**From:** George Wunder
**To:** <STP_COL@nrc.gov>
**Date:** 2/28/2008 1:54:15 PM
**Subject:** Fwd: Presentations

>>> Willem Mookhoek <mookhoek@sbcglobal.net> 10/10/2007 5:57 PM >>>
Including FSAR Section 1.1 because it talks about formatting. You may certainly use it as you please.

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**Creation Date:** 2/28/2008 1:54:15 PM
**From:** George Wunder

**Created By:** GFW@nrc.gov

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None

**Concealed Subject:** No
**Security:** Standard

## 1.1 Introduction

The information in this section of the reference ABWR DCD, including all subsections and figures, is incorporated by reference with departures and supplements.

STD DEP 1.1-1

STP DEP 1.1-2

### 1.1.1 Format and Content

The information in this subsection of the reference ABWR DCD is incorporated by reference with the following site-specific supplement.

The STP Combined License Application (COLA), Part 2, Final Safety Analysis Report (FSAR) incorporates the ABWR DCD, as applicable, by reference, without repeating the information from the DCD. The reference ABWR DCD refers to U.S. ABWR Design Control Document, GE Nuclear Energy, Revision 4 dated March 1997, as approved in 10 CFR Part 52, Appendix A.

The FSAR, as required by the ABWR design certification rule (10 CFR 52, Appendix A, Section IV.A.2.a), maintains the ABWR DCD organization and numbering system.

In some cases, new sections have been added to accommodate Regulatory Guide (RG) 1.206 guidance. In general, those new sections are designated with an "S". For example, ABWR DCD Tier 2, Section 1.9 is entitled "COL License Information." However, Regulatory Guide 1.206, Section 1.9 is entitled "Conformance with Regulatory Criteria." Therefore, STP Nuclear Operating Company (STPNOC) has incorporated by reference Tier 2, Section 1.9 and has added a new Section 1.9S entitled "Conformance with Regulatory Criteria."

There are two exceptions to the "S" section format convention.

- The individual Chapter 18 sections in Regulatory Guide 1.206 have different titles than the reference ABWR DCD, so they would be candidates for having the "S" designator. However, Regulatory Guide 1.206 requests the description of a Human Factors Engineering (HFE) process consisting of 12 program review elements. The guidance for describing an HFE process at the time the ABWR was certified consisted of eight elements, as described in Appendix 18E and other sections of the FSAR. The approved, and largely equivalent, HFE process information from the ABWR DCD is incorporated by reference.

- DG-1145 identified six new sections in Chapter 19 and STPNOC developed six "S" sections to meet those requirements. Regulatory Guide 1.206 identifies only three sections, but they have different content requirements than DG-1145. STPNOC will incorporate the reference ABWR DCD Chapter 19 sections by reference and supplement that information with one "S" section that provides a roadmap to the location of the information requested by Regulatory Guide 1.206.

The information in each section of the FSAR (or subsection, based on section length and complexity) is presented in the order of text first, tables second, and figures third. Text pages

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The information in each section of the FSAR (or subsection, based on section length and complexity) is presented in the order of text first, tables second, and figures third. Text pages

are oriented in portrait with tables and figures in portrait or landscape. Figure pages may be as large as 11" x 17". Page numbering uses the section number followed by a hyphen and sequential numbering for the page in that section (e.g., the fourth page in section 3.2 is numbered as 3.2-4).

There are primarily two types of new information in the FSAR:

- Departures from the information in the DCD; and
- Supplements to the information in the DCD (including information to address COL License Information Items; information to replace conceptual design information in the DCD; information on siting and site-specific systems, organizations, and programs; and information requested by Regulatory Guide 1.206 that pertains to issues not addressed in the DCD).

The STP 3 & 4 COLA is the reference-COLA (R-COLA) for the ABWR standard design. Departures and supplements are designated as either:

- "standard," meaning that the information is suitable for use in subsequent COLAs (S-COLAs), e.g., STD DEP 6.2-1; and
- "site-specific," meaning that the information is applicable only to STP 3 & 4, e.g., STP DEP 6.2-1.

Each departure is designated with a unique number. For example, STD DEP 17.6-2 is a standard departure in section 17.6 and is the second departure in that section. If departures are in Tier 1, the designation "T1" is added, e.g. STD DEP T1 3.6-1. Site-specific departures begin with "STP" instead of "STD." Departures are numbered based on the primary section that describes the system containing the departure. Because departures can affect many sections, the single departure number is used in all sections affected by the departure. There is a category of administrative departures that correct non-technical errors in the DCD, such as incorrect figure references or typographical errors in equations. These are designated as STD DEP Admin.

