmad

10.1.4 EXITECH

-

Comment [w1]: Don't understand this comment or why it is here.

10.1.5 GSE

- Conference September 24,2001 in Orlando for GSE/RNI
- Geared towards fossil and DCS controls
- Looking for ANS participation

10.1.6 CAE

- Will have a presentation on flight regulations on eLearning as it may apply to flight simulators

10.1.7 North Anna and Surry

- Re-hosting and replacing simulator models
- Class room trainers

10.1.8 Ginna

- Just completing rehost everything going good

10.1.9 Entergy Nuclear South

- By the year 2002 all simulators will be on same platforms

10.1.10 Excelon

- Just finishing the rehost projects
- Increasing the power output of plant going from 820 MWe to 912 MWe

10.1.11 Millstone

- Upgrading the feed pump controllers
- Upgrading feed water heater controller

10.1.12 Oconee

- Plant S/G replacement project is driving replacement of Simulator Primary, OTSG, and BOP

10.1.13 Cooper

- New sound systems
- Will be presenting a paper on it
- Upgrade on thermal hydraulic models
- Loss of grid simulation

10.1.14 USUG

- Jim Florence
- Met in January 2001 at USUG meeting at Palo Verde Site
  - No changes from our last meeting
  - Problems with scenario based testing
  - An awareness that several International users rely on the ANS 3.5 standard

- General meeting atmosphere is that the regulation is not in place, so most utilities are not committing to the standard at this time;
- Next meeting in January 2002 in San Antonio
- USUG – We now have a site for ANS group – We will not need a password to access the web site.
- NPPD has set this up and will maintain it.
- Trying to set up direct access using our (Working Group) e-mail address.
- Showed the ANS web site
- Discussed putting work in progress on the web site for the meeting minutes.

10.1.15 SCS

- Jim Florence
- ANS 3.5 is on the agenda for the next conference in January 2002

10.1.16 DOE

- John Yoder sent correspondence from Andre?
- Paris - International simulator users rely on the ANS 3.5 Standard

10.2 Adjourned 2001Aug06: 1630

10.3 Tuesday 2001Aug07 (Day 2)

10.4 Officers report

10.4.1 Styles discussions

10.4.1.1 Mike Shelly

- We can reaffirm the current standard and still change the Appendix. Appendix is not considered part of the standard and can be revised with out changing the standard. In other words
- A major change to appendix may not allow reaffirmation the standard
- If we reaffirm and change the appendix, it will still have to go through the committee
- Editors report

10.4.1.2 Butch Colby

- Butch showed the members how changes to the 98 standard are being maintained and controlled. Basically each change will have the associated date and meeting in which the change occurred and any specific information associated with that change. Each change will have a unique numbering system.

10.4.1.3 NRC – Larry Vick

- The rule change is currently with the commissioners for consideration and affirmation vote is pending.
- Sixteen comments were received by the NRC on the proposed rule of which ANS 3.5-WG submitted three comments.
- SECY-01-0125 can be found on the NRC WEB Site.

10.4.1.4 Jim Florence

- Jim presented a clarification on the letter from Cooper Nuclear Power Plant to the Working Group.
- After much discussion, the final clarification was agreed too. Refer to attachment 1 for the contents of the letters
- Presented the overall results of the 2nd survey.
- Refer to the hand out for the Percentage of yes and no answers for each question asked.
- The written comments were also presented, but they will be sent out under a specially cover letter to each utility which responded. They will also placed on the ANS – USUG web page.

10.5 Adjourned 2001Apr04: 1700

10.6 8. Wednesday 2001Aug08 (Day 3)

10.6.1 Presentation

10.6.1.1 Verification testing and validation testing

10.6.1.1.1 S K Chang

- SK discussed comments received from the industry on the first survey related to V&V. Refer to the handout.

10.6.1.1.2 eLearning presentation by Allan Bignell

- Refer to handout

10.7 Adjourned 2001Apr05: 1730

10.8 Thursday 2001Aug09 (Day 4)

10.9 Presentations

10.9.1 Commercial flight regulation presentation by Mike Fedele

- Refer to handout

10.9.2 Action Item #13 by Bob Felker

- Discussed table 3.1.3
- Refer to hand out

10.10 Discussed Prioritizing the Action Item List

- Any action item which contains a priority 1 will be presented by our next meeting

10.11 Adjourned 2001Aug09: 1200

11 Action Items

11.1 AI-67 (Florence) - Clarification Response – Scenario-based Testing

11.1.1 Reference: Nebraska Public Power District Letter dated July 10, 2001, Request for Clarification - ANSI/ANS-3.5-1998 Standard Document, Section 4.4.3.2

The ANS-3.5 Working Group met at the CAE Inc. facility in Montreal, Canada the week of August 6, 2001 to discuss the subject in response to the reference.

