## PMVogtleCOLPEm Resource

**From:** Coffin, Stephanie
**Sent:** Friday, May 08, 2009 8:28 AM
**To:** Cruz, Jeffrey; Kevern, Thomas
**Cc:** BelCol Resource; VogtleCOL Resource; HarrisCOL Resource; LevyCOL Resource; SummerCOL Resource
**Subject:** FW: ACRS slides
**Attachments:** 20090507 NRC ACRS Presentation Final.pdf

FYI

Tom - Glad you were there yesterday afternoon. Steph

---

**From:** Richard Grumbir [mailto:richard.grumbir@excelservices.com]
**Sent:** Wednesday, May 06, 2009 9:37 AM
**To:** Stephanie Coffin
**Cc:** 'Hastings, Peter S'; 'Eddie R Grant'
**Subject:** ACRS slides

Stephanie, attached are the ACRS slides for tomorrow. We are having 35 copies made and Eddie will be delivering them to you around noon.

*Richard Grumbir*

**AP1000 COL Project Manager**
**NuStart Energy Development**
richard.grumbir@excelservices.com
rgrumbir@gmail.com (alternate)
256-308-1770 home office
256-309-8974 cell/BB
256-308-1771 fax

**Hearing Identifier:** Vogtle_COL_Public
**Email Number:** 108

**Mail Envelope Properties** (3AF7DEF82ADA8944AD8247B7ED7FD651968D3882F7)

**Subject:** FW: ACRS slides
**Sent Date:** 5/8/2009 8:28:06 AM
**Received Date:** 5/8/2009 8:28:09 AM
**From:** Coffin, Stephanie

**Created By:** Stephanie.Coffin@nrc.gov

**Recipients:**
"BelCol Resource" <BelCol.Resource@nrc.gov>
Tracking Status: None
"VogtleCOL Resource" <VogtleCOL.Resource@nrc.gov>
Tracking Status: None
"HarrisCOL Resource" <HarrisCOL.Resource@nrc.gov>
Tracking Status: None
"LevyCOL Resource" <LevyCOL.Resource@nrc.gov>
Tracking Status: None
"SummerCOL Resource" <SummerCOL.Resource@nrc.gov>
Tracking Status: None
"Cruz, Jeffrey" <Jeffrey.Cruz@nrc.gov>
Tracking Status: None
"Kevern, Thomas" <Thomas.Kevern@nrc.gov>
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

| **Files** | **Size** | **Date & Time** |
|---|---|---|
| MESSAGE | 748 | 5/8/2009 8:28:09 AM |
| 20090507 NRC ACRS Presentation Final.pdf | 849449 | |

**Options**
**Priority:** Standard
**Return Notification:** No
**Reply Requested:** No
**Sensitivity:** Normal
**Expiration Date:**
**Recipients Received:**

NuStart Energy sm

# AP1000 DCD/R-COLA Integration, Development, and Standardization

## AP1000 Design-Centered Work Group Presentation to ACRS May 7, 2009

**Peter Hastings, NuStart** — ***AP1000 DCWG Lead***
**Rob Sisk, Westinghouse** — ***Manager, AP1000 Licensing & Customer Interface***
**Eddie Grant, NuStart** — ***AP1000 R-COLA Licensing***

NuStart Energy Development, LLC - All Rights Reserved

NuStart Energy℠

# AP1000 DCWG

Duke Energy®

SCE&G® A SCANA COMPANY

SOUTHERN COMPANY

AP1000 Westinghouse

Progress Energy

FPL.