In situations where it is necessary to provide both reference ABWR DCD and FSAR information within a paragraph (e.g., for departures from the DCD), the text is presented as follows. Italicized text is used for ABWR DCD information printed in the FSAR. Deleted ABWR DCD information is identified with italicized strikethrough (e.g., ~~*strikethrough*~~) text. Times New Roman <u>underlined unitalicized text</u> is used for new information.

To the maximum extent practical, the FSAR uses the table and figure numbering directly from the reference ABWR DCD. Tables and figures use the same numbering sequence. Tables and figures associated with a #.# section number are numbered in a #.# -# format, and are numbered in the order in which they are addressed in the section (e.g., the third figure discussed in Section 15.4 is numbered "Figure 15.4-3.") To indicate ABWR DCD vs. combined license application (COLA) information within a table or figure, an Arial font is used for ABWR DCD information that is retained and a bold **Arial** font is used for new information. Deleted reference ABWR DCD information in a table or figure is identified by a strikethrough (e.g., ~~*strikethrough*~~).

Revisions to figures are highlighted with bubbles. If a bubble contains information, the contents have been added or revised, if the bubble is empty, previous content has been deleted.

Two complete COLAs are submitted. One includes proprietary and security sensitive information that is subject to a request for withholding from public dissemination. The other has such information redacted and is available for public dissemination. Pages containing proprietary information display the word "PROPRIETARY" at the top of each page and the proprietary information is bracketed. A number designating the category of proprietary information is contained within the brackets. The number designation is in accordance with NRC guidance from the Electronic Submittal Task Force sponsored by the NRC. The redacted version displays a bracketed null space where the proprietary information has been withdrawn. Security sensitive information is appropriately annotated and redacted as well.

Acronyms are used in the FSAR text, tables, and figures to reference frequently used or repeated systems, components, or parameters. Each acronym is defined the first time it is used in a section (X.Y).

The term "incorporated by reference" (IBR) means the words that are incorporated by reference from the ABWR DCD are considered to be part of the COLA as though each word had been retyped into the COLA. A descriptive phrase is used each time the term "incorporated by reference" is used to explain the specific situation. For example,

- "Incorporated by reference with no departures or supplements" specifically indicates that there are no changes whatsoever to the reference ABWR DCD information incorporated by reference.
- "Incorporated by reference with the following departure" indicates that a certain departure from the reference ABWR DCD verbiage is taken.
- "Incorporated by reference with the following supplement" indicates that the ABWR DCD words are included in their entirety, but additional information is also included. Supplements are designated as site-specific or standard, but are not numbered.
- "Incorporated by reference with the following departures and supplements" indicates that both departures (which are numbered) are taken and supplemental information is added.
- Some sections may include both departures and supplements; other sections may include only departures or supplements. The introductory language for each section indicates which case applies.

The FSAR incorporates by reference information from the reference ABWR DCD at the "X.Y" section level. This incorporation by reference includes all lower level subsections within the DCD (e.g., "X.Y.Z" subsections) and all tables and figures associated with the sections, unless otherwise specified.

In general, when a departure affects relatively few paragraphs within a section, only those paragraphs are reproduced within the FSAR identifying the changes in the text of the reference ABWR DCD. In a few cases, sections (e.g. 9.1 and 6C) have enough departures that they are reproduced entirely in italics with ~~*strikeouts*~~ and <u>underlining</u> to indicate the changes. In other

cases, the DCD text within a section is deleted in its entirety and replaced with completely new text. These cases are explained at the beginning of the respective sections.

The reference ABWR DCD contains some information termed "conceptual," indicating that the design was not finalized and was not approved by the NRC. The STP 3 & 4 COLA addresses this conceptual information with supplemental design information. The replacement of conceptual design information with supplemental design information is considered a supplement.

COL License Information Items are addressed in the COL License Information summary subsections which occur at the end of each FSAR section. In a few cases there are COL License Information Items that are not summarized at the end of DCD sections. In these cases, the COLA addresses them as supplements as part of the subsection in which they are located. The information that addresses the COL License Information Items is a supplement.

