PMBelCOL PEmails

From: BelCol Resource
Sent: Tuesday, May 05, 2009 1:31 PM
To: PMBelCOL PEmails
Cc: Stephanie Coffin; HarrisCOL Resource; LevyCOL Resource; SummerCOL Resource; VogtleCOL Resource
Subject: Draft Slides for Comparison: ACRS
Attachments: 2009_05_07_ACRS_Presentation.doc

note: document pdf originally attached to this email had a format that was not supported by hearing file email system. PDF file converted to microsoft word to allow the document to be processed. no other changes made

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From: Stephanie Coffin
Sent: Wednesday, April 29, 2009 10:09 PM
To: BelCol Resource; HarrisCOL Resource; LevyCOL Resource; SummerCOL Resource; VogtleCOL Resource
Subject: FW: Draft Slides for Comparison: ACRS

From: Hastings, Peter S [mailto:Peter.Hastings@duke-energy.com]
Sent: Tuesday, April 28, 2009 11:59 PM
To: Eileen McKenna; Stephanie Coffin
Cc: Richard GRUMBIR (richard.grumbir@excelservices.com); rgrumbir@gmail.com; Eddie GRANT; Sisk, Robert B.; Eddie.Grant@EXCELServices.com
Subject: Draft Slides for Comparison: ACRS

Here are our slides so far. Still a little cleanup and polishing to do, but they're fundamentally ready for discussion and comparison with yours. Let me or Rich know if you have any questions. Thanks.

Hearing Identifier: Bellefonte_COL_Public_EX
Email Number: 1493

Mail Envelope Properties (5A7F273F3E481245BC055B36939D346323F80A5399)

Subject: Draft Slides for Comparison: ACRS
Sent Date: 5/5/2009 1:30:30 PM
Received Date: 5/5/2009 1:30:35 PM
From: BelCol Resource

Created By: BelCol.Resource@nrc.gov

Recipients:
"Stephanie Coffin" <Stephanie.Coffin@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
"VogtleCOL Resource" <VogtleCOL.Resource@nrc.gov>
Tracking Status: None
"PMBelCOL PEmails" <PMBelCOL.PEmails@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	1001	5/5/2009 1:30:35 PM
2009_05_07_ACRS_Presentation.doc	2454010	

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

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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***

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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

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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

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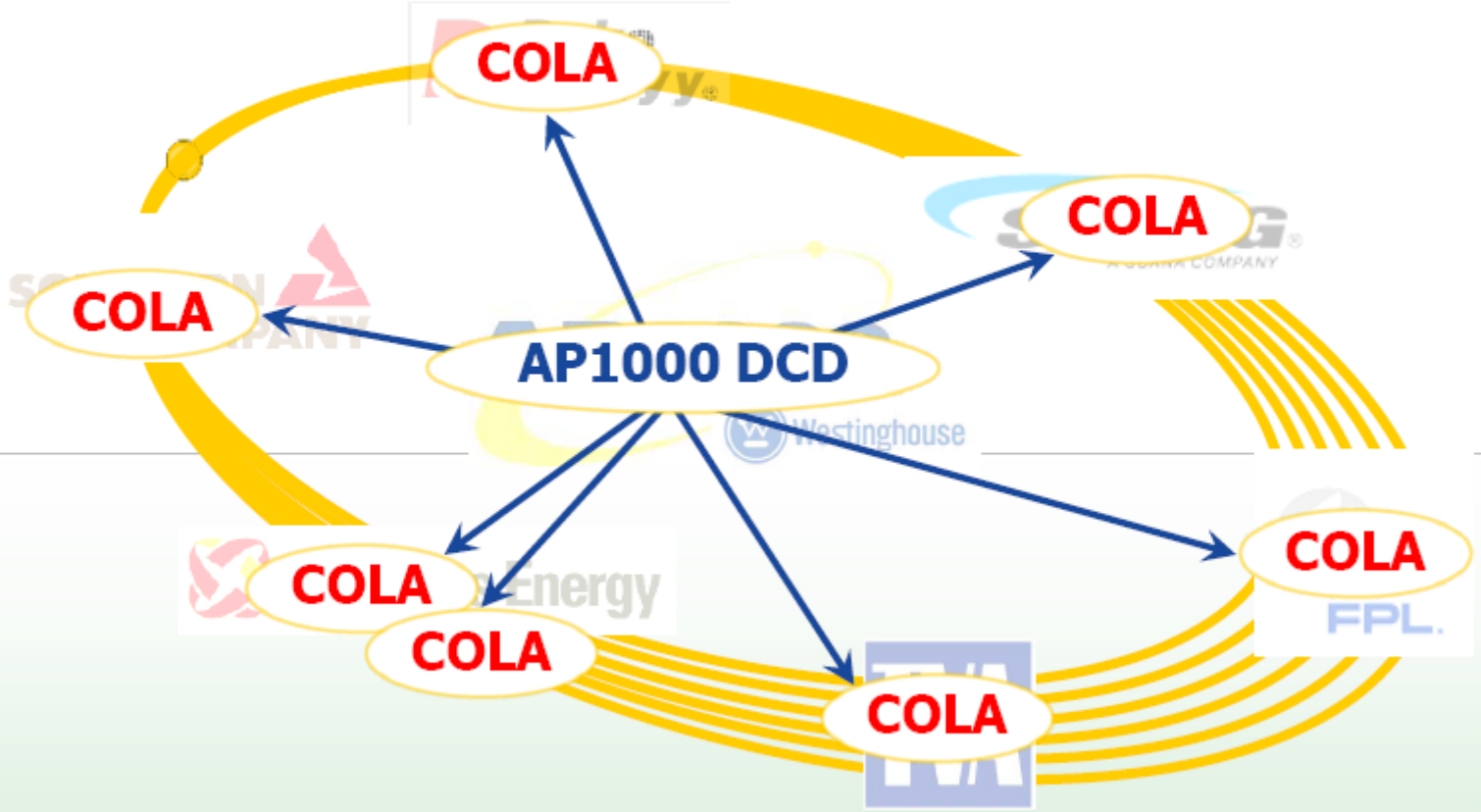
Use of Standard Content