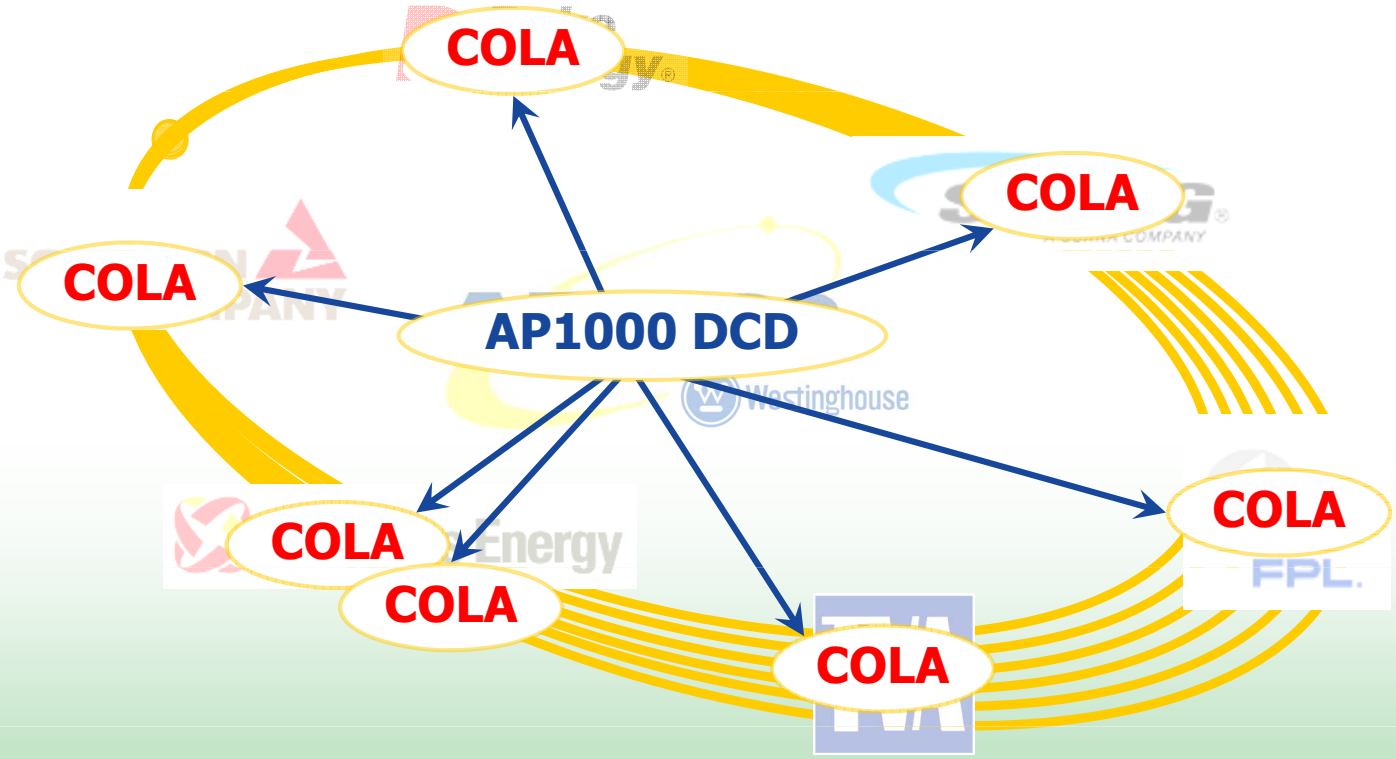
TVA

Bellefonte 3&4 | Lee Nuclear 1&2 | Summer 2&3 | Vogtle 3&4 | Harris 2&3 | Levy 1&2 | Turkey Point 6&7