The working group's response to the request for clarification regarding Scenario-based Testing follows:

1. What is the intent of Scenario-based Testing?

   Scenario-based Testing is intended to best utilize, to the extent possible, the operator training program scenario development process to take testing credit for having performed those normal evolutions, malfunctions, local operator actions, and other features exercised by the scenario.

2. Does Scenario-based Testing impose additional training program requirements?

   No.

3. How does Scenario-based Testing interface with simulator performance testing?

   Scenario-based Testing is a part of the comprehensive testing program as described in section 4.4 of the Standard. Simulator performance testing comprises Operability and Scenario-based Testing and establishes a test program to ensure acceptable simulator performance for the use in operator training or examination.

4. Do simulator users have to test each scenario before ***every*** use, including those utilized to support initial license candidate training programs?

No.

5. Can training programs that utilize simulators currently certified to previous editions of the standard take testing credit for simulator performance testing and simulator scenarios previously developed and approved for use in operator training or examination?

   Yes, users of the standard may take testing credit for simulator performance testing and simulator scenarios previously developed and approved for use in operator training or examination.

Please submit these responses to the reviewing committee and provide the ANS-3.5 Working Group feedback on this clarification. We are anxious to disseminate this information to the industry.

11.2 AI-14 (SK Chang) - DCS Stimulation:

- A number of stimulated devices are digital control systems (DCS). A DCS usually includes a microprocessor loaded with executable software and peripherals (e.g. interface cards).
- A DCS accepts inputs from operators and the plant sensors and **simulates** the functionality of gates, amplifiers, summers, timers, controllers, etc. And then it sends outputs to other components of the plant.
- A DCS runs **real time**. A second is divided into a number of intervals (frames)and the SW blocks(modules)are executed in one or more of these intervals without slippage. The execution of the SW modules is controlled by another SW (Real Time Executive).
- The body of a DCS is designed as a simulator and it functions like a **part task simulator.**
- The DCS executive can be modified such that the DCS takes command from the simulator enabling the DCS to **synchronize** with the simulator like a slave/master relationship. The control logic (SW executable) is intact. Such a DCS has the capabilities of run, freeze, snapshots, reset, backtrack, etc.

  - Suggestion: include *synchronization* in the new definition for stimulated device.

  - Repeatability/fidelity is a potential issue:

- Multi-processor simulator. Hal had excellent discussions on this issue.

- A DCS may have a self (feed forward) tuning feature i.e. controller gains are optimized according to qualified operating events. Controller gains are no longer constants and they may change upon completion of a scenario. Simulator scenarios may not be repeatable due to changes in controller gains. Also, the gains may be different from those in the reference unit.

11.3 AI-42 (SK Chang) – Industry Survey

Verification testing and validation testing:

One of Butch's survey questions was does the 1998 standard contain items you do not agree with? There were four comments related to V&V:

1. The section on V and V should never have been allowed into the standard - those words have very specific meaning in the nuclear field and thus is very misleading to people outside the simulator world. At the least, the terms should be called something different such as "independent testing" or "integrated testing", etc. This is the scariest part of the new standard for me. (5.1)

   Some users of the Standard may have been led to believe that the 1998 standard has adopted the meaning of V&V from documents such as ANSI/ANS-10.4 "guidelines for the verification and validation of scientific and engineering computer programs for the nuclear industry". ANSI/ANS-10.4 has detailed guidelines for V&V in each of the 8 SW activities from planning to production. The 1998 standard does not refer to 10.4.

   The standard was developed for full scope nuclear simulators used for operator training and examination. People outside the simulator world are certainly welcome to review the document but it was developed specifically for simulators. V&V in the nuclear community have specific meaning when applied within the context of a nuclear quality assurance program but that is NOT what the standard is talking about. The standard directly defines the meaning of the terms in the opening paragraphs of sections 4.4.1 and 4.4.2. It has no other implication within the testing section of the standard. Its accepted meaning within the IEEE Software Quality Assurance and Software Engineering standards is consistent with our definitions within sections 4.4.1 and 4.4.2.