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

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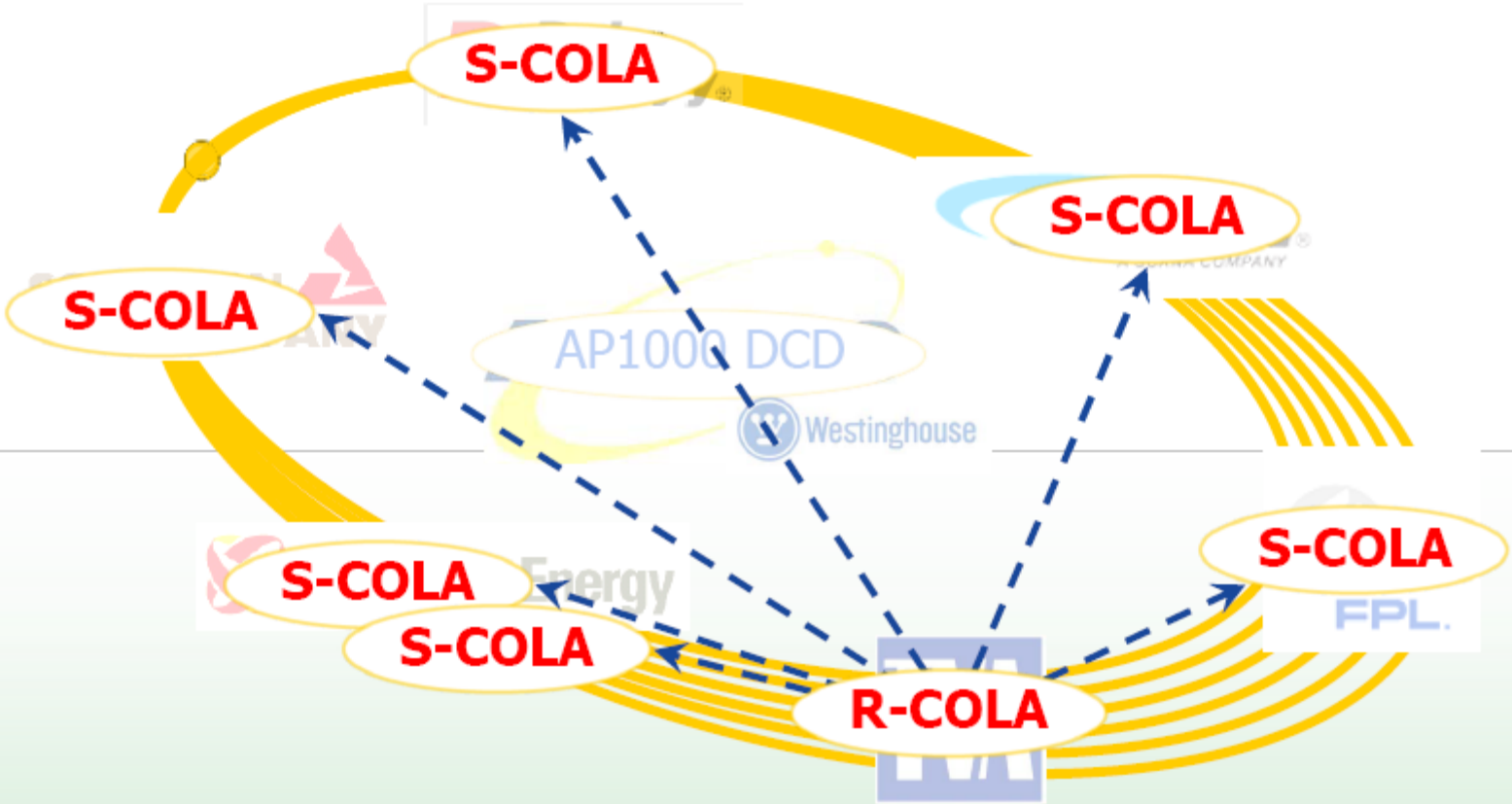
Use of Standard Content (cont'd)