# AP1000 Design Center

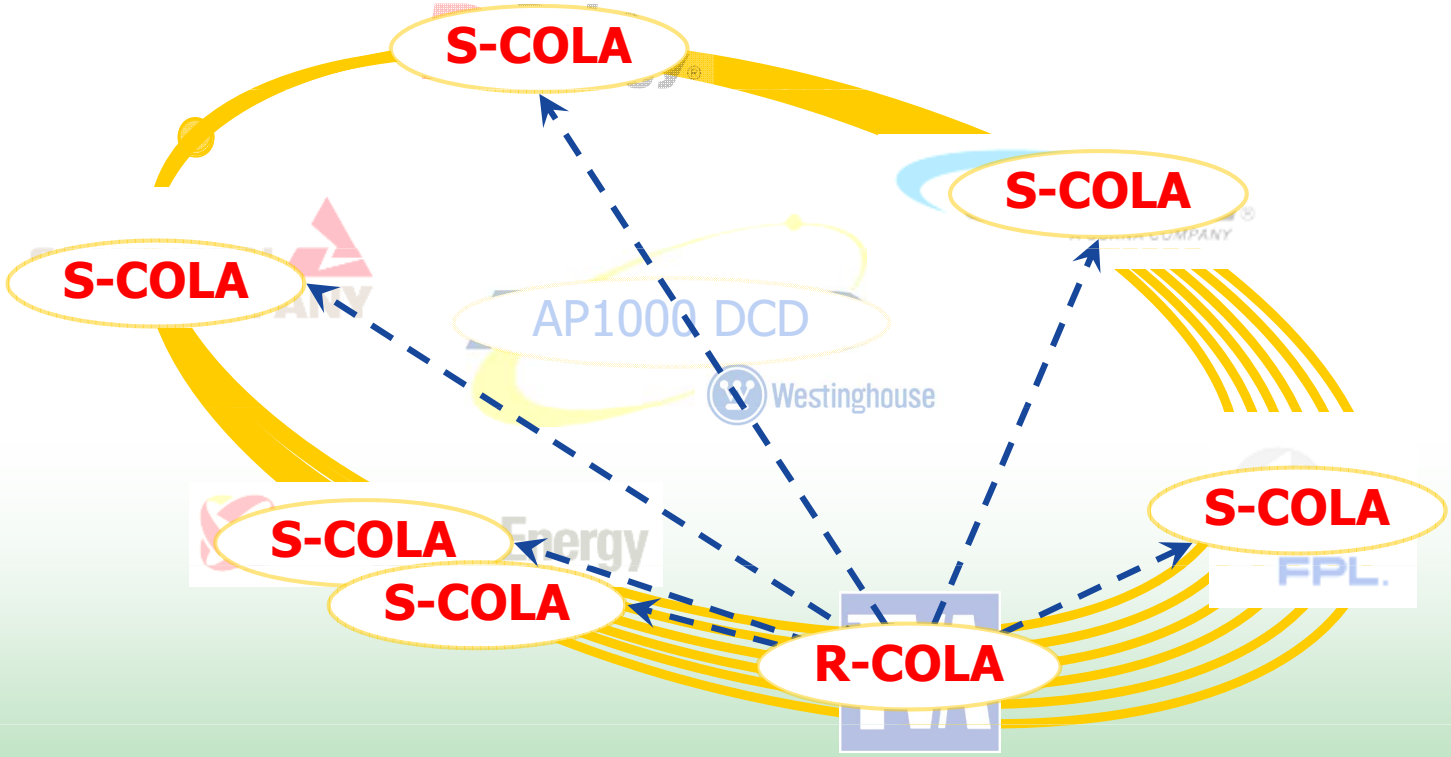
- **High level of standardization**
- **Design with significant finality**
- **Integration of DCD and COL applications through incorporation by reference**
- **Explicit identification of standard and site-specific information**
- **Status**
  - Design Certification amendment request under review
  - Six COL applications under review (each for two units), additional application expected in June
  - COL applications reference AP1000, as being amended
  - Reference/Subsequent COLA (R-COLA/S-COLA) approach being used for standard content

# Use of Standard Content




Bellefonte 3&4 Lee Nuclear 1&2 Summer 2&3 Vogtle 3&4 Harris 2&3 Levy 1&2 Turkey Point 6&7

# Use of Standard Content (cont'd)




Bellefonte 3&4 | Lee Nuclear 1&2 | Summer 2&3 | Vogtle 3&4 | Harris 2&3 | Levy 1&2 | Turkey Point 6&7

