



Combined Construction and Operating License (COL)

Summary: All seventeen COL applications submitted have been docketed for NRC review. NRC has suspended review of four COL applications pending technology review or a shift in the utility's resources. A total of twenty power companies, of which one remains unidentified, intend to submit 23 license applications for 34 units. The Reference COL (R-COL) application has been submitted for all five reactor designs; the 18 subsequent COLs (S-COLs) will incorporate the corresponding R-COL application by reference, noting any site-specific departures. No COLs have been issued to date.

| | UTILITY | SITE/LOCATION | | REACTOR/ NO. UNITS | | COLA DATES | | REVIEW PHASE | |
|----------------------------|----------------------------|-------------------------|----|--------------------------|---|------------|----------|---------------------|-----------------------|
| | | | | | | Submitted | Docketed | Safety ⁴ | Environ. ⁵ |
| COL Applications Submitted | STP Nuclear Operating Co. | South Texas Project | TX | ABWR ¹ | 2 | 9/07 | 11/29/07 | Ph. 1 | Ph. 2 |
| | TVA (NuStart) | Bellefonte | AL | AP1000 | 2 | 10/07 | 1/18/08 | Ph. 1 | Ph. 2 |
| | Dominion Energy | North Anna | VA | ESBWR ¹ | 1 | 11/07 | 1/28/08 | Ph. 2 | Ph. 3 |
| | Duke Energy | William States Lee | SC | AP1000 | 2 | 12/07 | 2/25/08 | Ph. A | TBD |
| | Progress Energy | Shearon Harris | NC | AP1000 | 2 | 2/08 | 4/17/08 | Ph. A | Ph. 2 |
| | Entergy (NuStart) | Grand Gulf | MS | Unspecified ² | 1 | 2/08 | 4/17/08 | Suspended | Suspended |
| | UniStar (Constellation) | Calvert Cliffs | MD | EPR ¹ | 1 | 3/08 | 6/3/08 | Ph. 1 | Ph. 1 |
| | Southern Nuclear | Vogtle | GA | AP1000 ¹ | 2 | 3/08 | 5/30/08 | Ph. 1 | Ph. 2 |
| | SCE&G | V.C. Summer | SC | AP1000 | 2 | 3/08 | 7/31/08 | Ph. A | Ph. 1 |
| | Progress Energy | Levy County | FL | AP1000 | 2 | 7/30/08 | 10/6/08 | Ph. A | Ph. 1 |
| | Exelon Generation | Victoria County | TX | ABWR | 2 | 9/3/08 | 10/30/08 | Suspended | Suspended |
| | DTE Energy | Fermi | MI | ESBWR | 1 | 9/18/08 | 11/25/08 | TBD | TBD |
| | Luminant (TXU) | Comanche Peak | TX | US-APWR ¹ | 2 | 9/19/08 | 12/2/08 | Ph. 1 | Ph. 1 |
| | Entergy | River Bend | LA | Unspecified ² | 1 | 9/25/08 | 12/4/08 | Suspended | Suspended |
| | AmerenUE (UniStar) | Callaway | MO | EPR | 1 | 7/24/08 | 12/12/08 | TBD | TBD |
| | UniStar (Constellation) | Nine Mile Point | NY | EPR | 1 | 9/30/08 | 12/12/08 | Suspended | Ph. 1 |
| | PPL (UniStar) | Bell Bend | PA | EPR | 1 | 10/10/08 | 12/19/08 | TBD | TBD |
| Planned COL Applications | Alternate Energy (UniStar) | Hammett | ID | EPR | 1 | 2009 | | N/A | |
| | Amarillo Power (UniStar) | Vicinity of Amarillo | TX | EPR | 2 | 2009 | | N/A | |
| | Florida Power and Light | Turkey Point | FL | AP1000 | 2 | 6/30/09 | | N/A | |
| | Transition Power | Blue Castle | UT | Unspecified | 1 | 2010 | | N/A | |
| | Unidentified Utility 'A' | Unspecified | - | Unspecified | 1 | 2010 | | N/A | |
| | Southern Nuclear | Unspecified, greenfield | - | Unspecified | 1 | 2011 | | N/A | |

¹ Reference COL Application (R-COL) ² COLA submitted for ESBWR but utility considering different technologies ³ NRC Review deferred to focus on R-COL

4 Safety Review Phases

R-COL: *Ph 1* Issue RAIs *Ph 2* SER w/ Open Items *Ph 3* ACRS Review *Ph 4* Advanced SER/ No OI *Ph 5* ACRS Review *Ph 6* Final SER

S-COL: *Ph A* Issue RAIs and supplemental RAIs *Ph B* Advanced SER/ No OI *Ph C* ACRS Review *Ph D* Final SER

5 Environmental Review Phases: *Ph 1* Environmental Scoping Report *Ph 2* Draft EIS *Ph 3* Public comment *Ph 4* Final EIS

Reactor Design Certification (DC)

Summary: Two reactor designs are certified; three new designs and one amendment are under NRC review.

