April 9, 2009

MEMORANDUM TO: Frederick D. Brown, Director
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FROM: Nancy L. Salgado, Chief **/RA/**
Operator Licensing and Human Performance Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 19, 2009, MEETING WITH INDUSTRY FOCUS GROUP ON OPERATOR LICENSING ISSUES

On March 19, 2009, the U.S. Nuclear Regulatory Commission (NRC) staff held a public meeting with the Industry Focus Group (FG) on operator licensing to discuss a number of operator licensing issues. Enclosure 1 lists the attendees at the meeting.

This meeting was the latest in a series of meetings intended to promote efficient, effective, and consistent preparation and administration of initial operator licensing examinations. The discussions addressed issues related to simulator fidelity and testing, implementation of Title 10 of the *Code of Federal Regulations* Part 26 (10 CFR 26) Subpart I, consistency in the initial licensing process, and other operator licensing issues. Enclosure 2 is the agenda for the meeting, and the discussion topics are summarized in Enclosure 3. Enclosure 4 is the Nuclear Energy Institute's (NEI's) response to NRC comments on their simulator scenario based testing white paper.

Representatives of the NRC and the industry agreed that this meeting was useful for the exchange of information and agreed to continue the periodic meetings.

Enclosures: As stated

CONTACT: David Muller, NRR/DIRS
(301) 415-1412

April 9, 2009

MEMORANDUM TO: Frederick D. Brown, Director
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FROM: Nancy L. Salgado, Chief **/RA/**
Operator Licensing and Human Performance Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 19, 2009, MEETING WITH INDUSTRY FOCUS GROUP ON OPERATOR LICENSING ISSUES

On March 19, 2009, the U.S. Nuclear Regulatory Commission (NRC) staff held a public meeting with the Industry Focus Group (FG) on operator licensing to discuss a number of operator licensing issues. Enclosure 1 lists the attendees at the meeting.

This meeting was the latest in a series of meetings intended to promote efficient, effective, and consistent preparation and administration of initial operator licensing examinations. The discussions addressed issues related to simulator fidelity and testing, implementation of Title 10 of the *Code of Federal Regulations* Part 26 (10 CFR 26) Subpart I, consistency in the initial licensing process, and other operator licensing issues. Enclosure 2 is the agenda for the meeting, and the discussion topics are summarized in Enclosure 3. Enclosure 4 is the Nuclear Energy Institute's (NEI's) response to NRC comments on their simulator scenario based testing white paper.

Representatives of the NRC and the industry agreed that this meeting was useful for the exchange of information and agreed to continue the periodic meetings.

Enclosures: As stated

CONTACT: David Muller, NRR/DIRS
(301) 415-1412

DISTRIBUTION:

PUBLIC		IOLB/NEI & Public Meetings Folders	
BBoger	FBrown	MCheok	NSalgado
TMensah	JMunro	RPelton	MWidmann
SGuenther	LVick	SHansell	MJunge
HPeterson	RLantz	SCurrie	RSmith (ras@nei.org)

PMcCullough (mccullughpn@inpo.org)
RMeyer (robert.meyer@exeloncorp.com)

ADAMS Accession No. ML090980469

OFFICE	IOLB	IOLB/BC
NAME	DMuller	NSalgado
DATE	04/09/09	04/09/09

OFFICIAL RECORD COPY

List of Attendees - NRC / Industry Focus Group Meeting on Operator Licensing March 19, 2009	
Name	Organization

Nancy Salgado	NRC / HQ
Lawrence Vick	NRC / HQ
Michael Cheok	NRC / HQ
Jim Kellum	NRC / HQ
David Muller	NRC / HQ
John Munro	NRC / HQ
Siegfried Guenther	NRC / HQ
Sean Currie	NRC / HQ
Sam Hansell	NRC / RI
Malcolm Widmann	NRC / RII
Hironori Peterson	NRC / RIII
Ryan Lantz	NRC / RIV
Russell Smith	Nuclear Energy Institute (NEI)
John Butler	NEI
Chuck Sizemore	Florida Power and Light
Gregg Ludlam	Exelon
Michael Petersen	XCEL Energy
Timothy Dennis	ANS 3.5 Standards Committee
Mark Carey	Constellation Energy
Joseph Arsenault	Western Technical Services
Tom Mayfield	Entergy
Robert Meyer (via telephone)	Professional Reactor Operator Society (PROS)
Deann Raleigh (via telephone)	Curtiss-Wright Corp.
Mitch Taggart (via telephone)	Ameren Energy