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

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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)
  - No significant site-specific issues remain on Vogtle
- **Timing of transition closely coordinated with NRC Staff**

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AP1000

Westinghouse Organization

- ~10,000 employees worldwide; Nuclear business only
- Recent history:
  - Acquired by BNFL in 1999
  - Added ABB Nuclear (including Comb. Eng.) in 2000
  - Acquired by Toshiba, Shaw, and IHI in 2006
- Major divisions:
  - Nuclear Fuel
  - Nuclear Services
  - Nuclear Power Plants (NPP)
- The Westinghouse organization was responsible for:
  - 10CFR52 Appendix B – System 80+ Design (certified)
  - 10CRR52 Appendix C – AP600 Design (certified)
  - 10CFR52 Appendix D – AP1000 Design (certified)

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AP1000

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

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AP1000

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 2016, 2017

Contracts to be negotiated for 8 more units

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Overview of the AP1000 Certified Design Amendment

- AP1000 Design (Rev 15) was certified on January 27, 2006.
- An Amendment to the certified design was submitted 5/26/07
  - Augmented in Sept 22, 2008
  - Consistent with 10CFR52.63 requirements
- Primary purpose of the Amendment:
  - Address COL Information items
  - Address Design Acceptance Criteria
- Secondary purpose:
  - Address NRC requirements (i.e., Security)
  - Enhance Standardization
  - Design Maturity (i.e., procurement details)
  - Clean up errors
  - Incorporate Design Improvements (i.e., Integrated Head Package)

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Overview of the AP1000 Certified Design Amendment

- Why Now?
  - To provide an "up-to-date" certified design for the COLs
    - Address issues identified during COL reviews
      - ✓ Responsive to NRC requirements
    - Contributes to increase standardization
      - ✓ Minimize the need for departures

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AP1000

Notable Changes

- Accommodate various soil types for Sites
- Address developing security requirements
  - Aircraft Impact
- Enhanced Integrated Head Package
- ASTRUM
- Pressurizer Flow Skirt
- Remove Piping DAC
- Remove HFE DAC
- Partial Remove I&C DAC
- COL Closure closing 70+ information items
  - Procedure Issues
  - Technical Specification (non-Plant Specific)

AP1000 Design is essentially the same as originally certified

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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!

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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)

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DCD/R-COLA Integration in Part 2

- **Design Centered Working Group (DCWG)**
  - Reference Combined License Application (R-COLA)
  - Subsequent COLAs incorporating standard information
- **Incorporated by Reference (IBR)**
  - Majority of DCD IBR'd into COLA – not repeated
- **COL Information Items – see Table 1.8-202**
  - LMA would be STD COL #.#-# or BLN COL #.#-#
- **Departures from DCD – See Table 1.8-201 & Part 7**
  - LMA would be STD DEP #.#-# or BLN DEP #.#-#
- **Supplemental Information – address guidance**
  - LMA would be STD SUP #.#-# or BLN SUP #.#-#

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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.

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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 – none
  - Tier 2* departures require NRC approval
  - Tier 2 departures require evaluation ~ 50.59
    - Some require NRC approval

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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)

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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

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FSAR Standardization example

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	

- **Extent of standardization:**
  - ~80% by section
  - Most of FSAR Ch 2 is site specific
- **From AP1000 Standardization Matrix**
  - IBR: virtually all chapters/sections incorporate DCD
  - Standard or partially standard: 182 of 193 (includes "all IBR")
  - Plant-specific or partially plant-specific: 36 of 193
- **Limited DCD departures**

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