

News Updates

- ★ On February 20, Secretary Moniz announced the issuance of loan guarantees totalling approximately \$6.5 billion to Georgia Power Company and Oglethorpe Power Company for the construction of two new nuclear reactors at the Alvin W. Vogtle Electric Generating Plant. The Department continues to work on the remaining conditional commitment for a \$1.8 billion loan guarantee to Municipal Electric Authority of Georgia, the third major owner of the new reactors. The loan guarantee is expected to save Georgia Power customers over \$200 million on electricity costs.
- ★ On March 10, Georgia Power announced the successful placement of the CA20 module into the Plant Vogtle unit 3 nuclear Island. This was a major construction milestone that required the use of one of the largest cranes in the world to set the 2.2 million pound module into position.

Regulatory Status

- ★ Eighteen Combined Construction and Operating License (COL) applications have been docketed: two have received COLs; eight (totaling 12 nuclear reactors) remain under active Nuclear Regulatory Commission (NRC) review, and 8 have been suspended¹ due to utility economic considerations. The Calvert Cliffs application continues to face foreign ownership issues. The Reference COL (R-COL) application has been submitted for five reactor designs; subsequent COLs (S-COLs) will incorporate the corresponding R-COL application by reference, noting any site-specific departures. Southern Nuclear's Vogtle Units 3 and 4 and SCE&G's VC Summer Units 2 and 3 have received COLs.

¹ Bellefonte 3&4, Callaway 2, Grand Gulf 3, River Bend 3, Victoria County 1&2, Shearon Harris 2&3, Comanche Peak 2, Nine Mile Point (later withdrawn)

| | UTILITY | SITE/LOCATION | REACTOR/ NO. UNITS | COLA DATES | | | REVIEW PHASE IN PROGRESS | |
|-------------------------|---------------------------|------------------------|-----------------------|------------|----------|----------|-----------------------------|-----------------------|
| | | | | Submitted | Docketed | Issued | Safety ³ | Environ. ⁴ |
| Issued | Southern Nuclear | Vogtle GA | AP1000 2 | 03/31/08 | 05/30/08 | 02/10/12 | Completed | Completed |
| | SCE&G | V.C. Summer SC | AP1000 2 | 03/27/08 | 07/31/08 | 04/10/12 | Completed | Completed |
| Active COL Applications | Duke Energy | Levy FL | AP1000 2 | 7/30/08 | 10/6/08 | - | Ph. D | Completed |
| | STP Nuclear Operating Co. | South Texas Project TX | ABWR ² 2 | 9/20/07 | 11/29/07 | - | Ph. 4 | Completed |
| | UniStar | Calvert Cliffs MD | US-EPR ² 1 | 3/14/08 | 6/3/08 | - | Ph. 2 | Completed |
| | DTE Energy | Fermi MI | ESBWR ² 1 | 9/18/08 | 11/25/08 | - | Ph. 2 | Completed |
| | Duke Energy | William States Lee SC | AP1000 2 | 12/13/07 | 2/25/08 | - | Ph. B | Completed |
| | Florida Power and Light | Turkey Point FL | AP1000 2 | 6/30/09 | 9/4/09 | - | Ph. A | Ph. 2 |
| | PPL (UniStar) | Bell Bend PA | US-EPR 1 | 10/10/08 | 12/19/08 | - | Ph. A | Ph. 2 |
| | Dominion Energy | North Anna VA | ESBWR 1 | 11/27/07 | 1/28/08 | - | Under Review | Under Review |

² Reference COL Application (R-COL)

³ Safety Review: **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

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



Small Modular Reactors

- ★ Small modular reactors are defined as those having a capacity of less than 300 MWe and are transportable to a site by truck, barge, or rail. Nine SMR vendors have initiated contact with the NRC regarding their reactor designs.

| | COMPANY | REACTOR | SIZE (MWE) | APPLICATION | EXPECTED DC SUBMITTAL DATE |
|----------------------|-------------------------------|-------------|------------|-------------|----------------------------|
| Light Water Reactors | Babcock & Wilcox mPower, Inc. | mPower SMR | 180 | DC/CP | TBD |
| | Holtec International | SMR-160 | 160 | DC | Q4 CY 2016 |
| | NuScale Power, LLC | NuScale SMR | 45 | DC | Q3 CY 2015 |
| | Westinghouse Electric Co. | W-SMR | 225 | DC | TBD |

Reactor Design Certification (DC)

Summary: Two reactor designs that are being considered for future builds in the U.S. are certified and two renewal applications are under NRC review.