When the FSAR refers to Section X.Y, Appendix XA, Figure X.Y-1, or Table X.Y-2, the reference is to the associated section, appendix, figure, or table in this FSAR. If there is a reference to a section, appendix, figure, or table in the reference ABWR DCD, the FSAR specifically refers to the DCD, e. g., "DCD Section X.Y". If there is a reference to a section in another part of the COLA, the COLA Part number or title will precede the section referral, e.g., "Environmental Report Section X.Y".

Regulatory Guide 1.206 requests a supplemental list of acronyms for items not included in the referenced certified design. Acronyms are defined the first time they are used in each section (X.Y) of the FSAR, so a list of definitions is unnecessary. There is a list of standard acronyms that are universally understood in this application and do not require definition the first time they are used in a section. That list of standard acronyms is limited to ABWR, DCD, DOE, GE, LWR, NRC, STP, STPNOC, U.S., and USA.

## 1.1.4 Design Process

The following supplement addresses COL License Information Item 1.1.

The project design process is fully described in the STP 3 & 4 Quality Assurance Program Description submitted under separate cover and referenced in FSAR Section 17.5S.

## 1.1.5 Type of License Required

STD DEP 1.1-1

This subsection of the reference ABWR DCD is replaced in its entirety by the following site-specific departure.

The STP 3 & 4 FSAR is submitted in support of the application for a Class 103 Combined License under 10 CFR 52.

The following site-specific supplement is added to this subsection.

The scheduled completion dates (fuel load) for STP 3 & 4 are September 2014 and October 2015 respectively with anticipated commercial operation dates of June 2015 and July 2016, respectively.

## 1.1.6 Number of Plant Units

STP DEP 1.1-2

This subsection of the reference ABWR DCD is replaced in its entirety by the following site-specific departure.

STP 3 & 4 is a two unit facility.

## 1.1.7 Description of Location

The information in this subsection of the reference ABWR DCD is incorporated by reference with the following site-specific supplement.

The STP 3 & 4 site is located in south-central Matagorda County, Texas; west of the Colorado River, 8 miles north-northwest of the town of Matagorda; and approximately 89 miles southwest of Houston as shown on Figure 1.1-3. The facility is co-located with STP 1 & 2, two existing pressurized water reactors, as shown in Figure 1.1-4.

### 1.1.11.1 Design Process to Establish Detailed Design Documentation

The following site-specific supplemental information addresses COL License Information Item 1.1.

The design process utilized to establish the STP 3 & 4 detailed design documentation is described in Subsection 1.1.4.

