From: Christian Araguas
To: "Thomas Bergman" <TAB@nrc.gov>,"Stephanie Coffin" <SMC1@nrc.gov>,"Chris Nolan" <MCN@nrc.gov>,"Mark Notich" <mdn@nrc.gov>
Date: 8/28/2006 2:13:41 PM
Subject: Slides Used for RUS Meeting

FYI- Attached are the slides that SNC presented at the RUS meeting that the NRC backed out of on March 17, 2006. The last set of slides talk about RUS requirements under NEPA.

Christian

Hearing Identifier: Vogtle_Non_Public
Email Number: 523

Mail Envelope Properties (4603A3F4.HQGWDO01.TWGWPO04.200.2000007.1.70788.1)

Subject: Slides Used for RUS Meeting
Creation Date: 8/28/2006 2:13:41 PM
From: Christian Araguas

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Advanced Reactors ESP/COL Process

Tom Moorer
March 17, 2006

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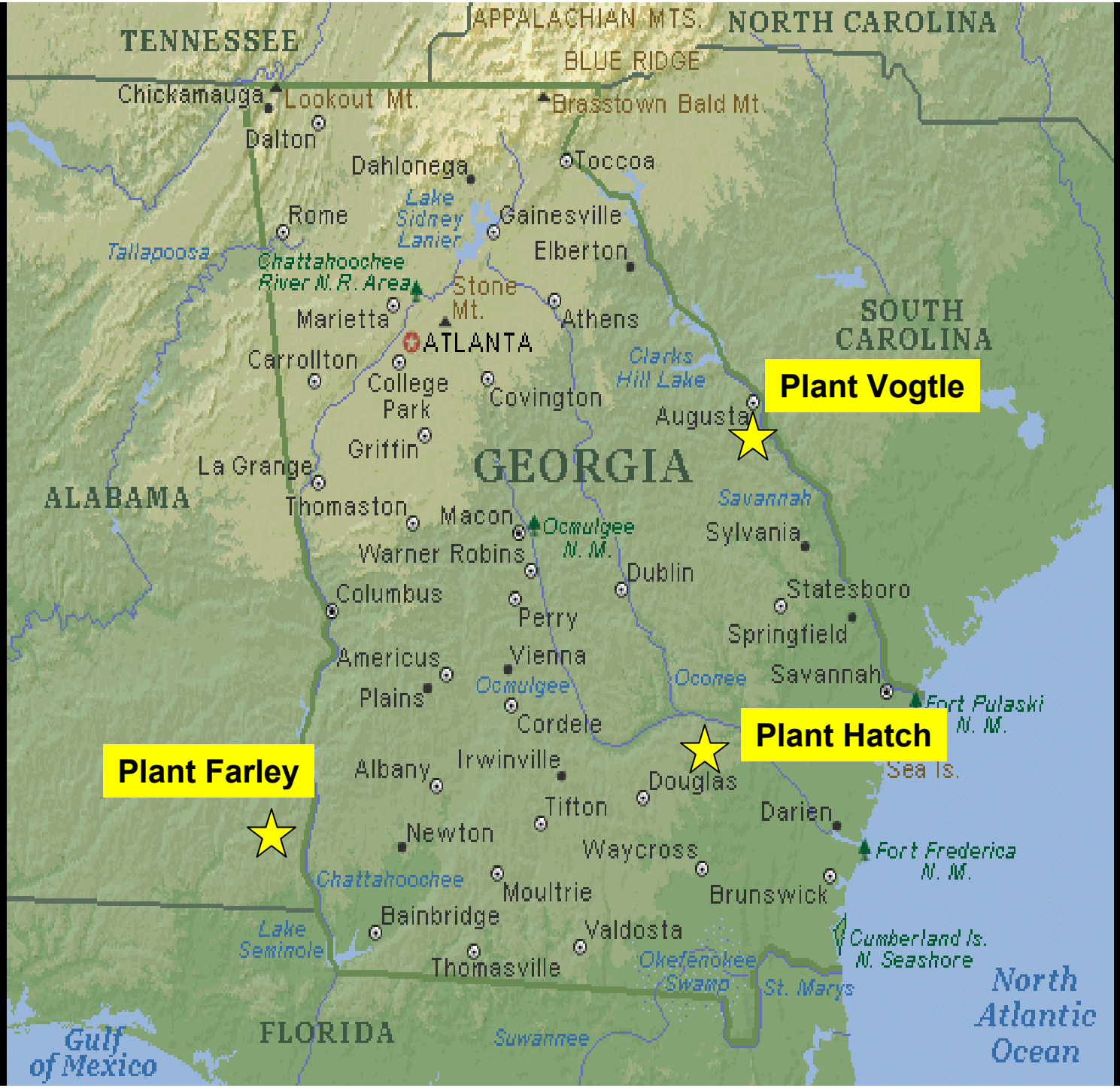
TENNESSEE
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Toccoa
Lake Sidney Lanier
Rome
Gainesville
Tallapoosa
Chattahoochee River N.R. Area
Elberton
Stone Mt.
Marietta
Athens
ATLANTA
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Thomaston
Macon
Ocmulgee N. M.
Sylvania
Warner Robins
Dublin
Columbus
Statesboro
Perry
Springfield
Americus
Vienna
Ocmulgee
Oconee
Savannah
Plains
Fort Pulaski N. M.
Cordele
Plant Hatch
Plant Farley
Albany
Irwinville
Douglas
Sea Is.
Tifton
Darien
Newton
Waycross
Fort Frederica N. M.
Chattahoochee
Moultrie
Brunswick
Bainbridge
Lake Seminole
Valdosta
Cumberland Is. N. Seashore
Okefenokee Swamp
Thomasville
St. Marys
North Atlantic Ocean
Gulf of Mexico
FLORIDA
Suwannee