- ★ AREVA US-EPR – Submitted December 12, 2007, and docketed February 25, 2008; certification schedule is under review.
- ★ GEH ESBWR – Final Design Approval in March 2011; rulemaking expected 2014.
- ★ Mitsubishi Heavy Industries US-APWR – Submitted December 31, 2007 and docketed February 29, 2008; MHI has requested a deferral of the review due to their work on reactor restarts in Japan.
- ★ Korea Electric Power Corporation (KEPCO) APR1400 – Pre-application interactions continue. Design certification application submitted on September 30, 2013; NRC declined to docket the application at this time due to lack of sufficient technical detail.
- ★ GEH ABWR – Certified in 1997. Toshiba and GEH have also separately submitted Design Certification renewal applications that are currently under review.
- ★ Westinghouse AP1000 – Amended design certified on December 30, 2011.

Early Site Permits (ESP)

Summary: Four ESPs issued; one under review:

- ★ PSEG submitted an ESP application for its nuclear plant site in Salem County, New Jersey, on May 25, 2010. The final environmental impact statement (EIS) is expected in mid-2015; the safety review schedule is under review due to problems related to documentation of the hydrology portion of the ESP application.
- ★ 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; Southern – Vogtle site (GA), 08/26/09.

Decommissioning

- ★ Four plants have announced decommissioning plans. Entergy plans to close its single unit Vermont Yankee plant in late 2014; sustained low natural gas prices, financial impacts of cumulative regulations, and the wholesale market structure all contributed to the company's decision to shutter the plant. Dominion's closure of its single unit Kewaunee plant in May 2013 also followed from low wholesale electricity prices; closures at San Onofre and Crystal River were both due to problems related to steam generator replacements. There are currently 101 reactor units operating.



New Plant Construction Progress

Summary: Full nuclear construction has begun for V.C. Summer Units 2 and 3 and Vogtle Units 3 and 4. TVA is proceeding with the completion of Watts Bar 2.

New Nuclear Plants under Construction: COLs for Vogtle Units 3 and 4 and V.C. Summer Units 2 and 3 have been issued.

Vogtle

★ Unit 3: The CA20 auxiliary components module has been installed in the Unit 3 nuclear island. At over 2 million pounds, this is the largest single module used in construction of the plant. The CA04 reactor vessel module has also been installed.

Unit 4: The Unit 4 CR10 module (cradle for the containment vessel) has been assembled and lifted into place. Containment Vessel Bottom Head (CVBH) placement is planned for this quarter.



Vogtle Unit 3 CA20 module removal from module assembly building and placement on the Nuclear Island (Courtesy of Georgia Power/Southern Company)

VC Summer

★ Unit 2: CA20 module is being assembled. Concrete fill has been added to support the Containment Vessel Bottom Head (CVBH). Progress continues on assembly of containment vessel.

Unit 3: Construction of unit 3 CVBH is continuing.



VC Summer Unit 2 cooling tower and Unit 3 basemat placement (Courtesy of SCANA)

Watts Bar 2

★ Most systems are scheduled to be released for pre-operational testing this Spring. The Essential Raw Cooling Water, Component Cooling Water, and flood mode boration systems have been completed and were turned over for pre-operational testing ahead of schedule. The project continues to track to a most likely commercial operation date of December 2015.

Expected Operation Dates

- ★ TVA expects Watts Bar 2 to be completed by late 2015.
- ★ Southern Nuclear's Vogtle Units 3 and 4 are expected to come online in late 2017 and 2018, respectively.
- ★ SCE&G's VC Summer Units 2 and 3 are expected to come online in late 2017 and 2019, respectively.