   V&V is a must to have reasonable assurance that a software can work in all occasions. V&V is different from independent testing or integrated testing. The words V&V in the Standard may be slightly qualified/modified to apply specifically to simulators, but the meaning and the intent should not be altered.

2. I agree with both that V&V is VERY important. We just need a better choice of words and some guidelines as to how to implement.

   We suggest no material changes, only minor language changes to emphasize we are talking about simulator V&V in the Standard.

   Suggest: Change "verification testing" to one of the following:

   - "simulator software verification testing"
   - "simulator verification testing "
   - "simulator verification"
   - "Software Implementation Testing"
   - "testing and implementation"

   We prefer/can live with the verbiage "simulation verification testing" which may or may not be acceptable to the user community.

3. Change "validation testing" to one of the following:

   - "simulator software validation testing"
   - "simulator validation testing"
   - "simulator validation"
   - "simulator discrepancy repair testing"

   We prefer/can live with the verbiage "simulation validation testing" which may or may not be acceptable to the user community.

   I still strongly object to the use of the terminology of "verification and validation" in this standard in light of it's accepted meaning within the industry. (5.9) same as above

   Items that need "clarification", i.e. V & V testing, documentation, etc. (5.18) same as above

   Verification testing - this section I find confusing and do not agree with the testing prior to integration (5.20)

4. Software testing prior to integration is a fundamental step in a top down design bottom up testing methodology. (The first sentence of the third paragraph of Section 4.4.1 addresses the requirements of initial software design and development process.)

   I would expect any competent software engineer to examine cases where everything did not work correctly and assure himself that his software was robust enough to properly deal with data conditions beyond the normal or expected data domain. That's one of the reasons why I believe verification testing is a necessary building block of an overall bottom up testing approach. I have also heard of this activity referred to as "programmer playland". He can do what he wants to the software to assure him is works properly under a reasonable set of "stress tests".

5. Verification is a software testing process that tests all possibilities that a software engineer can think of. It is a "what if..." testing process. A software works only under certain circumstances is usually a kludge, with certain exceptions

6. It is difficult and perhaps unnecessary, in certain instances, to perform verification testing prior to integration. A minor modification to existing integrated software, such as correction of power bus for a meter, does not need stand alone verification. Also the nuclear simulator users sometimes install vendor supplied SW packages such as DCS, PPC, Radiation Monitor Systems, etc.. Post integration verification testing is practical and maybe a proper way to verify the SW.

7. The confusion may arise from the first sentence of the second paragraph of Section 4.4.1 in the Standard

8. "Verification testing shall be performed prior to initially integrating new or modified software with the remainder of the software used for operator training and examination."

   Suggest change it to:

   "Simulator verification testing shall be performed when integrating new or modified software with the remainder of the simulator software. The effects of the new or modified software shall be evaluated and its impacts on the unmodified software shall be determined."

11.4 AI-13 (Robert Felker, Jim Florence and Butch Colby) – Review of Lists

Table Review

Section #	Title	Table is Currently:	Recommend	Comments/Issues
3.1.3	Normal Evolutions (Consider moving table to a new Appendix)	Historical	Current	1) 3.1.3.4 Delete "on safety related equipment or systems;" 2) 3.1.3.5 Delete "Operations at hot standby;" *Comment: Hot behind the stops is an old Navy term and not something done as a normal evolution.* 3) 3.1.3.7 Delete "with less than full reactor coolant flow;" *Comment: This is a malfunction and not a normal evolution. Addresses part of outstanding AI's from NUPPSCO review.* 4) 3.1.3.8 Delete "to hot standby"; 5) 3.1.3.9 Delete "through the use of permanently installed instrumentation" 6) 3.1.3.10 Delete
3.1.4	Malfunctions - Selection Process	Historical	Current	
3.1.4	Malfunctions to be Included (Consider moving table to a new Appendix)	Historical	Current	**NEEDS CLARIFICATION** *Comment: Based on the committee's wishes this table is to be retained. I therefore suggest it become current and to do so I have applied the 10CFR55.59 Requal criteria and SOER's to the table elements. The following changes fall out of this application:* 1) Change (6) to "Loss of service water or cooling to individual components, if required for safety"; 2) Delete (22); 3) Delete (23); 4) Delete (25); 5) Renumber remaining items
4.1.3.1.1	PWR 1% Steady-State Operation	Current	N/A	**NEEDS CLARIFICATION**

