

# Control Room Habitability Technical Specifications

TSTF-448

April 20, 2006

*Technical Specification Task Force and  
NEI Control Room Habitability Task Force*

# Presentation Outline

- Issues, Analysis, and Proposed Resolutions Regarding the NRC's March 2006 Letter to the TSTF Presenting Proposed Tech Specs

# Background

- March 2002 – Draft Guide 1114 issued - starting point for TSTF-448
- December 2002 – TSTF-448 Rev 0 submitted
- June 2003 – GL 2003-01 issued
- July 2003 – CRH TF / NRC Meeting
- August 2003 – TSTF-448 Rev 1 submitted
- December 2003 – RAIs on Rev 1 received

# Background

- March 2004 – RAI responses and draft TS submitted
- Summer 2004 – NRC and individual Licensee interaction on CRH TS
- January 2005 – NRC response to March 2004 letter and draft TS received
- April 2005 - Draft responses to NRC

# Background

- May 26, 2005 – Industry / NRC meeting
- August 18, 2005 – Submittal of TSTF 448 revision 2
- December 28, 2005 – NRC comments on revision 2
- March 10, 2006 – NRC transmits a version of TSTF-448 acceptable to the Staff

# Introduction

- Many licensees committed to adopting TS based on TSTF-448 in their response to GL 2003-01
- Need to come to resolution to allow licensees to fulfill their commitments under GL 2003-01

# Introduction

- Progress has been made
- March 2006 letter reflects several improvements
  - Delta P test requirements simplified
  - Increased time for shutdown
  - Inleakage acceptance criterion outside of tech specs

# Introduction

- Industry accepts the majority of the proposal
- A few items remain to be resolved
- Industry plans to develop and submit Revision 3 of TSTF-448 after this meeting in order to resolve this issue

# Introduction

- The most significant issue is the NRC proposal for a requirement in Tech Specs to implement RGs 1.78, 1.196 and 1.197 in a CRE Program
- Industry believes this approach is inappropriate and will result in a very complicated, cumbersome, and plant-specific technical specification and will prevent the efficient use of the CLIIP

# Introduction

- After so much has been accomplished, it's important to not let this issue prevent a generic resolution of the control room habitability concern

# Issue Summary

- Industry has identified 5 issues from the December 2005 letter and March 2006 tech specs that require discussion and resolution
  - Program commitment to CRH Reg Guides
  - 60 day shutdown requirement
  - $\Delta P$  test requirements / measurements
  - Smoke challenges
  - Bases clarifications

# Discussion of Issues

# Commitment to CRH RGs

- NRC Proposed CRE Habitability Program
  - “A Control Room Envelope (CRE) Habitability Program shall be established and implemented in accordance with the guidelines contained in Regulatory Guide 1.196,...1.197,...and...1.78”

# Commitment to CRH RGs

- The March 2006 letter added a general commitment to RG 1.197 beyond the specific references in Paragraph c and Paragraph d
- The March 2006 letter added a general commitment to RG 1.196
- The March 2006 letter added a general commitment to RG 1.78

# Commitment to CRH RGs

## ■ Concerns

- It is not consistent for the Tech Specs to have a general commitment to a Reg Guide
  - ◆ Reg Guides are one way to meet the regulations, not the only way
  - ◆ Reg Guides are written to be guidance, not prescriptive requirements
  - ◆ Other TS references to Reg Guides are to specific aspects, such as frequencies or test methods, as was proposed in Paragraphs c and d.

# Commitment to CRH RGs

## ■ Concerns

- ◆ Each licensee will determine their list of exceptions, which we believe will be a long list, which the NRC will have to review on a plant-by-plant basis
- ◆ The number of exceptions taken by plants will result in a very complicated, cumbersome, and non-generic technical specification

# Commitment to CRH RGs

## ■ Concerns

- ◆ This will prevent the efficient use of the CLIIP process because of the need for plant-by-plant technical review

# Commitment to CRH RGs

## ■ Concerns

- ◆ Commitments to Reg Guides are typically in the UFSAR or QA Plan where exceptions can be managed under licensee-controlled programs
- ◆ The Reg Guides frequently reference other Reg Guides and documents; do these other documents then become binding?