# R-COLA Transition

- **Change in dockets to facilitate resource alignment**
- **No change in DCWG structure**
- **SER with Open Items issued on Bellefonte**
- **STD Open Items to be closed on Vogtle**
- **Handling site-specific issues**
  - Bellefonte site-specific issues addressed in Bellefonte SER with Open Items
  - ACRS review and closure on Bellefonte (as with any other S-COLA)
  - Early Site Permit addressed majority of significant site-specific issues for Vogtle
- **Timing of transition closely coordinated with NRC Staff**

# Overview of the AP1000 Certified Design Amendment

- AP1000 Design (Rev 15) was certified on January 27, 2006
  - 10CFR52 Appendix D – AP1000 Design (certified)
  - Preceded by 10CFR52 Appendix C – AP600 Design (certified) and 10CFR52 Appendix B – System 80+ Design (certified)

- An Amendment to the certified design was submitted May 26, 2007
  - Augmented in Sept 22, 2008
  - Consistent with 10CFR52.63 requirements

- Purpose of the Amendment:
  - Address COL Information items
  - Address Design Acceptance Criteria
  - Address NRC requirements
  - Enhance Standardization
  - Design Maturity
  - Incorporate Design Improvements

# Amendment Overview

- AP1000 amendment builds on the certified design
  - Much of certified design as documented in the DCD remains unchanged
- Key review issues:
  - Address developing security requirements
  - DAC (I&C, HFE, Piping)
  - Containment sump and downstream effects
  - Structural design and seismic analyses
  - Control room ventilation
  - Enhanced Integrated Head Package
  - ASTRUM
  - Addressed non-plant-specific Technical Specification
- Conclusions of the AP1000 safety analysis remain unchanged

## First AP1000 Plants Being Constructed in China

Contracts signed for first four units:

- Two units at Sanmen
- Two units at Haiyang

Contracts signed in July 2007

First unit (Sanmen 1):

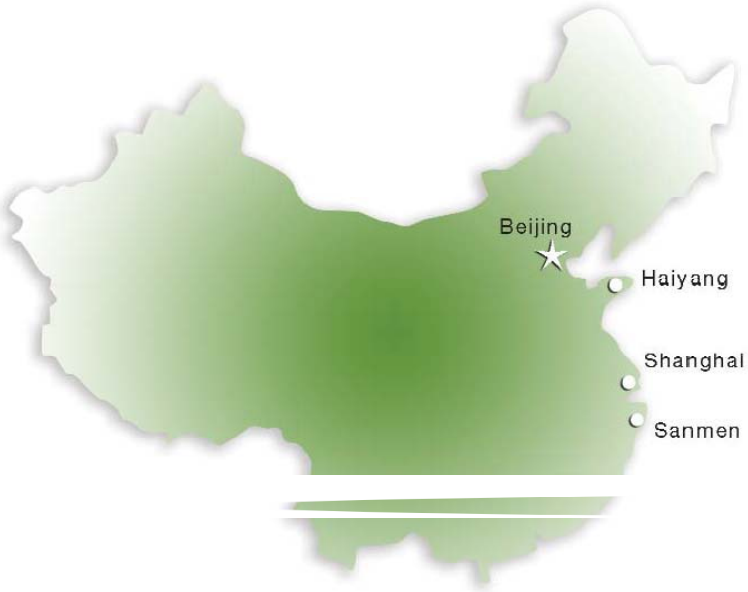
Groundbreaking in Feb 2008

First concrete in March 2009

Fuel loading in May 2013

Operational in November 2013

Haiyang schedule 6 months behind Sanmen



## AP1000 Projects in the United States

EPC contracts in place for 6 units:

Operational:

**Southern Co.**

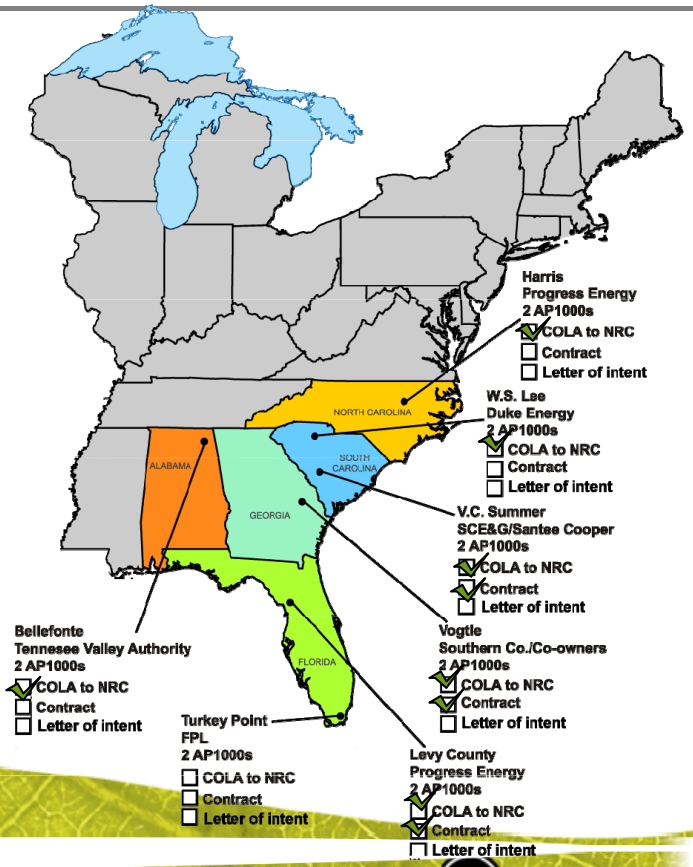
Vogtle 3, 4 2016, 2017

**SCE&G**

VC Summer 2, 3 2016, 2019

**Progress Energy**

Levy County 1, 2 2018-2020*



# Closing Remarks

- Westinghouse is working to address the NRC's concerns on a schedule to support the ACRS meetings:
  - July 23 &24
  - Oct 6 & 7
  - November 19 & 20
- AP1000 Design was certified on January 27, 2006.
  - Built on the Review and Approval of AP600
  - The amendment process incorporated two revisions (Rev 16 & 17)
  - A conforming revision (Rev 18) is anticipated to support rulemaking
- Focus is on reviewing changes to the certified design
  - Recognizing Design Finality applies (10CFR52.63)
- Westinghouse is ready to present the AP1000 amended design to the ACRS!

# Combined License (COL) Application

- Cover Letter, Affidavits, etc. ("Part 0")
- Part 1 – General & Administrative Information
- Part 2 – Final Safety Analysis Report
- Part 3 – Environmental Report
- Part 4 – Plant Specific Technical Specifications
- Part 5 – Emergency Planning Information
- Part 6 – Limited Work Authorization Information
- Part 7 – Departures & Exemption Requests
- Part 8 – Safeguards Information
- Part 9 – Other Withheld Information
- Part 10 – Proposed License Conditions, including ITAAC
- Part 11 – Other Documents (e.g., QAPD)

# DCD/R-COLA Integration in Part 2

- **Incorporation by Reference (IBR):** majority of DCD IBR'd into COLA (and not repeated)
- **S-COLAs includes standard content reflected in R-COLA**
- **FSAR content labeled explicitly with Left Margin Annotations (LMAs) as STD or site-specific (BLN):**
  - COL Information Items:
    - STD COL #.#-# or BLN COL #.#-#
  - Departures from DCD:
    - STD DEP #.#-# or BLN DEP #.#-#
  - Supplemental Information:
    - STD SUP #.#-# or BLN SUP #.#-#