				Discuss removal of Mwe
4.1.3.1.2	PWR 2% Steady-State Operation	Current	N/A	**NEEDS CLARIFICATION** Discuss addition of Mwe
4.1.3.1.3	BWR 1% Steady-State Operation	Current	N/A	Add: 1) Feedwater temperature after the last feedwater heater; Discuss addition of "Narrow range reactor water level"
4.1.3.1.4	BWR 2% Steady-State Operation	Current	N/A	Delete: 1) Feedwater temperature after the last feedwater heater; Discuss deletion of "Narrow range reactor water level"
4.1.3.2	Normal Evolutions	Historical	Current	1) Change to "Be the same as the applicable reference unit procedure acceptance criteria."; 2) Replace (5) and (6) with the following: (5) The simulator shall cause an alarm or automatic action only if the reference plant would have caused an alarm or automatic action. 3) Renumber remaining items
4.1.4	Malfunctions	Current	N/A	1) Replace (3) and (4) with the following: (3) The simulator shall cause an alarm or automatic action only if the reference plant would have caused an alarm or automatic action.
4.2.1.2	Instrumentation, Controls, Markings, and Operator Aids	Current	N/A	1) Add "Scales";
4.2.1.3	Control Room Environment	Current	N/A	1) Add "Flooring";
4.2.1.4	Assessment of Deviations	Current	N/A	1) Delete (6)
4.4.1	Verification Testing	Current	N/A	No change recommended
4.4.2	Validation Testing	Current	N/A	No change recommended
4.4.3.1	Simulator Operability Testing	Current	N/A	No change recommended

5	Simulator Configuration Management	Historical	**NEEDS CLARIFICATION** ??	Does Section 5 reflect the current industry thinking on CMS?
5.1	Simulator Design Data	Historical	**NEEDS CLARIFICATION** ??	If Section 5 remains essentially the same then consider deleting (5) Simulator Specifications;
5.1.1	Utilization of Baseline Data	Historical	**NEEDS CLARIFICATION** ??	If Section 5 remains essentially the same then No change recommended
5.3	Incorporation of Simulator Changes	Historical	**NEEDS CLARIFICATION** ??	Add (3) Model fidelity upgrades;

11.5 AI-68 (Butch Colby) - Industry survey

11.5.1 List of utilities which contributed to Survey

1	ANO Unit 1
2	ANO Unit 2
3	Beaver Valley
4	Browns Ferry
5	Brunswick
6	Callaway
7	Catawba
8	Columbia Generating Station WNP2
9	Cooper
10	D.C. Cook
11	Davis Besse
12	Diablo Canyon
13	Dresden
14	Edwin I. Hatch
15	Fermi 2
16	Fort Calhoun
17	Ginna
18	Grand Gulf
19	HB Robinson
20	Hope Creek
21	Indian Point 2
22	Indian Point 3
23	James A. FitzPatrick
24	Laguna Verde
25	McGuire
26	Millstone Unit 2
27	Millstone Unit 3

28	Monticello
29	North Anna
30	Oconee
31	Palisades
32	Peach Bottom
33	Perry
34	Pilgrim
35	Prairie Island
36	Riverbend
37	S. B. Harris
38	Salem
39	San Onofre
40	Seabrook
41	Sequoyah
42	Sequoyah
43	South Texas Project
44	St. Lucie
45	Turkey Point
46	Vermont Yankee
47	Vogtle - Southern
48	Waterford Unit 3 - Entergy
49	Wolf Creek

11.5.2 Percentages of yes – no inputs to the total

					50	Total Surveys
SURVEY TOPICS	**YES**	**NO**	**Total Resp**	**Total %**	**Yes %**	**No %**
MISCELLANEOUS INPUTS						
Simulator same fuel cycle	36	13	49	98%	**72%**	**26%**
Normal time delay	0	0	0	0%	**0%**	**0%**