# Commitment to CRH RGs

## ■ Concerns

- RG 1.196 and RG 1.197 are out of date.
  - ◆ They reference NEI 99-03, Rev. 0, and the current version is Rev. 1.
  - ◆ References in the RGs to specific sections of NEI 99-03 are incorrect
  - ◆ Many licensees committed in GL 2003-01 to performing testing in accordance with NEI 99-03, Rev. 1.
  - ◆ The NRC has previously stated that Rev. 1 is superior to Rev. 0

# Commitment to CRH RGs

- Reg Guide 1.197
  - TSTF-448, Rev. 2, and the NRC March 2006 letter referenced RG 1.197 for frequency of assessment of habitability (Paragraph c) and for inleakage testing methods and frequency (Paragraph d)
  - Industry believes that the current wording in TSTF-448, Rev. 2 (Paragraph c and d) includes the key aspects of RG 1.197 (Regulatory Position C.1) and that a general commitment is not necessary

# Commitment to CRH RGs

- Reg Guide 1.196
  - It appears that the addition of RG 1.196 and RG 1.78 was based on the December 2005 NRC letter, Comment 23, in order to provide assurance of protection against toxic gas and fire by-products
    - ◆ The proposed Program already contains a requirement to address these hazards

# Commitment to CRH RGs

- Reg Guide 1.196
  - The proposed TS Bases reference RG 1.196, Section 2.7.3, for mitigating actions
  - RG 1.196 and RG 1.78 are not referenced in the draft Safety Evaluation as a basis for acceptability

# Commitment to CRH RGs

- Reg Guide 1.196
  - General reference to RG 1.196 will lead to a large number of exceptions. For example:
    - ◆ RG 1.196 references Rev. 0 of NEI 99-03 instead of Rev. 1, which will lead to a large number of exceptions
    - ◆ RG 1.196 references Rev. 1 of RG 1.78 and most plants are licensed to Rev. 0
    - ◆ RG 1.196 references 1.52, to which many plants took many exceptions. These exceptions would need to be listed in the Program

# Commitment to CRH RGs

- Reg Guide 1.196
  - ◆ RG 1.196 states that the required minimum staffing of control room operators qualified in SCBA use should be clean shaven. Is it a Tech Spec violation if an operator doesn't shave one morning?

# Commitment to CRH RGs

- Reg Guide 1.196
  - General reference to RG 1.196 will lead to a large number of exceptions. For example:
    - ◆ RG 1.196 contains specifics on programs that are otherwise under licensee control such as configuration control, training, maintenance, and degraded and nonconforming conditions
    - ◆ This program will put parts of those licensee programs under Tech Spec control. The dividing line is unclear, confusing, and inconsistent with the regulations

# Commitment to CRH RGs

- Reg Guide 1.78
  - Most plants are committed RG 1.78, Rev. 0, and RG 1.95 in their UFSAR.
    - ◆ Many plants have extensive exceptions to RG 1.78
  - The March letter references RG 1.78, Rev. 1
  - RG 1.78 is not used in the draft safety evaluation to demonstrate acceptability of the approach

# Commitment to CRH RGs

## ■ Reg Guide 1.78

- RG 1.78 references specifics of calculation, specific computer codes, and details that inappropriate for a Technical Specification requirement
- The scope of RG 1.78 addresses emergency planning, which is inappropriate for a Tech Spec requirement

# Commitment to CRH RGs

- Reg Guide 1.78
  - There is no regulatory justification given for requesting plants to adopt a new revision and to move the commitment from the UFSAR to the Technical Specifications

# Commitment to CRH RGs

- We believe that the proposed Paragraphs a-g provide a sufficient basis for the Program and encompasses the significant aspects of the Reg Guides

# Commitment to CRH RGs

- Industry proposal
  - The existing reference to RG 1.197 is sufficient to remove the general reference to 1.197
  - Remove the general reference to RG 1.196 from the Program. Retain the reference in the Bases
  - Do not move the commitment to RG 1.78 from the UFSAR to the Tech Specs

# 60 Day Shutdown Requirement

- NRC proposal
  - 60 day shutdown if in-leakage exceeds limit and not restored
  - NRC December 2005 letter stated that, if needed, licensee could “seek a case-specific extension utilizing the normal license amendment process.”