ENCLOSURE 1

AGENDA FOR THE CATEGORY 2 PUBLIC MEETING WITH THE
INDUSTRY FOCUS GROUP (FG) ON OPERATOR LICENSING ISSUES

March 19, 2009; 10:00 a.m. - 3:00 p.m.
U. S. Nuclear Regulatory Commission
One White Flint North, Room 13G4
11555 Rockville Pike, Rockville, MD 20852-2738

TOPIC	LEAD
Introductions and Opening Remarks	NRC/FG
Public Input	Public
Generic Issues - Simulator fidelity and testing - NRC Form 398 OMB clearance - New FAQs posted on the OL feedback page - Operator medical issues - Part 26 Subpart I update - New reactor licensing update	NRC/FG
Public Questions and Answers	Public
Initial Licensing Issues - Exam projections - SRO-only question guidance update - Examination consistency and level of difficulty - License eligibility (ANS-3.1 and ACAD 09-001) - Other	NRC/FG
Public Questions and Answers	Public
Requalification Issues - IP-71111.11 changes	NRC/FG
Focus Group Issues - Promoting consistency between Regions	FG
Public Questions and Answers	Public
Summary / Conclusion / Action Item Review	NRC/FG

ENCLOSURE 2

DISCUSSION SUMMARY

GENERIC ISSUES

Simulator Scenario Based Testing (SBT) Methodology

The NRC staff acknowledged receiving the Nuclear Energy Institute's (NEI's) response to NRC comments on their September 18, 2008, White Paper entitled "Nuclear Power Plant-Referenced Simulator Scenario Based Testing Methodology" (Enclosure 4). Consensus was reached between the staff and NEI regarding all outstanding technical details, and the staff recommended that NEI issue a formal numbered document. NEI indicated it could issue a document by April 30, 2009. Options were discussed regarding future actions, including schedules for issuance of new revisions to ANSI/ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination," and Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Licensing Examinations."

NRC Form 398 Office of Management and Budget (OMB) Clearance Pubic Comments

The NRC staff informed the attendees that the triennial renewal of the OMB information collection clearance is in progress for NRC Form 398, "Personal Qualification Statement – Licensee," and that the public comment period will close in November, 2009. Anyone interested in reviewing and making comments on NRC Form 398 should refer to the Documents for Comment page on the NRC's website. In addition, the NRC will be requesting from facility licensee's a time burden estimate for filling out the form.

Two New Frequently Asked Questions (FAQs) Posted on the OL Feedback Page

The NRC staff discussed with the attendees two new questions and answers on the Operator Licensing Feedback page and briefly summarized the issues, which included: a clarification to the instructions for NRC Form 398 waivers, and guidance for the use of open reference questions on written initial licensing examinations. The FG presented concerns regarding limiting the available reference material during initial examinations for senior reactor operators (SROs), and setting an apparent maximum number of SRO-only open reference questions that can appear on an examination. The staff responded to these concerns by informing the FG that: (1) the FAQ provides only clarification of existing guidance, (2) problems can occur if an excessive number of open reference questions are used without additional judgment, and (3) the allowable range for the number of open reference questions presented in the FAQ was not intended to be an absolute limit, but was instead intended to further clarify what is meant by the "sparing and judicious" use of open reference questions on initial licensing examinations, consistent with the NRC goal to ensure that applicants master the body of knowledge required by 10 CFR 55.41 and 55.43.

Operator Medical Issues

The NRC staff reported that some Regions have noted an increase in the incidence of medical conditions that are not properly reported to the NRC as required by the regulations. The staff noted that the last generic communication on this subject (Information Notice (IN) 2004-20) was issued in 2004, and the staff is planning to update this generic communication in the near future. The staff also communicated that guidance regarding medical conditions is available in the FAQ section on the public website. The attendees welcomed any future NRC communication on

operator medical issues. The PROS representative also stated that he could initiate actions via PROS to inform their members of medical issues.

Part 26 Subpart I Update

The staff provided an update of NRC activities associated with the recently published rule contained in 10 CFR 26 Subpart I, "Managing Fatigue." The activities discussed included future NRC staff training, further meetings, inspection activities, and inspection procedure development. The staff also discussed the plan for publication of the final version of Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel."

New Reactor Licensing Update

A representative from the Office of New Reactors (NRO) provided a brief update of their significant operator licensing activities since the last meeting. Those activities included the endorsement of NEI's approach to cold licensing of operators at new reactors, beginning the process for revising the knowledge and abilities catalogs for nuclear power plant operators, making scheduling considerations for how initial examinations will be administered, and starting to examine what potential simulator resources the NRC will obtain for examiner and inspector training.