Unit fuel loads the same	19	7	26	52%	**38%**	**14%**
Change operating characteristics	5	21	26	52%	**10%**	**42%**
Non-license task training	15	30	45	90%	**30%**	**60%**
Functional requirements						
Predictive analysis	4	42	46	92%	**8%**	**84%**
Procedure Validation	19	28	47	94%	**38%**	**56%**
Probability risk assessment	8	38	46	92%	**16%**	**76%**
Emergency planning	16	31	47	94%	**32%**	**62%**
Severe accident management	8	38	46	92%	**16%**	**76%**
Other uses	4	36	40	80%	**8%**	**72%**
Extablish new standard						
Predictive analysis	2	42	44	88%	**4%**	**84%**
Procedure Validation	10	35	45	90%	**20%**	**70%**
Probability risk assessment	3	41	44	88%	**6%**	**82%**
Emergency planning	9	38	47	0%		
Severe accident management	5	40	45	90%	**10%**	**80%**
Other uses	1	39	40	80%	**2%**	**78%**
SIMULATOR UPGRADES						
Year declared RFT					**0%**	**0%**
Year component upgraded						
Computer platform	46	2	48	96%	**92%**	**4%**
Core nuetronic	35	13	48	96%	**70%**	**26%**
Thermal Hydraulics	34	14	48	96%	**68%**	**28%**
Plant process computer	34	14	48	96%	**68%**	**28%**
Radiation	23	24	47	94%	**46%**	**48%**
Electrical or Diesel	10	38	48	96%	**20%**	**76%**
Feedwater	20	28	48	96%	**40%**	**56%**
Other NSSS	21	27	48	96%	**42%**	**54%**

Other auxiliary	13	35	48	96%	**26%**	**70%**
Configuration management	31	17	48	96%	**62%**	**34%**
I/O system	23	23	46	92%	**46%**	**46%**
Instructor Station	43	5	48	96%	**86%**	**10%**
Others	6	33	39	78%	**12%**	**66%**
Noticed operational changes	9	36	45	90%	**18%**	**72%**
Adjusted training program	6	35	41	82%	**12%**	**70%**
Impact on training	18	30	48	96%	**36%**	**60%**
SURVEY TOPICS	**YES**	**NO**			**Yes %**	**No %**
STIMULATED SYSTEMS						
Do you have stimulated systems	43	5	48	96%	**86%**	**10%**
Would you keep them	34	13	47	94%	**68%**	**26%**
Which are stimulated						
Plant process computer	35	10	45	90%	**70%**	**20%**
SPDS	30	15	45	90%	**60%**	**30%**
Feed water pump controls	12	34	46	92%	**24%**	**68%**
Steam Generator level control	3	39	42	84%	**6%**	**78%**
Boiler level control	2	41	43	86%	**4%**	**82%**
Turbine control	2	42	44	88%	**4%**	**84%**
Radiation system	16	28	44	88%	**32%**	**56%**
Condenser level control	1	41	42	84%	**2%**	**82%**
MSR/Heater drain level control	2	43	45	90%	**4%**	**86%**
Other systems	18	22	40	80%	**36%**	**44%**
1998 Standard						
Plan to implement	42	2	44	88%	**84%**	**4%**
If draft revision becomes law	40	1	41	82%	**80%**	**2%**
					0%	**0%**
Section 3.1.3 changed					**0%**	**0%**
Modified	13	25	38	76%	**26%**	**50%**

Deleted	6	28	34	68%	**12%**	**56%**
Moved to Appendix	10	24	34	68%	**20%**	**48%**
Item #9 of 3.1.3 be modified	25	21	46	92%	**50%**	**42%**
Item #12 of 3.1.4 be modified	25	22	47	94%	**50%**	**44%**
Section 3.1.4 changed						
Modified	4	32	36	72%	**8%**	**64%**
Deleted	9	28	37	74%	**18%**	**56%**
Moved to Appendix	10	29	39	78%	**20%**	**58%**
	NT	**UNIX**	**MPX**	**OT**		**TOTALS**
SIMULATOR UPGRADES						
Software models	29	14	2	1		**46**
Plant process monitoring	9	11	7	17		**44**
I/O system	17	12	5	7		**41**
Radiation monitoring	20	12	5	5		**42**
Core model	24	15	3	1		**43**
Thermal hydraulics model	24	15	3	1		**43**
Instructor station	27	16	2	0		**45**

11.6 AI-60 (George McCullough) Training Needs Assessment

Define the Term **Training Needs Assessment** in such a manner that it is clear in intent to both Training and Simulator staffs.

From the existing standard:

(Section 2 Definitions)

"training needs assessment. An appraisal by a subject matter expert of a simulator deviation, deficiency, or modification, and its relative importance to the operator as required tasks are performed."

(Section 3.2.1.4 Simulator Control Room Deviations.)

"Where deviations exist among the simulator control panels, the reference plant panels in instrumentation, and audio-visual cues provided to the operator, such deviations may remain if a training needs assessment is performed in accordance with 4.2.1.4."

(Section 4.2.1.1 Scope of Panel Simulation.)

"A comparison shall be performed to demonstrate that control panels, consoles, and operating stations which are simulated as required by 3.2.1.1 replicate the size, shape, color, and configuration of those of the reference unit; that noticeable differences are documented; and that a training needs assessment has been conducted in accordance with the criteria provided by 4.2.1.4."