# 60 Day Shutdown Requirement

## ■ Concerns

- Sixty days is not be enough time to process a normal license amendment
- Administrative amendment time constraints may force licensee into an emergency technical specification amendment

# 60 Day Shutdown Requirement

- Industry Proposal
  - 90 days to shut down if in-leakage exceeds limit and not restored
- Justification
  - It takes approximately 90 days for an aggressively pursued normal license amendment
  - The public comment period for a normal amendment can take up to two months

# 60 Day Shutdown Requirement

- The safety significance of the issue does not warrant an emergency or exigent amendment because the control room occupants are protected

# $\Delta P$ Testing Requirements

- NRC proposal (5.6.18.e)
  - “...The results shall be trended and compared to the pressure measurements at all locations taken during the previous CRE inleakage testing.” (emphasis added)
- Concerns
  - Requiring measurements at all locations taken during the previous test would involve many measurements

# $\Delta P$ Testing Requirements

- The resulting number of required measurements is not necessary for trending barrier health

# $\Delta P$ Testing Requirements

- Industry proposal
  - “Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREFS, operating at the flow rate required by the VFTP, at a Frequency of [18] months on a STAGGERED TEST BASIS. The results shall be trended and used as part of an assessment of the CRE boundary.”

# $\Delta P$ Testing Requirements

- Industry proposal
- Justification
  - Will result in at least one delta P measurement between the control room and every adjacent area
  - Assessing the current results with those obtained during the previous delta-P tests will allow evaluation of CRE boundary

# Smoke Challenges

- NRC proposal (5.5.18.f)
  - Paragraph f address quantitative limits, but states, “unfiltered air inleakage limits for hazardous chemical and smoke challenges...”
- Concerns
  - No quantitative limits for smoke have been established. The amount of smoke that can be tolerated is a function of many factors

# Smoke Challenges

- Industry proposal
  - Remove the reference to “smoke” in Paragraph f
  - Assessment of smoke is addressed in the Program and will be addressed in the subparagraphs as appropriate

# Smoke Challenges

## ■ Justification

- Section 2.6 of NRC RG 1.196 states that there is no regulatory limit on the amount of smoke allowed in the control room. Therefore, air inleakage limits for smoke challenges can not be quantified. Instead, NRC RG 1.196 endorses a qualitative assessment method for evaluating the smoke challenge.

# Bases Clarifications

- NRC proposal (Bases for Actions B.1-3)
  - ...“The mitigating actions should also address maintaining temperature and relative humidity within limits, and physical security”...

# Bases Clarifications

## ■ Concerns

- Temperature and humidity requirements are specified elsewhere. In NUREG-1431 it is Specification 3.7.11, "Control Room Emergency Air Temperature Control System." This system also controls relative humidity in the control room.

# Bases Clarifications

## ■ Concerns

- References to physical security do not appear anywhere in the Tech Spec Bases
- Reference to physical security should be removed. The physical security aspects of any mitigating action will be evaluated under the appropriate security guidelines. Stating that the preplanned mitigating actions must consider physical security creates a significant conflict as preplanned actions would typically be in the form of procedures used by plant workers, but the physical security aspects must be kept in secure documents with limited distribution.

# Bases Clarifications

- Industry proposal
  - Delete the sentence
- Justification
  - Physical security is handled under other regulatory programs and temperature and humidity are handled under another Technical Specification

# Bases Clarifications

- NRC proposal
  - SR 3.7.X.4 Basis – “...The CRE boundary is considered OPERABLE when unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences.”
- Concern
  - Not consistent with LCO bases statement

# Bases Clarifications

- Inconsistency (cont'd)
  - ◆ LCO: Operability ~ operator dose and protection from smoke and hazardous chemicals
  - ◆ SR: Operability ~ CRE inleakage. SR Bases then go on to state that Operability can be restored by revising the analysis
- Industry proposal
  - “This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses.”

# Bases Clarifications

- Justification
  - Retains the intent of the sentence (i.e., failure to meet the SR is failure to meet the LCO) while avoiding inconsistency or redefining Operability

# Summary of Agreements and Differences