INITIAL LICENSING ISSUES

Exam Projections

The NRC staff emphasized to the attendees the importance of submitting realistic examination scheduling needs in response to NRC's annual operator licensing regulatory information summary (RIS). The staff stated that if the RIS responses are not realistic, it makes it very difficult to schedule and allocate NRC examiner resources. Also, the nuclear industry needs to account for the impact of new reactors on examination needs. The Region II representative indicated that dramatic changes have occurred regarding examination scheduling needs, and further discussed how that impacts the Region. The Region I representative also noted similar scheduling changes. The attendees acknowledged the information presented by the staff, and acknowledged the importance of their RIS responses in regard to NRC's scheduling and planning of examinations.

SRO-only Question Guidance Update

The NRC staff provided a brief update on the trial implementation of SRO-only written examination question guidance developed by Region II. The NRC Regions are still using, evaluating, and providing feedback on the guidance. The attendees acknowledged that they are also still gathering information regarding the use of the SRO-only question guidance.

Examination Consistency and Level of Difficulty

A FG representative informed the staff that efforts were underway to examine the consistency of written examination level of difficulty and distracter plausibility. The FG representative further discussed: (1) the use of bank questions and their review by the NRC, (2) the fact that Region II is the only Region that prepares written examination outlines for facility-prepared examinations, and (3) a concern that the NRC examination outline software used by Region II may result in

administrative errors regarding the wording of knowledge/ability statements. The NRC staff acknowledged the information, further stated that this was the first time the NRC staff had heard about any potential problems with Region II examination outlines, and that examination outline software problems have also been observed by the NRC for outlines prepared by facility licensees. The FG representative agreed to discuss the details of any outline errors with the Region II representative following the public meeting. (Following the meeting, discussions between the FG and Region II representatives determined that the outline errors were administrative in nature, have been corrected, and that there was never any technical errors with the software.) Further discussions occurred regarding NRC Region II's practice of preparing examination outlines, and it was concluded that this practice was within the scope of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." However, no firm conclusion was reached by the staff or the attendees as to whether this was a "best" practice. NRC headquarters staff, when questioned about regional consistency, responded that consistency is evaluated against NUREG-1021, and that in regard to examination outlines, Region II is operating within the guidance contained in the NUREG.

License Eligibility (ANS-3.1 and ACAD 09-001)

The NRC staff and the attendees briefly discussed a closed meeting previously held on March 17, 2009, with representatives of the Institute of Nuclear Power Operations (INPO) regarding license eligibility. INPO has proposed to replace ACAD 00-003 with ACAD 09-001 (both ACADs are titled "Guidelines for Initial Training and Qualification of Licensed Operators"), and the proposed replacement ACAD contains several changes with respect to license eligibility, including changes to/combining eligibility flowcharts, and certain revisions for crediting academic experience. In addition to briefly discussing the ACAD changes, the NRC and the FG discussed whether to credit new employee site familiarization activities as on-site experience or as training. However, properly crediting site familiarization activities was not resolved during the meeting, and the staff agreed to continue working with INPO and the FG to address eligibility issues.

Other Issues

One of the attendees questioned the staff if the NRC could delay making initial licensing examinations publically available. By delaying the public availability, the attendee stated that the last NRC examination administered at a facility could be used as an audit examination for the next initial licensing class, thus saving valuable resources associated with preparing audit examinations. The NRC staff agreed to further investigate this issue.

REQUALIFICATION ISSUES

IP-71111.11 Changes

The NRC staff updated attendees on the status of a proposed revision to IP-71111.11, "Licensed Operator Requalification Program." Although a revision to IP-71111.11 has been actively worked on since the last public meeting, efforts have currently been suspended due to other higher priority activities. The NRC staff informed the attendees that a revision may be completed in 2010, at which time the attendees will have the opportunity to review the new revision consistent with current NRC practices for communicating reactor oversight process issues.

FOCUS GROUP ISSUES

Promoting Consistency Between Regions

A representative from NEI informed the staff that an Executive Group consisting of chief nuclear officers has been established to examine the overall operator licensing process. The NEI representative stated that the Executive Group will be reviewing items of interest, including: (1) the consistency and predictability of the licensing examination process, (2) the resources required to train license applicants and develop NRC examinations, and (3) success rates for licensing individuals who enter a licensing class (i.e., "throughput").

PUBLIC QUESTIONS AND ANSWERS

The ANS 3.5 Standards Committee representative informed the attendees that efforts have begun to consider revisions to ANSI/ANS-3.1, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants," and ANSI/ANS-3.4, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants."

The Western Technical Services representative informed the attendees of the availability of examination outline development software that has been certified by the boiling water reactor owner's group.

