April 12, 2011

Technical Specifications Task Force (TSTF)
11921 Rockville Pike, Suite 100
Rockville, MD 20852

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING TSTF-508, REVISION 1, "REVISE CONTROL ROOM HABITABILITY ACTIONS TO ADDRESS LESSONS LEARNED FROM TSTF-448 IMPLEMENTATION" (TAC NO. MD9433)

Dear Members of the TSTF:

By letter dated June 18, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091690643), you submitted Traveler TSTF-508, Revision 1, "Revise Control Room Habitability Actions to Address Lessons Learned from TSTF-448 Implementation," to the U.S. Nuclear Regulatory Commission (NRC) staff for review and approval.

The Notice for Comment for TSTF-508, Revision 1, was published in the *Federal Register* on October 15, 2009. The TSTF provided comments by letter dated November 16, 2009 (ADAMS Accession No. ML093210391). On July 12, 2010, the NRC staff provided to the TSTF a request for additional information (RAI) on TSTF-508 by electronic message. The TSTF responded to the NRC RAI by letter dated October 11, 2010 (ADAMS Accession No. ML102850220).

At a public meeting between the NRC and the TSTF held on February 9, 2011 (meeting summary is in ADAMS at Accession No. ML110560630), the NRC staff informed the TSTF that additional information is still needed. Enclosed are the NRC staff's RAI questions.

If you have any questions, please contact me at (301) 415-1774 or michelle.honcharik@nrc.gov.

Sincerely,

/RA/

Michelle C. Honcharik, Senior Project Manager
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 753

Enclosure: RAI

cc: See next page

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Sincerely,

/RA/

Michelle C. Honcharik, Senior Project Manager
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 753

Enclosure: RAI

cc: See next page

ADAMS Accession No: ML110890817 (*by memo to PLPB ML110470577)

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DISTRIBUTION FOR REQUEST FOR ADDITIONAL INFORMATION REGARDING TSTF-508, REVISION 1, “REVISE CONTROL ROOM HABITABILITY ACTIONS TO ADDRESS LESSONS LEARNED FROM TSTF-448 IMPLEMENTATION” (TAC NO. MD9433):

PUBLIC
PLPB Reading File
RidsNrrAdro Resource
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RidsAcrsAcnwMailCenter Resource
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RidsNrrLADBaxley
RidsNrrDprPspb Resource
RidsNrrDirsItsb Resource
RidsNrrDraAadb Resource
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Hamm, Matthew
Chernoff, Harold
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REQUEST FOR ADDITIONAL INFORMATION (RAI)

TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-508, REVISION 1

"REVISE CONTROL ROOM HABITABILITY ACTIONS TO ADDRESS LESSONS LEARNED

FROM TSTF-448 IMPLEMENTATION" (TAC NO. MD9433)

1. Chemical hazards limits in Required Action B.3

TSTF-508 proposes removing language that refers to limits on exposure to chemical and smoke hazards. Removal of language referring to limits on exposure to smoke hazards is justified. Removal of language referring to limits on exposure to chemical hazards is not justified.

The statement in the October 11, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102850220), RAI responses that there are no quantifiable limits for chemical hazards is not entirely correct. Regulatory guides provide methods acceptable to the NRC staff for meeting the regulations. In this case Regulatory Guide (RG) 1.78, "Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," provides toxicity limits for meeting Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix A, General Design Criterion (GDC) 19, which is the basis for Specification 3.7.10, "Control Room Emergency Ventilation System (CREVS)."

The Nuclear Energy Institute (NEI) document NEI 99-03, Revision 0, "Control Room Habitability Assessment Guidance" (ADAMS Accession No. ML020600236), provides industry guidance for control room habitability and was endorsed in part by the NRC staff in RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors" (ADAMS Accession No. ML063560144). NEI 99-03, Section 4.1.3, "Toxic Limits," states:

> For the purposes of conducting control room habitability evaluations, the IDLH [immediately dangerous to life and health] limits should be considered as toxicity limits for two-minute exposures.