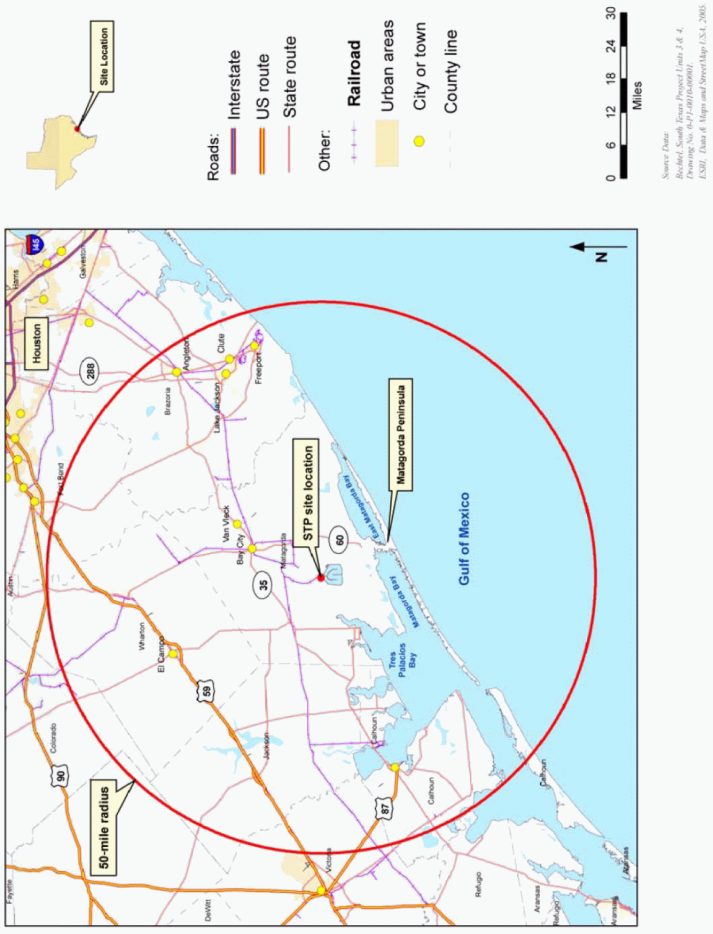


**Figure 1.1-3 Surrounding Area Map**

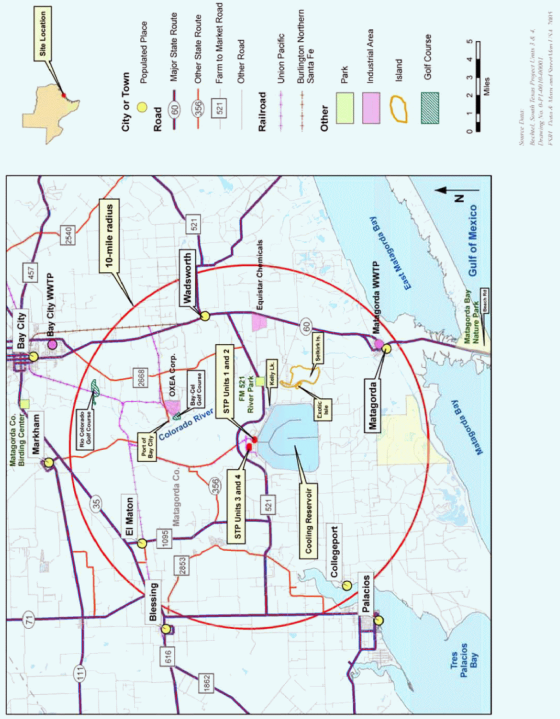


**Figure 1.1-4 10-Mile Radius Map**

# STP Nuclear Operating Company

## ABWR DCWG MEETING with NRC

October 11, 2007

## Units 3 & 4

# COLA

# Introduction

- Greg Gibson - Manager, Regulatory Affairs
- Meeting objectives/agenda
- Introductions

# Meeting Objectives/Agenda

- Present and discuss COLA structure and format
- Present and discuss departures from DCD
- Describe STP 3 & 4 I&C systems

# Introductions

- Bill Mookhoek – STP Licensing Supervisor
- Tim Hurst – Principal I&C Engineer
- Jerry Mauck – Senior I&C Engineer
- Ted Enos – Pres, Certrec Corporation
- Holly Haynes – Certrec Proj Mgr
- Joe Savage – GEH Proj Mgr
- Wayne Massie – GEH Licensing
- John Conly – STP COLA Coordinator

# General COLA Structure

- Part 1 – General and Financial Information
  - Proprietary cost figures
- Part 2 – Final Safety Analysis Report
  - ABWR DCD with departures and supplements
- Part 3 – Environmental Report
- Part 4 – Technical Specifications
  - Clean “changes accepted” version of FSAR Ch 16
- Part 5 – Emergency Plan
  - Modified the approved Station EP to reflect four units

# COLA Structure (cont'd)

- Part 6 – Site Redress Plan
  - Placeholder
- Part 7 – Departures Report
  - Departure classifications separated
- Part 8 – Composite Security Plan
  - Security, Training Qualifications, Safeguards
  - Revised approved plan to reflect four units
- Part 9 – ITAAC
- Part 10 – Certified electronic ABWR DCD

# COLA Formatting

- Described in FSAR Section 1.1
- Additional supplemental “S” sections
- New information in COLA
  - Departures from ABWR DCD
  - Supplements to ABWR DCD

# COLA Formatting (cont'd)

- Incorporated by reference
  - "with no departures or supplements"
  - "with the following departure"
  - "with the following supplement"
  - "with the following departures and supplements"

# COLA Formatting (cont'd)

- Departure numbering
  - Standard (generic) or site-specific
  - Based on primary section reference
  - Same number used throughout FSAR regardless of where referenced
  - Examples
    - STD DEP T1 2.4-1 (generic Tier 1)
    - STD DEP 5.4-1 (generic Tier 2)
    - STP DEP T1 5.0-1 (site Tier 1)
    - STD DEP Admin (all administrative)

# COLA Formatting (cont'd)

- Departures from ABWR DCD
  - Text
    - Departure number noted
    - Strikethrough deleted DCD text (italicized)
    - New (non-italicized) text underlined

## 6.4 Habitability Systems

The information in this section of the reference ABWR DCD, including all subsections, tables, and figures, is incorporated by reference with the following departure and supplement.

