

Proprietary



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 10, 2009  
U7-C-STP-NRC-090199

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

South Texas Project  
Units 3 and 4  
Docket Nos. ~~52-012 and 52-013~~ 52-001  
Submittal of Meeting Presentation Materials

On October 14, 2009, STPNOC met with the NRC staff to discuss the Aircraft Impact Analysis (AIA) Amendment to the Advanced Boiling Water Reactor (ABWR) DCD. The material presented during this meeting contained Proprietary Information per 10 CFR 2.390 (SUNSI) and is included as Attachments to this letter. Attachment 1 contains a public version of the presented material. When separated from this letter, Attachment 1 does not contain Proprietary Information. Attachment 2 contains Proprietary Information per 10 CFR 2.390 since it meets the definition of Sensitive Unclassified Security Information.

When separated from Attachment 2, this letter does not contain Proprietary Information.

There are no commitments in this letter.

If there are any questions regarding this letter, please contact me at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 11/10/09

A handwritten signature in black ink, appearing to read 'Scott Head'.

Scott Head  
Manager, Regulatory Affairs  
South Texas Project Units 3 & 4

fjp

Attachments

1. Public version of AIA Amendment presentation material.
2. SUNSI version of AIA Amendment presentation material

D050  
D091  
NRC

STI32573126

cc: w/o attachments and enclosure except\*  
(paper copy)

Director, Office of New Reactors  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

Regional Administrator, Region IV  
U. S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011-8064

Kathy C. Perkins, RN, MBA  
Assistant Commissioner  
Division for Regulatory Services  
Texas Department of State Health Services  
P. O. Box 149347  
Austin, Texas 78714-9347

Alice Hamilton Rogers, P.E.  
Inspection Unit Manager  
Texas Department of State Health Services  
P. O. Box 149347  
Austin, Texas 78714-9347

C. M. Canady  
City of Austin  
Electric Utility Department  
721 Barton Springs Road  
Austin, TX 78704

\*Steven P. Frantz, Esquire  
A. H. Gutterman, Esquire  
Morgan, Lewis & Bockius LLP  
1111 Pennsylvania Ave. NW  
Washington D.C. 20004

\*George F. Wunder  
\*Tom Tai  
Two White Flint North  
11545 Rockville Pike  
Rockville, MD 20852

(electronic copy)

\*George Wunder  
\*Tom Tai  
Loren R. Plisco  
U. S. Nuclear Regulatory Commission

Steve Winn  
Eddy Daniels  
Joseph Kiwak  
Nuclear Innovation North America

Jon C. Wood, Esquire  
Cox Smith Matthews

J. J. Nesrsta  
R. K. Temple  
Kevin Pollo  
L. D. Blaylock  
CPS Energy



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# Presentation Topics

- Introduction, Background and Purpose
- Overview of ABWR Analysis for Aircraft Impact
- Review of ABWR Design Changes to Meet AIA rule
- Details of Structural Analysis
- Details of Added Core Cooling Design Features
- Summary and Impact of Design Changes
- Schedule and Path Forward



# Introduction, Background, and Purpose

Scott Head

STP 3&4 Regulatory Affairs Manager

STPNOC

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# Introduction

- Purpose of meeting
  - Provide overview to the NRC of the ABWR DCD Amendment submitted on June 30, 2009.
  - Describe content of the amendment and the basis for the design changes associated with the amendment
- Desired outcomes
  - Provide any additional information NRC needs for the review
  - Define the process and schedule for the review



# Introduction

- STPNOC Attendees (To be modified)
  - Scott Head – Regulatory Affairs Manager, STPNOC
  - Bill Stillwell – PRA, STPNOC
  - Tom Veitch – Licensing Specialist, TANE
  - Nirmal Jain – ABWR Systems Engineering Manager, WEC
  - Subhash Chandra – ABWR Structural Analysis Manager, WEC
  - Steve Floyd – AIA Consultant, ERIN Engineering
  - Joe Rashid – Structural Engineer, Anatech Research
  - Jim Nowell – Operations Engineer, WEC
  - Fred Hayes – Licensing Engineer, WEC
  - Bob Quinn – ABWR Licensing Manager, WEC
  - Al Gutterman – Morgan Lewis



# Background and Overview

- ABWR DCD Amendment submitted on June 30, 2009
- Only the changes needed to meet the AIA rule as issued by the Commission in February 2009, are included in the DCD Amendment
- *Withheld per 10 CFR 2.390*



# Overview of ABWR Analysis for Aircraft Impact

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# AIA Rule

## Final rule states:

- Identify and incorporate design features and functional capabilities to ensure:
  - The reactor core remains cooled, or the containment remains intact; and
  - Spent fuel cooling or spent fuel integrity is maintained
- Evaluation to consider physical damage, shock effects and fire effects resulting from consideration of an impact of an aircraft specified by the NRC
- Use realistic analyses
- Reduced use of operator actions
- Aircraft impact is considered a beyond design basis event



# Analysis Approach

- *Withheld per 10 CFR 2.390*

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# Analysis Approach

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# ABWR Layout-Typical

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# Compliance with AIA Rule for US ABWR Design

- AIA rule requirement is met by maintaining core cooling capability
- *Withheld per 10 CFR 2.390*
- SFP maintains structural integrity
  - No loss of inventory from the SFP
  - *Withheld per 10 CFR 2.390*



# Results of AIA Analysis for US ABWR Design

- Detailed structural analysis shows:
  - primary containment structural integrity is maintained
  - SFP maintains structural integrity
    - No loss of inventory from the SFP
- *Withheld per 10 CFR 2.390*



# Results of AIA Analysis for US ABWR Design *(continued)*

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# Overview of ABWR Design Changes to Meet AIA Rule

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# Existing Features Credited in AIA

- *Withheld per 10 CFR 2.390*



# Key Structural Features

- *Withheld per 10 CFR 2.390*



# Design Changes for Core Cooling

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# Design Changes for Core Cooling

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# Strike Evaluation Summary

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# Details of Structural Analysis

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# Structural Analysis for Integrity of SFP and Primary Containment

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# Structural Analysis Results *(continued)*

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# RB Interior Walls at

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# RB Interior Walls at

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# Details of Added Core Cooling Design Features

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# Evaluation of ABWR DCD Design for Core Cooling

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# Options Considered for Core Cooling

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# Selection of Design Enhancements is an Iterative Process

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# System

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# System

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# Design and Sizing Criteria

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# Design and Sizing Criteria *(continued)*

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# Suppression Pool (SP) Heat Up

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# Instrumentation

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# RPV

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# RPV

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# Summary and Impact of Design Changes

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# Summary of Design Changes

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# Impact of Design Changes on Safety Systems

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# Schedule and Path Forward

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# Schedule

- STPNOC will submit a supplemental ER addressing AIA related ABWR design changes in the DCDAAs by November 13, 2009
- STPNOC will address RAIs on DCDAAs
  - Expected schedule
- STPNOC will support NRC staff needs to complete draft SER and to close any open items
  - Expected schedule



# Path Forward

- Submit ER supplement
- Provide prompt responses to RAIs
- Support completion of draft SER
- Maintain schedule for STP 3&4 COL