The PROS representative discussed taking action with regard to licensed operator medical issues, and emphasized the importance of maintaining an appropriate number of properly qualified training instructors for operating nuclear reactors, especially considering the potential impact of new reactors on training instructor resources.

SUMMARY / CONCLUSION / ACTION ITEM REVIEW

In summary, the NRC staff and attendees agreed that the meeting was useful, and that communications between the staff and the FG are good, but with room for improvement. A future meeting date for July/August 2009 was discussed.

Action Items

1. NEI will submit a numbered document regarding simulator scenario based testing.

2. The NRC staff will review the FAQ on the use of open reference questions on initial licensing examinations.

3. An operator licensing feedback question will be submitted by the FG regarding delaying the public release of NRC examinations.

4. The NRC staff will provide INPO comments on license eligibility and ACAD 09-001.

5. A FG representative will provide Region II examples of examination outline errors.

Response to NRC Comments on SBT White Paper

Rev. 0, 3/18/09

Summary

ADAMS Accession No. ML083290481 dated December 30, 2008 documents the NRC's comments and recommendations regarding the SBT Methodology White Paper of September 16, 2008. This document provides the NEI Licensed Operator Focus Group (LOFG) response to the comments. Formatting below includes the original NRC comment number and comment, followed by the LOFG response in italics.

Comments and Response

Comment 1 – The staff generally agrees with the Attachment 1 "checklist" concept but recommends that the checklist be limited to simulator performance-related items. The performance testing of a plant-referenced simulator is a separate technical matter not to be confused with the qualitative and quantitative scenario attributes required in Appendix D, "Simulator Testing Guidelines," of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." The staff recommends that the WP Attachment 1 be replaced with "Recommended Revised Attachment 1" found at the end of these comments since it resolves many of the technical concerns related to implementation of SBT as simulator performance test.

LOFG Response: LOFG agrees with the NRC comment and will adopt their proposed checklist. Wording of appropriate paragraphs within the white paper will be revised as necessary to ensure alignment with the new checklist.

Comment 2 – Section 2.0, page 2, second paragraph, next to the last sentence: The staff recommends this sentence be deleted or modified to reflect that proper conduct of SBT is intended to alleviate the need for post-scenario evaluation since the performance of the simulator is being evaluated (compared to actual or predicted reference plant performance) during the conduct of the SBT.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation. The LOFG intent that validation and SBT are parallel activities that do not require post-scenario evaluation is still maintained intact and is therefore acceptable to the LOFG.

ENCLOSURE 4

Comment 3 – Section 2.0, page 2, second paragraph, the last sentence: The staff recommends that this sentence be deleted since it is highly speculative in nature. It remains to be seen whether or not the SBT methodology will actually identify and correct more problems than any other form of simulator performance testing. To date, the proposed SBT methodology has only been demonstrated on one plant-referenced simulator (i.e., Robinson, in July 2006). The staff acknowledges that the methodology holds the potential to uncover simulator fidelity issues otherwise undetected since an integrated plant response is being evaluated rather than a specific response in a stand-alone testing scheme.

LOFG Response: LOFG concurs with the scope and comment and revise this sentence to be less speculative in nature..

Comment 4 – Section 3.2.3, page 4: The staff recommends that the language make clear that simulator scenarios used for performing control manipulations that affect reactivity to establish eligibility for an operator's license are those associated with 10 CFR 55.31(a)(5). For example: "Scenarios used to satisfy the reactivity control manipulation requirement in 10 CFR 55.31(a)(5)."

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 5 – Section 3.3, page 4, the first sentence: The staff is concerned that exclusive use of unlicensed test personnel (e.g., SRO certified instructors only with no licensed operators) during the conduct of SBT could result in less than adequate validation and confirmation of the simulator's fidelity. The staff recommends that the wording be changed from "and/or" to "and" to ensure that licensed operators participate in the conduct of SBT.

LOFG Response: LOFG strongly disagrees with this comment. Instructors responsible for the training of licensed personnel, as noted in ANSI 3.1-1993 for example, "…shall hold or shall have held a Senior Operator's license for a similar unit or shall have been certified for equivalent senior operator knowledge" (i.e. be SRO Certified). INPO NANT guidelines provide structure and content for instructor training which, along with instructor performance, is evaluated during accreditation team visits. Finally, licensed individuals' primary responsibility and focus is the safe and reliable operation of the power plant and as such are often a difficult commodity to obtain for non-plant tasks, which would severely restrict the ability to conduct SBT in a timely manner. It is therefore unnecessary to require licensed SROs to conduct SBT. The current wording of this section is acceptable and follows current industry practice as well as the practice utilized during the NRC-attended SBT pilot at Robinson in July of 2006 with no expressed issues or concerns.