McCormick
Columbia
Lexington
Edgefield
Lincoln
Sumter National Forest
Edgefield
Wilkes
Calhoun
Columbia
Evans
Martinez
Augusta
North Augusta
Aiken
Aiken
Orangeburg
Thomson
New Ellenton
Williston
Warren
McDuffie
Orangeburg
Fort Gordon
Richmond
Jackson
Savannah River Site
Barnwell
Blackville
Hephzibah
Barnwell
Glascock
Bamberg
Waynesboro
Savannah River
Allendale
Jefferson
Girard
Burke
Louisville
Sardis
Allendale
Colleton
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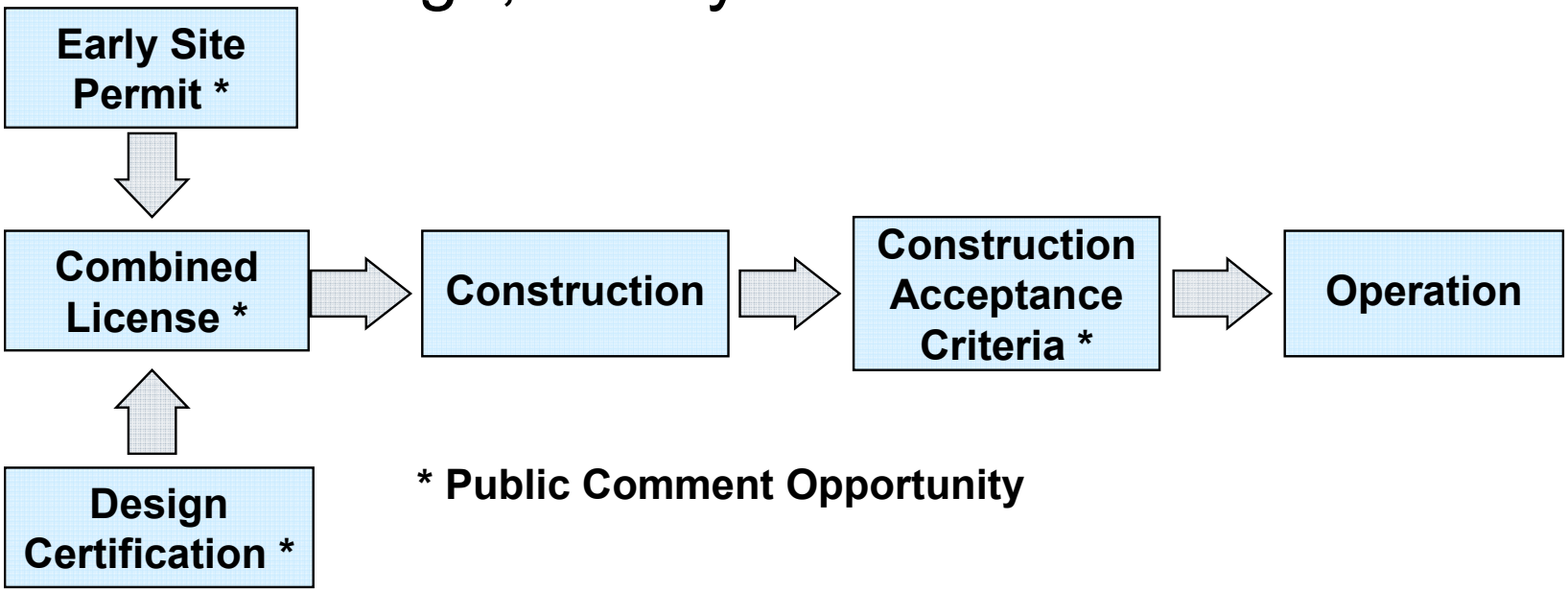
Emanuel
Screven
Swainsboro
Jasper
Bulloch
Treutlen
Statesboro
Effingham
Candler
I20
I26
I520
I95
I16