STD DEP 9.4-2

### 6.4.4.2 6.4.4.2 Smoke and Toxic Gas Protection

STD DEP 9.4-2

*The main control area envelope is normally exhausted from the recirculation plenum by one of the exhaust fans. Smoke removal is accomplished by ~~starting both~~* operating the *exhaust ~~fans~~* fan(s) *~~at high speed~~ in conjunction with a supply fan. ~~and realigning the dampers for exhausting directly to the exhaust vent.~~* The recirculation damper is closed and the damper in the bypass duct around the air handling unit is opened. *The above changeover is under manual control from the main control room. Operating personnel in the control room exercise this option in response to signals from the smoke detection sensors located in the subject spaces and in the associated ductwork.*

## 6.4.7 COL License Information

### 6.4.7.1 Toxic Gases

The following site-specific supplement addresses COL License Information Item 6.8.

Instrumentation to detect and alarm a hazardous chemical release in the STP 3 & 4 vicinity and to isolate the main control area envelope from such releases is not required based on analyses in Subsection 2.2S.3. No hazardous chemicals with quantities exceeding the criteria of Regulatory Guide 1.78 have been identified.

# COLA Formatting (cont'd)

- Departures from ABWR DCD
  - Tables
    - Departure numbers noted at beginning of section
    - Bold and strikethrough

## 3.9 Mechanical Systems and Components

The information in this section of the reference ABWR DCD, including all subsections, tables, and figures, is incorporated by reference with the following departures and supplements.

| | |
|---|---|
| STD DEP Admin | (Table 3.9-1) |
| STD DEP T1 2.4-3 | |
| STD DEP T1 2.14-1 | |
| STD DEP T1 2.4-1 | (Table 3.9-8, MPL# E11) |
| STP DEP 9.2-5 | (Table 3.9-8, MPL# P41) |
| STD DEP 9.3-2 | (Table 3.9-8, MPL# P56) |

## Table 3.9-1 Plant Events

| B. Dynamic Loading Events[5] | | |
|---|---|---|
| | **ASME Code Service Limit[1]** | **No. of Cycles/Events[2]** |
| 13. Safe Shutdown Earthquake (SSE) at Rated Power Operating Conditions | D[8] | 1 ~~*Cycle*~~ **Event**[4] |

## Table 3.9-8 Inservice Testing Safety-Related Pumps and Valves

| MPL | System | Pump Page No. | Valve Page No. |
|---|---|---|---|
| P56 | Breathing Air System | | 3.9-132 |

# COLA Formatting (cont'd)

- Departures from ABWR DCD figures
  - Departure numbers noted at beginning of section
  - Departure numbers also listed in COLA Part 7 Section 5.0
  - Changes in "clouds"

# COLA Formatting (cont'd)

- Supplements to ABWR DCD text
  - Font not italicized or underlined
- Supplemental figures
  - Whole figure in a "cloud"

## 6.4 Habitability Systems

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### 6.4.4.2 6.4.4.2 Smoke and Toxic Gas Protection

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# Part 7 – Departures Report

- Section 1.0 – Introduction
- Section 2.0 – Departures Requiring Prior NRC Approval
- Section 3.0 – Departures Not Requiring Prior NRC Approval
- Section 4.0 – Administrative Departures
- Section 5.0 – Tables and Indexes

## 7.4.1.3 Reactor Shutdown Cooling Mode–Instrumentation and Controls

STD DEP T1 2.4-1

STD DEP 8.3-1

*(1)* Power Sources

*This system utilizes normal plant power sources. These include* 4.16 kV ~~*6900 VAC*~~ *for the pumps, 480 VAC/120 VAC instrument buses, and as backed up by DC sources. If for any reason the normal plant sources become unavailable, the system is designed to utilize the emergency buses and sources.*

*(2)* *Equipment*

*If it is necessary to discharge a complete core load of reactor fuel to the fuel pool, a means is provided for making a physical intertie between the Spent Fuel Pool Cooling and Cleanup (SFPC) System and the RHR heat exchangers. This increases the cooling capacity of the SFPC System to handle the heat load for this situation.* ~~*The fuel pool intertie is applied only to Loops B and C (see Figure 5.4-10 for RHR System P&ID).*~~

# Questions