Comment 6 – Section 3.4, page 4, the first sentence: The staff recommends that "key parameters" be defined in the WP as: "Key parameters are the parameters necessary for a full understanding or explanation of the expected plant response to which the simulator has been designed to respond." Although ANSI/ANS-3.5-1998, Appendix B, "Guidelines for the Conduct of Simulator Operability Testing," provides examples of parameters to be recorded, the actual number of key parameters to be recorded during the conduct of SBT is predetermined by the nature of the event(s).

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 7 – Section 3.5, page 4, the first sentence: The 1998 standard requires, in paragraph 3.1.1 (Real Time and Repeatability), the simulator to operate in real time while conducting any of the evolutions required by the standard. This applies to SBT evolutions as well. The simulator scenario must be run in real time until the scenario termination point is reached. The staff recommends that the sentence be modified to reflect that the simulator must run in real time during the conduct of simulator SBT since time-based relationships, durations, rates, and dynamic performance are important for demonstrating fidelity. The staff does not object to using the simulator's "freeze" feature to stop the simulation to evaluate parameters and performance, as long as the simulator continues to support the SBT in a continuous manner, without any mathematical model or initial condition changes. Bear in mind that subsequent test results from performance of the same SBT without using "freeze" must be repeatable.

LOFG Response: LOFG agrees with this comment so long as the use of freeze is still allowed to the extent necessary to validate simulator performance. LOFG understands and agrees with the need to ensure real-time performance of the simulator and the need for repeatability. Wording of this section will be revised appropriately to capture these points as well as the NRC's comments.

Comment 8 – Section 3.7, page 5, the third sentence: The staff recommends that the sentence be modified, for simulator SBT purposes, to state that test personnel, as a minimum, (1) must verify parameters, alarms, and automatic actions directly related to a scenario event, a malfunction, and or an operator input, and (2) are not expected to verify non-relevant alarms and automatic actions, unless they are unexpected.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 9 – Section 3.9, page 5: The staff recommends that the sentence be modified to reflect that the response of the simulator resulting from operator action, no operator action, improper operator action, automatic reference unit controls, and inherent operating characteristics shall be realistic and shall not violate the physical laws of nature, such as conservation of mass, momentum, and energy, within the limits of the verification, validation, and performance testing criteria of the standard.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 10 – Section 3.10, page 5: To prevent any confusion, the staff recommends that the sentence be modified to reflect paragraph 4.4.3.2, "Simulator Scenario-Based Testing," of the 1998 standard. The standard does not include the term "tasks." The inclusion of the term "tasks" could be misconstrued to be more limiting than that allowed on the referenced plant since there may be more than one predetermined way for an operator to perform a given task. Furthermore, the regulation speaks to the performance of significant control manipulations being completed without procedural exceptions rather than tasks being completed without exceptions. During the conduct of SBT, it is the simulator's fidelity and scope, rather than the operator's performance and ability, being assessed as sufficient and adequate for use.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 11 – Section 3.12, page 5, the first sentence: The staff recommends that the sentence be modified to state that test personnel must verbally communicate expected plant response, trends, parameter/set point values, and primary alarms they observe throughout each event of the scenario. This is a critical implementation element of the SBT methodology since clear and deliberate verbal communications at all times ensures that expected test results are observed and validated. The staff observed strong communications among simulator test personnel during the conduct of the Robinson SBT demonstration. The staff recommends this expectation be carried forward as guidance in the SBT methodology.

LOFG Response: LOFG requests clarification for the Staff's request to substitute the term "articulate" with "verbalize". During the Robinson SBT demonstration, instructors used both verbal and non-verbal cuing to validate simulator performance, which is why the term "articulate" was used in this section.

Comment 12 – Section 3.15, page 6: The staff recommends that the terminology be changed to "SBT Test Results Package" since the documentation must be retained for four years after the completion of each performance test or until superseded by updated test results.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 13 – Section 3.16, page 6: The staff recommends the sentence be modified to reflect that an electronic copy of the "SBT Test Results Package" is acceptable for record retention purposes.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 14 – Section 3.19, page 7, the first sentence: The staff recommends the sentence be modified to state that test personnel must document discrepancies in accordance with site simulator configuration management procedures.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.

Comment 15 – Section 4.0, page 7: The staff recommends updating the WP references once NRC staff comments have been resolved. One minor editorial comment for Item 4.4 – the term "Use" needs to be capitalized in the standard's title. Also, regarding item 4.5, the correct ADAMS number is ML073240964.

LOFG Response: LOFG agrees with the comment and will revise this sentence per the NRC recommendation.