Advanced Reactor Regulations & Activities

- Part 52 provides three phases of advanced reactor licensing
  - Design Certification (DC)
  - Early Site Permitting (ESP)
  - Combined Operating License (COL)
- At each stage, finality of information is intended.



Early Site Permits (ESP)

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- Early site permitting process establishes site suitability. Focus is on land issues, environmental issues, seismology, and emergency planning, site redress, and decommissioning.
- General schedule is 15 months to develop application; 36 months for NRC review; $20 million cost.
- Currently three applicants (Exelon, Entergy, and Dominion) are exercising the ESP process.
- SNC has elected to pursue an ESP primarily because it allowed key parts of the licensing process to be completed early, thereby shortening the overall schedule. The ESP also allows SNC to utilize the LWA process to conduct certain work activities prior to receipt of COL.
- SNC will submit an ESP based on a single technology (W AP1000) with the intent of achieving finality in all environmental areas. This should significantly limit the scope of the environmental process for COL.

ESP Scope – Major Items

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- Need for power evaluation
- Transmission line evaluation
- Alternate site study
- Seismic response analysis
- Ground water analysis
- Population studies
- Construction workforce studies
- Site flooding studies
- Water usage analysis
- Circulating water system evaluation
- Site soil studies
- Develop emergency plan
- Aquatic environmental impacts
- Effluent analysis
- Dose release evaluations
- Intake/outfall conceptual design
- Switchyard conceptual design
- Construction activities planning
- Transportation impact studies
- Severe accident mitigation analysis
- Decommissioning study
- Site redress plan (LWA-1)
- Terrestrial environmental impacts