# Left Margin Annotations (FSAR)

| MARGIN NOTATION | DEFINITION AND USE |
|---|---|
| **STD DEP** X.Y.Z-# | FSAR information that **departs from the generic DCD** and is common for parallel applicants. Each Standard Departure is numbered separately at an appropriate level. |
| **NPP DEP** X.Y.Z-# | FSAR information that **departs from the generic DCD** and is plant specific. NPP is replaced with a plant specific identifier. |
| **STD COL** X.Y-# | FSAR information that addresses a DCD **Combined License Information item** and is common to other COL applicants. Each COL item is numbered as identified in DCD Table 1.8-2. |
| **NPP COL** X.Y-# | FSAR information that addresses a DCD **Combined License Information item** and is plant specific. NPP is replaced with a plant specific identifier. |
| **STD SUP** X.Y-# | FSAR information that **supplements** the material in the DCD and is common to other COL applicants. Each SUP item is numbered separately at an appropriate subsection level. |
| **NPP SUP** X.Y-# | FSAR information that **supplements** the material in the DCD and is plant specific. NPP is replaced with a plant specific identifier. Each SUP item is numbered separately at an appropriate subsection level. |
| **NPP CDI** or **STD CDI** | FSAR information that addresses **DCD Conceptual Design Information (CDI)**. Replacement design information is generally plant specific; however, some may be common to other applicants. NPP is replaced with a plant specific identifier. STD is used if it is common. CDI information replacements are not numbered. |
| **DCD** | FSAR information that **duplicates material in the DCD**. Such information from the DCD is repeated in the FSAR only in instances determined necessary to provide contextual clarity. |

# DCD/R-COLA Integration (other Parts)

- **Part 4 – Plant Specific Technical Specifications**
  - Generic TS repeated to provide full, clean copy
  - Plant specific information included

- **Part 7 – Departures and Exemptions**
  - Tier 1 and GTS departures require exemptions
  - Tier 2* departures require NRC approval
  - Tier 2 departures require evaluation ~ 50.59
    - Some require NRC approval

# DCD/R-COLA Integration (other Parts)

- **Part 10 – Proposed License Conditions**
  - ITAAC (IBR of DCD Tier 1 ITAAC)
    - Adds Security, Plant Specific, Emergency Planning
  - Holder items
    - COL Info Items that can't be completed prior to COL issuance (e.g., as-built or startup testing)
  - Program implementation milestones
  - Program readiness (for inspections)
  - Other items typical for Operating Licenses
    - Security program revision process
    - Startup testing change reporting
    - Environmental Protection Plan (Nonradiological)

# FSAR Standardization examples

| Sect. | IBR | STD | PS |
|---|---|---|---|
| 1.1 | IBR | X | X |
| 1.2 | IBR | | X |
| 1.3 | IBR | | |
| 1.4 | IBR | | X |
| 1.5 | IBR | | |
| 1.6 | IBR | X | |
| 1.7 | IBR | | X |
| 1.8 | IBR | X | X |
| 1.9 | IBR | X | X |
| 1.10 | (New) | X | X |
| 1A | IBR | X | |

| Chapter | % STD | Chapter | % STD |
|---|---|---|---|
| 1 | 75 | 11 | 40 |
| 2 | 0 | 12 | 70 |
| 3 | 80 | 13 | 30 |
| 4 | 100 | 14 | 90 |
| 5 | 100 | 15 | 75 |
| 6 | 80 | 16 | 75 |
| 7 | 80 | 17 | 60 |
| 8 | 75 | 18 | 90 |
| 9 | 60 | 19 | 100 |
| 10 | 50 | FSAR | 20/70 |

# R-COLA Standard Material Summary

- **DCD Incorporated by Reference**
  - Part 2 – FSAR
  - Part 10 – Proposed License Conditions
- **Part 4 – Technical Specifications**
- **Many Program Descriptions in FSAR**
  - NEI Templates (examples)
    - RP, Training, ALARA, Maintenance, PCP, ODCM
  - Others such as ISI, IST, CLRT
  - Procedural information
- **Many COL Information Item closures**
- **Much of the Supplemental material**
- **Standard methods used**
  - Examples - PSHA, Cost-benefit analyses