NEI 99-03, Section 9.3.3.2, "Assessment Frequency," states:

> Compare the baseline test measured in-leakage to the design basis analysis in-leakage assumption for both radiation and toxic gas considerations.

NEI 99-03, Section 9.4.3, "Toxic Chemical Control," states:

> Each licensee should ensure that its chemical controls include a review of new chemicals brought on-site and that this review considers the impact of a potential release on the control room. It is recommended the controls also provide guidance regarding acceptable quantities or container sizes for chemicals approved for use on-site.

Chemical IDLH limits are met by conducting habitability evaluations. These include verifying that in-leakage measurements are consistent with those used in the chemical analysis and

determining acceptable quantities of chemicals that are allowed to be onsite. These methods of verifying limits are consistent with what is done for radiological sources.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that references to limits on exposure to chemical hazards are appropriate for generic guidance to licensees regarding the format and content of the CREVS technical specification (TS).

Please revise the proposed language to maintain reference to limits to chemical hazards in Required Action B.3.

2. Extension of the use of mitigating actions to Modes 5 and 6

TSTF-508 proposes the extension of the use of mitigating actions to Modes 5 and 6 when one or more CREVS trains is inoperable due to an inoperable control room envelope (CRE) boundary. The NRC staff believes the extension of the use of mitigating actions to Modes 5 and 6 is not adequately justified and is not warranted for the following reasons:

- The regulation at Subpart H of 10 CFR Part 20, "Standards for Protection Against Radiation," provides the requirements for respiratory protections and controls to restrict internal exposure in restricted areas. Specifically, 10 CFR 20.1701 states that licenses shall use, to the extent practicable, process or engineering controls to control the concentration of radioactivity in the air. Use of other controls as described in 10 CFR 20.1702 is only allowed by regulation when it is not practicable to apply process or other engineering controls.

- NEI 99-03, Appendix F, "Compensatory Measures Allowable On An Interim Basis," Page F-1, states:

  > The use of SCBA [self-contained breathing apparatus] and KI [potassium iodide] has been determined to be acceptable for addressing control room envelope integrity in the interim situation until the licensee remediates the issue. However, use of SCBA or KI in the mitigation of situations where in-leakage does not meet design basis limits is not acceptable as a permanent solution. <u>10 CFR 20.1701 essentially says that engineering/process controls shall be used to the extent practical. If not practical, then 10 CFR 20.1702 methods should be used. Therefore, the use of SCBAs should be a last resort</u>. [emphasis added]

- The use of KI and SCBA is not without risk. The allowance to use KI and SCBA was not previously extended to Modes 5 and 6 because another practical control (stopping fuel movement) existed. The NRC staff does not believe that the proposed compensatory measures are appropriate given that the process control of stopping fuel movement is available.

Please revise the proposed changes to remove the extension of the use of mitigating actions to Modes 5 and 6.

3. Performance and assessment of the differential pressure test

TSTF-508 proposes to revise the last sentence of Part d of the Control Room Habitability Program from: "The results shall be trended and used as part of the [18] month assessment of

the CRE boundary." to: "The results shall be trended and used as part of the periodic assessment of the CRE boundary." The justification for this change states that the referenced assessment is the 36-month assessment required by RG 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors."

In TSTF-448, Revision 3, the NRC staff approved the deletion of an 18-month differential pressure test for the CRE from the Surveillance Requirements. The NRC staff approved this deletion in part because the Control Room Habitability Program proposed by TSTF-448, Revision 3, contained a similar test. The NRC staff's intent was that the differential pressure test would still be performed every 18 months and the results would be used to assess the control room boundary habitability after each test. The NRC staff believes performance of the differential pressure test and assessment of the results after each test are necessary to obtain indication of any possible CRE degradation between tracer gas tests.

Please provide a revised method to clarify the expectations for performance and assessment of the differential pressure test. As discussed at the February 9, 2011, public meeting between the TSTF and the NRC staff, the NRC staff proposes that the following sentence replace the last sentence of Part d of the Control Room Habitability Program: "The results shall be trended and assessed every [18] months as part of the assessment of the CRE boundary."