(Section 4.2.1.2 Instrumentation, Controls, Markings, and Operator Aids.)

"It shall be demonstrated that noticeable differences are documented and that a training needs assessment has been conducted in accordance with the criteria provided by 4.2.1.4."

(Section 4.2.1.3 Control Room Environment.)

"It shall be demonstrated that noticeable differences are corrected or that a training needs assessment has been conducted in accordance with the criteria provided by 4.2.1.4."

(Section 4.2.1.4 Assessment of Deviations.)

"A training needs assessment shall be performed for each deviation identified in 3.2.1.4 or 4.2. Deviations that do not impact the actions to be taken by the operator or do not detract from training are acceptable."

(Section 4.2.2.1 Systems Controlled or Monitored from the Control Room.)

"A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4. Deviations that do not impact the actions to be taken by the operator or do not detract from training are acceptable."

(Section 4.2.2.2 Systems Controlled or Monitored External to the Control Room.)

"A training needs assessment shall be performed for each deviation identified in accordance with criteria provided in 4.2.1.4."

(Section 4.3 Simulator Instructor Station Capabilities.)

"For stimulated hardware it shall be documented that noticeable differences have been defined and that training needs assessments have been performed in accordance with 4.2.1.4." **DOES NOT BELONG HERE**

(Section 5.2 Revision to the Scope of Simulation.)

"Determination of the need to incorporate related changes should be based primarily upon a training needs assessment."

(Section 5.3 Incorporation of Simulator Changes.)

"Changes in either category may precede actual changes to the reference unit based upon training needs assessment, e.g., control board modifications, new core fuel load."

(Section 5.3.1.1 Initial Upgrade.)

"Simulator modifications shall be implemented earlier if warranted by a training needs assessment."

(Section 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."

(Section 5.3.2 Performance-Based Simulator Changes.)

"Simulator changes that are based upon items such as revised reference unit performance data, student feedback, simulator performance tests, and LERs, and that are determined to be relevant to the training program as a result of a training needs assessment, shall be implemented based upon their training impact."

Attachments

1 AN INTRODUCTION TO SIMULATION BASED eLearning – Allan Bignell

1.1 What is the role for simulation in the new economy?

- What is seLearning?
- Why seLearning?
- An example
- Discussion

1.2 Introduction

The world is changing to a knowledge economy…and it is a confusing place!
The Knowledge Economy +

- Productivity of knowledge
- Efficiency of markets
- The role of simulation

1.3 Transforming Data

- Unstructured (Organizing related data sets) = Data
- Structured (Learning - Using, sharing, applying) = Information
- Structured in context = Knowledge
-
- Unstructured (Organizing related data sets) = The Web
- Structured (Learning - Using, sharing, applying) = Web base
- Simulation
- Structured in context = Simulation is
- The enabling technology for eLearning

1.4 Simulation and eLearning

- Students remember
  - - 10% of what they read
  - - 20% of what they hear
  - - 30% if they see visuals related what they are hearing
  - - 50% if they watch someone doing something while explaining it
  - - 90% if they do it themselves, even if only as a simulation - D. Menn – 1993

    I hear and I forget,
    I see and I remember,
    I do and I understand.
    Confucius c. 450 BC

- If knowledge is the critical resource in this new economy
- … then learning is the critical skill
- If experiential learning is far more effective
- … then simulation is the key technology

Web base simulation will be critical to the new economy

- What is the role for simulation in the new economy?
- What is seLearning?
- Why seLearning?
- An example would be
  - Simulation embodies your knowledge
  - Internet provides a way to economically deliver simulation
  - Simulation + Online Learning = seLearning (simulation based eLearning)

1.5 Evolution of eLearning to seLearning

- eLearning Today = Simulation today = seLearning
- Page flipping = Scripted animation = TruSim Freeplay

1.6 eLearning Today

- Derived from CBT world
- Simply re-purposing previous content for web delivery
- Not engaging
- High drop out rate
- Large focus on trying to manage the generic Learner

1.7 Simulation today

- Recognized as an important element in eLearning
- Largely targeted at soft skills
- Tends to be scheduled/scripted and animated
- Author Centric
- Focus on content

1.8 eLearning

- Learn by doing
- Just-in-time, on-demand
- Learner Centric
- Engaging
- Dynamic freeplay for discovery
- Largely targeted at hard skills
- Focus on context

Agenda

- What is the role for simulation in the new economy?
- What is seLearning?