- GE ABWR – Certified in 1997 (10CFR52 App A).
- Westinghouse AP1000 – Certified 2005 (10CFR52 App D). A modification to the certified design was docketed January 18, 2008, and is currently under NRC review with rulemaking currently scheduled for August 2011.
- GE ESBWR – Under NRC certification review, application docketed December 2005.
- AREVA US-EPR – Submitted December 12, 2007, and docketed February 25, 2008.
- Mitsubishi Heavy Industries US-APWR – Submitted December 31, 2007, and docketed February 29, 2008

Early Site Permits (ESP)

Summary: Three ESPs issued, one utility ESP application is currently under NRC review:

- The following ESPs have been issued: Exelon – Clinton (IL), 3/15/07; Entergy – Grand Gulf (MS), 4/5/07; Dominion – North Anna (VA), 11/ 27/07.
- Under NRC review: Southern – Vogtle site (GA). Final EIS issued August 18, 2008; SER issued November 18, 2008, and a Commission decision expected in late 2009
- Duke notified NRC of two possible ESP applications at Oconee County (SC) and/or Davie County (NC); no dates provided.
- Unidentified power company announced plans to submit an ESP application in fiscal year 2010.



New Nuclear Plant Orders

Summary: Four plant construction contracts have been initiated; nine power companies have ordered large component forgings from three reactor vendors for potential nuclear plants; one vendor ordered other large equipment; two vendors are building large fabrication facilities.

Long-Lead Equipment Orders: Large forging orders initiated by AREVA, GE-Hitachi, Toshiba and Westinghouse; Westinghouse has also ordered reactor coolant pumps and containment vessels.

- Progress, SCE&G, and Southern have contracted with Westinghouse for long-lead component forgings.
- Dominion, Entergy, and Exelon have contracted with GE-Hitachi for long-lead component forgings.
- AmerenUE and UniStar have contracted with AREVA for long-lead component forgings.
- NRG Energy signed an agreement with Toshiba for long-lead component forgings.
- Japan Steel Works currently only ultra-large forging vendor worldwide – capacity limited; AREVA, Lehigh Heavy Forge, BWXT and Russia's Uralmash-Izhora Group (OMZ) reportedly developing large forging capabilities.
- Areva and Northrop Grumman plan to build a facility in Newport News, VA to manufacture heavy components for the EPR.
- Shaw and Westinghouse plan to build a facility near Lake Charles, LA to fabricate structural and equipment modules for the AP1000

Plant Construction Contracts: Engineering, Procurement and Construction (EPC) contracts have been signed for four plants.

- Progress Energy with Westinghouse and Shaw Group for two AP1000s at Levy County.
- Southern Nuclear with Westinghouse and Shaw Group for two AP1000s at Vogtle. Start of early site construction is delayed 6 months pending resolution of technical issue pertaining to soil.
- SCE&G and Santee Cooper with Westinghouse for two AP1000s at V.C. Summer.
- STPNOC with Toshiba for two ABWRs at South Texas Project.

Spent Fuel Disposal Contracts: Standard DOE contract for disposal of spent fuel and radioactive waste available.

- Contracts under 10 CFR Part 961 available October 31, 2008.
- Two COL applicants, Duke Energy and Southern Nuclear Co., publicly announced signing of disposal contracts with DOE.

New Plant Construction, Operation, Deferral

Summary: TVA proceeding towards completion of Watts Bar Unit 2 and Bellefonte Units 1 and 2.

New Nuclear Plants under Construction: TVA resumed construction-related activities at two mothballed sites:

- Watts Bar 2, near Spring City, TN, resumed at a total cost of \$2.5 billion with an estimated completion date of 2013.

- Construction permits have been reinstated for Bellefonte Units 1 and 2 near Scottsboro, AL; no work underway.

New Nuclear Plant Begin Operation: None.

Deferred: None.

Federal Financial Incentives

Summary: EPCRA 2005 incentives are at various stages of development: two rules issued and one notice published.

Standby Support: Rule issued, one industry request for conditional agreements to date, no contract issued.

- Final Rulemaking Issued August 2006.
- Published Standard Conditional Agreement September 2007.
- DOE released on-line instructions for requesting Conditional Agreement December 2007.
- One request for a Conditional Agreement was received in September 2008
- One Notice of Intent to Request a Conditional Agreement was received in 2008 and a second in February 2009.
- One Notice of Intent received in 2008 has since been withdrawn.
- Expect first DOE approval for standby support contract in 2011.

Production Tax Credits: Notice issued.

- Internal Revenue Bulletin 2006-18 published May 2006.
- Modified Guidance on Tax Credit may be issued by early 2009.

Nuclear Energy Facility Loan Guarantees: Congress provided DOE with authority to issue \$20.5 billion in guaranteed loans.

- DOE issued solicitations for \$18.5 billion in loan guarantees for new nuclear power facilities and \$2 billion for the "front end" of the nuclear fuel cycle on June 30, 2008.
 - Fifteen power companies have submitted applications, requesting a total of \$93 billion in loans to be guaranteed, by the Part II deadline of 12/19/08. The applications cover 10 sites with a total of 16 reactors, capable of providing 22 GW in generating capacity
 - DOE has narrowed the power facilities under consideration for loan guarantees to five applicants, with a total of nine reactors
 - Two companies submitted \$4 billion in loan guarantee applications for two front-end fuel cycle facilities, and followed up with Part II applications by the 12/2/08 deadline.