ESP Process

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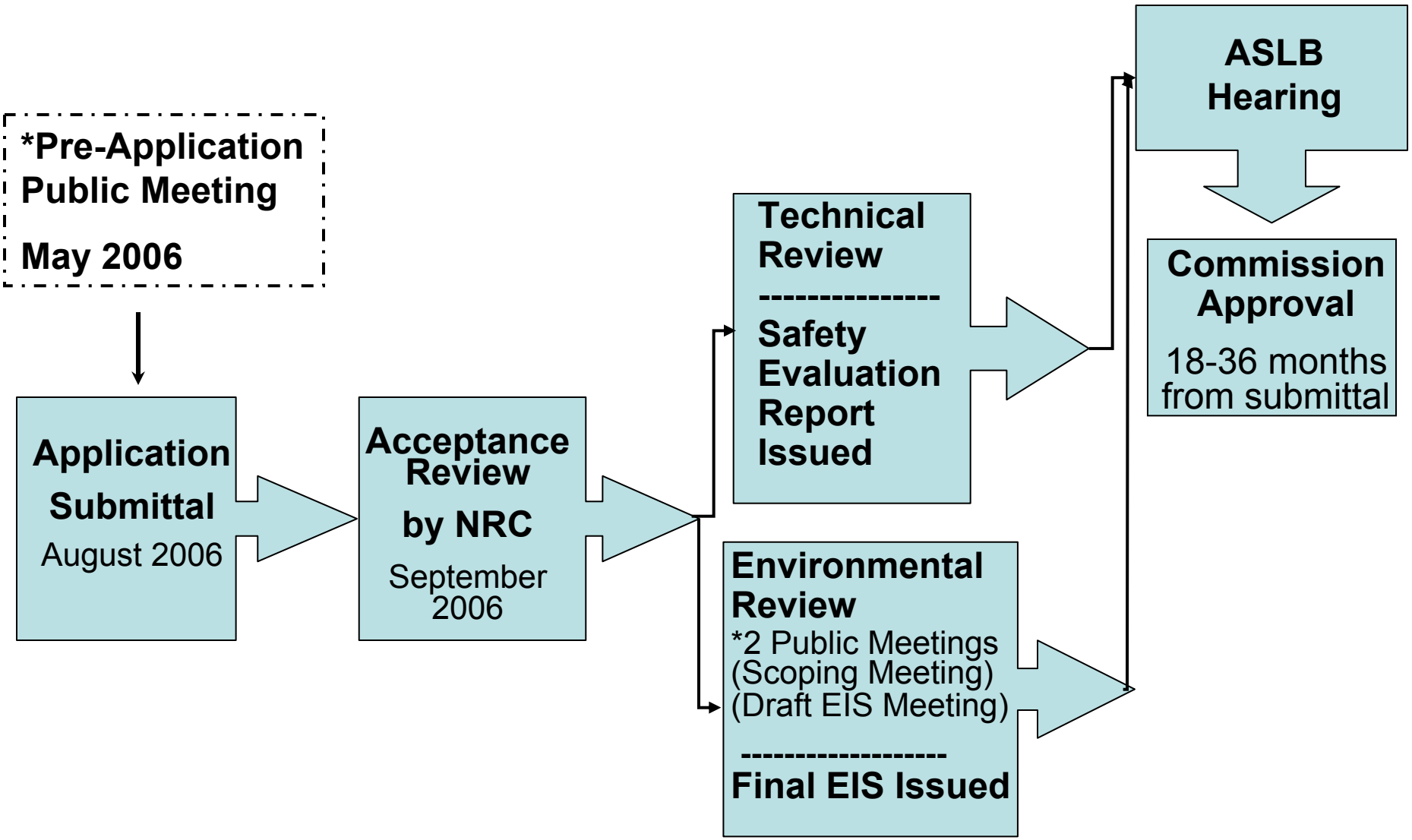

Design Certification

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- Westinghouse AP1000 design certification process is complete. Safety Evaluation Report has been issued and final rulemaking was issued in January 2006.
- Note that extensive first of a kind engineering (FOAKE) is yet to be completed. This process will be completed by NuStart via the Bellefonte site COL for the AP1000 design.