- Why seLearning?
- An example
  - **Increased leverage**
- Start with simulation
  - Reuse the same simulation throughout the value chain to help knowledge workers be more effective & productive.

Design & Manufacture – Procure &Sell – Operate – Maintain

- More leverage – less risk – more value
- More than the simulation – you also need an effective delivery model

Simulation Based Design
Reduced Cycle Time & Risk Mgmt
Web Augmented Sales
Lower operating costs & CRM
Customer Training
Improved proficiency & Certification
Online Diagnostic
Maximum Asset Utilization
Value of seLearning
Building proficiency based training verse Building volume
Learning value verse Accessibility
Course authoring is faster vs. current CBT
-No unique creation of animations
Learning value is higher
-Elements of discovery
Adaptive to the learner
-Guided or Freeplay
Validity of training is greater
-Procedural response same as actual
Lower overall investment
-Reuse of simulator
Agenda

- What is the role for simulation in the new economy?
- What is seLearning?
- Why seLearning?

- An example
  - Integrated Architecture
- Custom Portal
  A web site, which defines and creates industry specific communities through provision of value added services, aggregated content and mechanisms for collaboration
- Core seExchange
  A web site, which, on behalf of all Custom Portals, provides the ability to deliver seContent and the mechanisms to support the associated commerce. It also creates the general seCommunity
- User Interaction Environment
  An environment which integrates general web access and user/simulation interaction through a custom Portal

2 COMMERCIAL FLIGHT REGULATIONS - Mike Fedele

2.1 Regulatory Requirements - The past ten years

Each Nation had its own regulatory standards

Commonality did not necessarily exist between nations

in terms of:

- specific testing details (tolerances, test conditions, etc.)
- qualification process
- application of subjective assessment

A separate set of standards exist for each type of training devices (FFS, FTD, etc)

With formation of JAA single standard for member nations

Introduction of international standard and IQTG:

- RAeS document (c1992)
- ICAO Doc. 9625-AN938 (c1995)
- IQTG introduced more end-to-end testing approach

With IQTG came standardization of tests and conditions, subjectivity still a problem

ICAO Doc. 9625-AN938 (c1995) recently reviewed by International Committee

updated version will be require all ICAO member nations to review their standards

At present with International standard:

- more standardized qualitative testing
- less subjectivity in the testing documents

2.2 Regulatory Requirements – Typical Requirements

2.2.1 Section 1 - List of Requirements

provides overall requirements of all systems and documentation required

2.2.2 Section 2 - List of Tests

lists all qualitative testing details to meet requirements

2.2.3 Section 3 - List of Subjective Evaluations

provides details on how the simulator is to be evaluated in a training environment

2.3 Regulatory Requirements – Typical Content

Tests in Section 2 are compared to aircraft flight test data

- engineering simulator data becoming acceptable in some cases

Tests in Section 3 are performed and evaluated by pilot with experience on type - i.e. type rated

- specific malfunctions are called for in this section

2.4 Regulatory Requirements – Review Process

United States: (NPRM) as required

2.5 Canada: as required

- Europe: JAA bi-annual - JAR STD Working Group

- Asia: Uses FAA documentation
- South America: Uses FAA documentation
- ICAO: as required uses international committee of industry experts

Closed Action Items

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

	Dennis			2001Apr05 Dennis - No - per SubCommittee-1 Tamp Meeting Tim will verify with Mike concerning additional scope (adding DOE facilities into 3.5). 2001Apr05 Dennis - No - per SubCommittee-1 Tamp Meeting **2000mar09** Tim 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: Closed**		**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: Closed** **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: Closed**			Intentionally Left Blank
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
17	**Date: 2001Aug09** **Status: Closed**		**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: Closed** (This Item will be ask on Survey#2)		**Colby** **Florence**	Using the simulator for other than Operator Training. Uses in predictive analysis and design mods, SAMGS procedures changes; 2001Apr05 Colby Include this as part of Survey #2 and Closed **2000mar09** Scope change. This will require approval from ANS-3
21	Date: 2000mar10 Status: Complete Keith Welchel wanted to dismiss this item. The WG agreed.		**Collins (Vick)** **Welchel** **Chang**	(JFC/KPW/JS) Hybrid Simulators. Hybrid Simulator refers to a simulator that implements many different technologies, source code vendors, different operating systems, integration vendors, etc. Maybe we need to have words that stipulate that testing needs to cover all the other changes we make to the simulator that may affect the operation of the simulator: Instructor Console, Operating Systems, New I/O, etc. (Voted to Dismiss-Consensus) Comments on regulation - The Working Group will not comment on regulations. The Standards Working Group is working in Working Group space. **2000mar10** Keith Welchel moved to dismiss this item. Jim Florence Seconded;
22	**Date: 2001apr05** **Status: Closed**		**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 lead 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 - Tim will give further consideration and he will look at industry standards; Measuring Real-Time;
26	**Date: 2000mar10** **Status: Complete** Historical information was presented at the SCS conference. Tim checked with ANS Headquarters and this issue		**Dennis**	1985 ANS 3.5 Standard is Historical Standard; Tim 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