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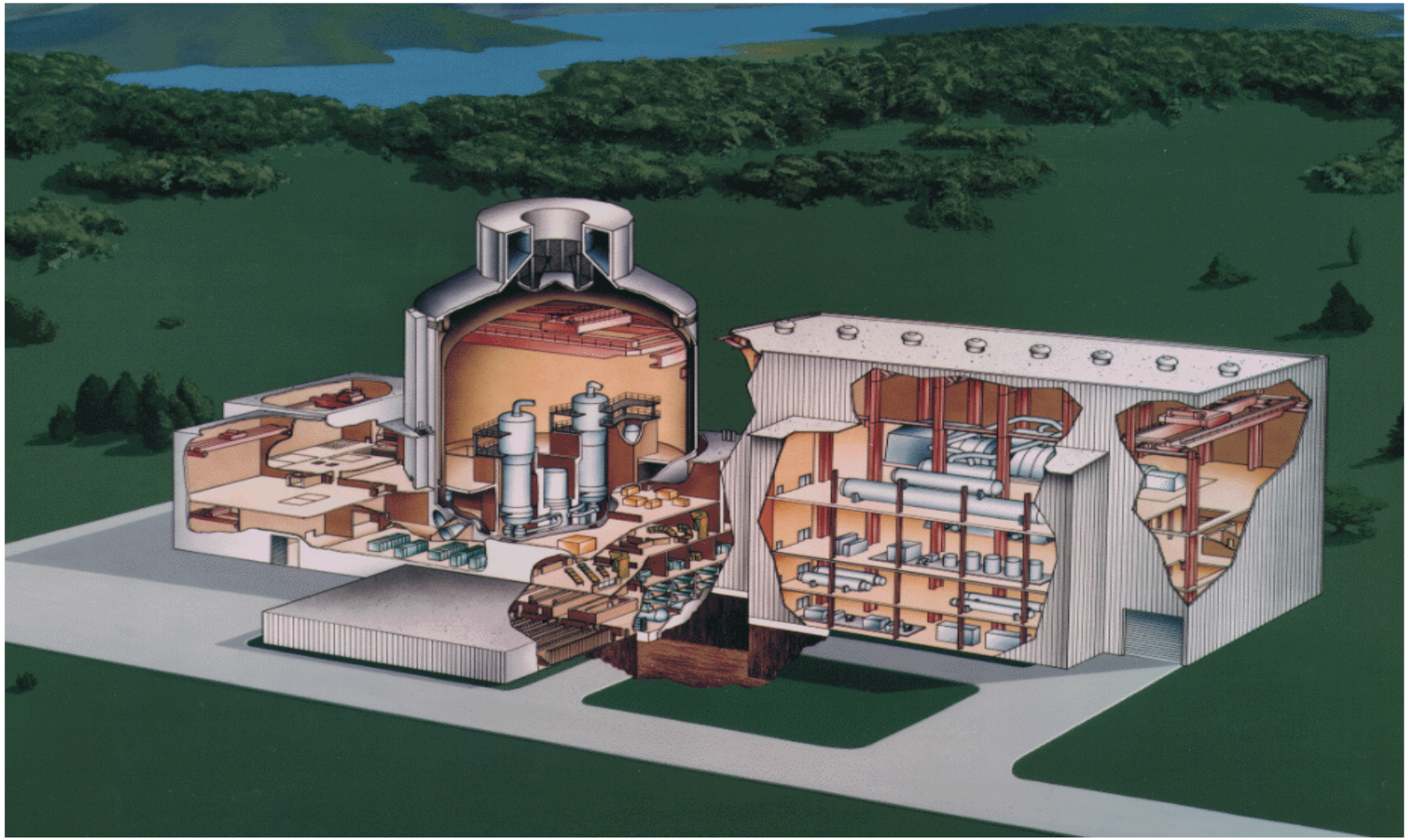
Westinghouse AP-1000



Westinghouse AP-1000

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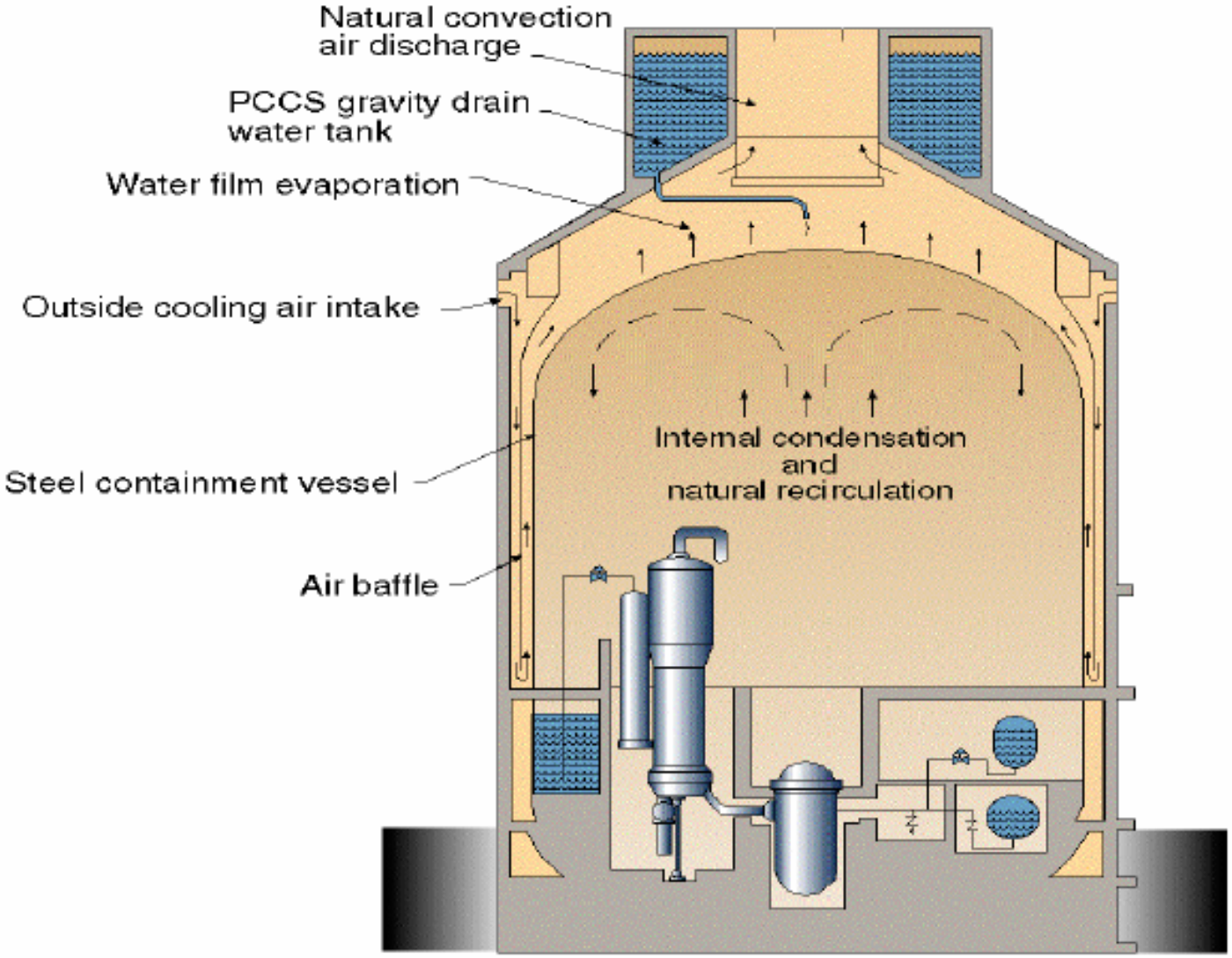

Westinghouse AP-1000

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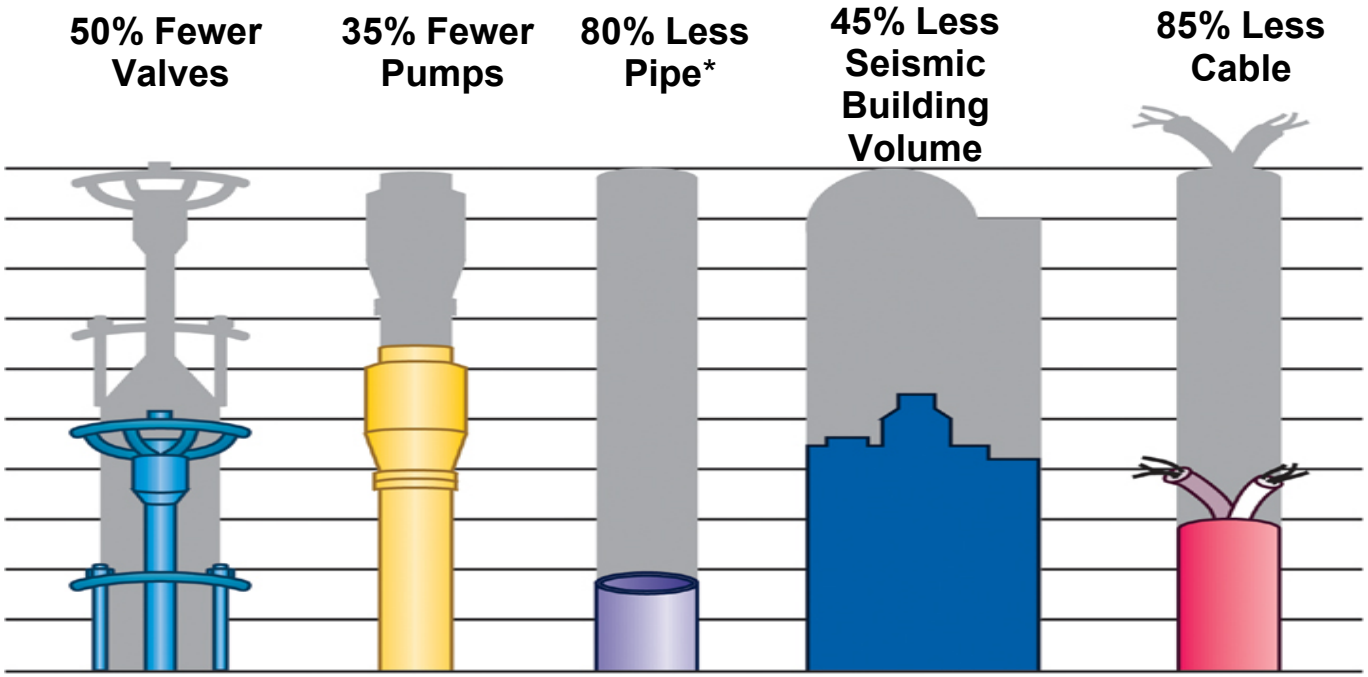