	was discussed in detail			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: Closed**		Collins(Vick) Dennis Koutouzis	(JFC/TD) Possible cross-pollination with other standards. Frank and Tim 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: Closed**		**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: Closed**	**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: Closed**	**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.
37	**Date: 2001Apr05**	2000mar08	**Koutouzis**	Five Required Control Manipulations Clarification

	Status: Closed **Group agreed to closed this item. No additional information required.**		**Collins(Vick)**	2001Apr05 Koutouzis No Update
38	**Date: 2001Apr05** **Status: Closed**	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: Closed**	2000mar08	**McCullough** **Florence** **Felker**	Consider differentiating validation of Requal and Initial License Scenarios 2001Apr05 McCullough {Add LTI Document Here}
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
43	**Date: 2001Apr03** **Status: Complete**	2000mar08	**Welchel**	Send 1998 Standard NUPPSCO comments to: Hal Paris

				Bob Felker Bud Havens **2001apr03** Welchel - Delivered 2001apr03
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: Closed**		**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: Closed** **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: Closed**		**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**
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: Closed**		Koutouzis	Send Meeting Materials to Absent members;
63	**Date: 2001Aug09** **Status: Closed**		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: Closed**		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**		Havens	Scan NRC Form 398 and Email to WG members

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

				Please clarify the preceding paragraph by addressing the following questions: 1. What is the intent of scenario-based testing? Does scenario-based testing impose additional training program requirements? ANS-3.5 Working Group answer: Scenario Based Testing is intended to best utilize, to the extent possible, the existing training scenario development process without imposing additional training program requirements. 2. How does scenario-based testing interface with simulator performance testing? ANS-3.5 Working Group answer: Simulator performance testing comprises Operability and Scenario Based Testing and establishes a test program to ensure simulator performance for the use in operator training and examination. 3. Do simulator users have to test each scenario before every use, including those utilized to support initial license candidate training programs? Can training programs that utilize simulators currently certified to previous editions of the standard take testing credit for simulator performance testing and simulator scenarios previously developed and approved for use in operator training or examination? ANS-3.5 Working Group answer: Users of the standard are encouraged to take testing credit for simulator performance testing and simulator scenarios previously developed and approved for use in operator training or examination. This does not imply that a scenario shall be tested before every use, however the following items should be considered before subsequent use of the approved scenario developed for operator training or examination: * If the training process requires revalidation of the scenario; * Whenever models or simulator capabilities are changed or

				modified in a way that affects the scenario performance. If any of the above items have occurred and impact the scenario, the scenarios shall be re-tested before use for operator training or examination. I would appreciate a clarification statement from the ANS-3.5 Working Group. Thank you for your attention to my request. Sincerely, James B. Florence Simulator Supervisor Nebraska Public Power District Cooper Nuclear Station Brownville, NE 68321 Phone: 402-825-5700 Pager: 402-977-3692 Fax: 402-825-5584 Email: jbflore@nppd.com
72	**Date: 2001Nov27** **Status: Closed**		**Shelly**	Check if we can add an appendix and still reaffirm **2001Nov27** **Shelly** I contacted Suriya with this question, and his response was that a standard can be reaffirmed if the appendix/annex will be informative. If the additional appendix is informative, then you should supply a statement in the foreword regarding this informative piece. The statement in the forward is NOT required but highly recommended. The standards can not be reaffirmed if the additional appendix will be

				normative. In this case the standard will have to be considered under the revision process through ANSI. According to Webster's, NORMATIVE means "of, relating or conforming to, or prescribing norms". Based on this, we could add an appendix to the standard and still reaffirm the current standard, but we must ensure the appendix contains clarifying information and doesn't prescribe any new requirements or parameter limits. I consider this action closed unless someone knows of a need for further research on this issue.