- **Reduced Number of Components**

	1000 MW Reference	AP1000
Safety Valves	2844	1400
Pumps	280	184
Safety Grade Piping	110,000 LF	19,000 LF
Cable	9.1 MLF	1.2 MLF

- **Reduced Amount of Building Materials**

Seismic Building Volume	12.7 Mft^3	5.6 Mft^3

Combined Operating License

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- Regulatory process to obtain a construction & operating license before construction begins.
- General schedule is 24 months to develop; 36 months for NRC review; $50 million cost.
- Sufficient first of a kind engineering must be completed to support application. Currently scheduled to be completed by late 2007 (~$150million). Another $200 million planned beyond application.
- Sufficient site specific engineering must also be completed to support application; $20 million cost.
- NEI 04-01 developed by NEI to define process to develop a COLA; NRC is developing DG-1145 and other guidance to support COLA process

NuStart Update

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Southern Company participates in NuStart

- Keep Southern on the leading edge of understanding nuclear technology, costs and risk
- Participate in demonstration of new COL licensing process
- Participate in FOAKE completion to support Vogtle COL
- Participate in DOE Co-Funding ($400 – 500 million)
- Develop turnkey cost certainty by January 2008
- Maintain a nuclear option with no commitment to build
- NuStart developing COLs for two sites
  - ESBWR – Grand Gulf
  - AP1000 – Bellefonte
- NuStart focused on standardization of COL elements

Southern Company Plan

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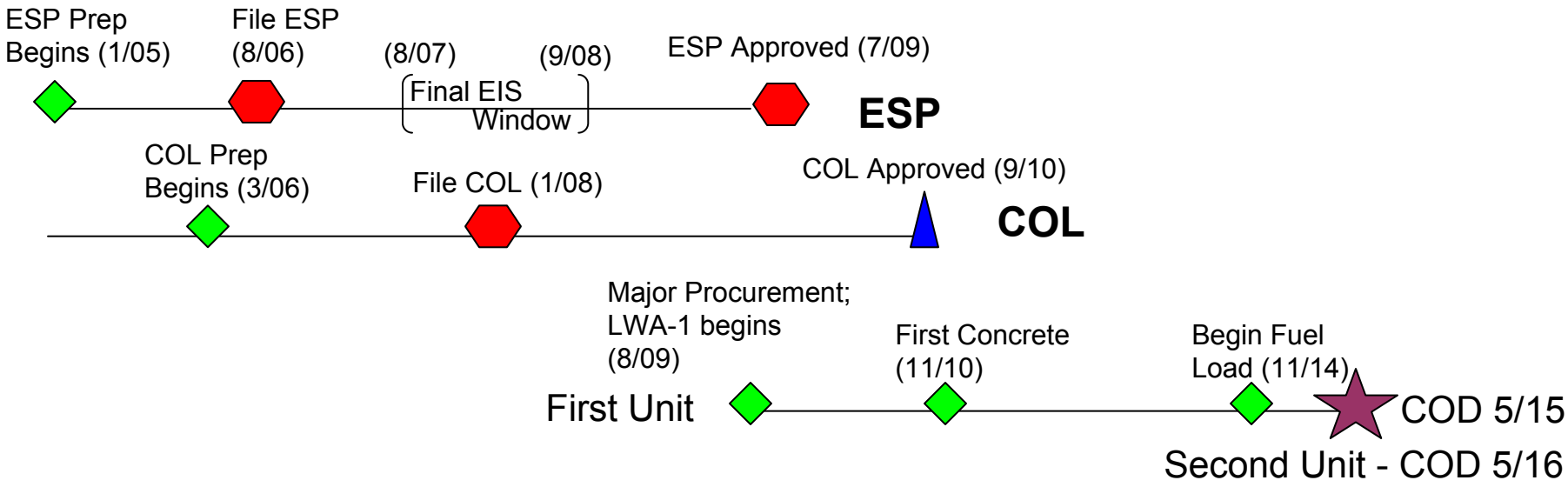
48 Month Construct Time – Westinghouse AP-1000 Technology



Southern's Strategy

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- Develop ESP and COL for two Westinghouse AP1000 units at Vogtle
- Improve ESP process based on lessons learned
- Provide strong support of NuStart process to maximize benefits for Vogtle COL
- Target first unit operation in mid-2015
- Working on joint ventures with other utilities on Cherokee and Bellefonte nuclear sites

Current Activities

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- ALWR project support activities involving the Vogtle site have begun.
  - Environmental Studies
  - Threatened & Endangered Species Report
  - Cultural Resource Studies
  - Observation Well Installation
  - Seismic Borings/Studies
  - Bathymetric Survey
- License Renewal application to be submitted in June 2007; 20 year extension would allow:
  - Unit 1 to operate until 2047
  - Unit 2 to operate until 2049

Co-owner Issues

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- Current Vogtle units are jointly owned by:
  - Georgia Power Company (GPC),
  - Oglethorpe Power Corporation (OPC),
  - Municipal Electric Authority of Georgia (MEAG), &
  - City of Dalton, Georgia
- Development agreement with co-owners to support an option to participate in the new units proposed in the Vogtle ESP is in place.
- All current co-owners are presently participating; level of participation to be confirmed by late 2007/early 2008.
- The presence of co-owners introduces some complications relative to certain aspects of the EIS process.
- OPC plans to obtain financing through RUS, a federal agency. This request represents a major federal action under NEPA for which RUS must develop an EIS.

RUS Issues

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- RUS Regulations 7 CFR Part 1794 require an environmental review for "approval of financial assistance pursuant to electric, telecommunications, water and waste programs…" (1794.3)
- "Applications for financial assistance for proposed actions that may significantly affect the quality of the human environment shall require the preparation of an EIS…An EIS will normally be required for: new electric generating facilities of more than 50 MW…All new associated facilities and related electrical power lines shall be covered in the EIS…" (1794.25(a)(1))
- RUS EIS shall be prepared in accordance with 40 CFR Part 1502 (NEPA Regulations) (1794.61)
- Subpart H allows RUS to adopt environmental documents prepared by other Federal agencies, such as NRC. Specifically, 1794.70 states "where applicants participate in proposed actions for which an EA or EIS has been prepared for another Federal agency, RUS may adopt the existing EIS in accordance with 40 CFR 1506.3"

NRC/RUS Interaction

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- Both agencies have requirements to complete an EIS consistent with NEPA regulation
- Although each agency has regulations and/or guidance for preparing an EIS, both draw on NEPA as a common source
- NRC implements NEPA through 10 CFR Parts 50, 51 & 52 and NUREG-1555. RUS regulations reference the CEQ regulation 40 CFR 1502 and RUS Guidance Document Bulletin 1794A-603.
- Each agency has provisions for participating with other Federal agencies in preparation of an EIS.
- The main issue before us is to determine how to develop an EIS that satisfies the needs of both NRC and RUS, and meets the requirements of NEPA.

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QUESTIONS?

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