

News Updates

- ★ Luminant has requested a suspension of the NRC’s review of its Comanche Peak Combined Construction and Operating License (COL) application. The company cited impacts to the review schedule of the Mitsubishi Heavy Industries US Advanced Pressurized Water Reactor (US-APWR) due to the vendor’s desire to refocus its resources to reactor restarts in Japan as well as low electricity prices driven by low natural gas prices as reasons for the suspension.
- ★ Unistar Nuclear Operating Co. has formally withdrawn its COL application from the NRC to build and operate Areva’s U.S. EPR at its Nine Mile Point site in Oswego, NY. In late 2009, Unistar requested a suspension of the application review due to financial concerns. Low electricity prices and an inability to obtain a loan guarantee for the project were factors in Unistar’s decision to withdraw the application.
- ★ The Nuclear Regulatory Commission has formally extended the expiration date of the construction permit for the Watts Bar 2 reactor to September 2016. Tennessee Valley Authority (TVA) requested the extension in 2012 following lower than expected initial construction productivity and to allow for additional time to address regulatory changes resulting from the Fukushima Daiichi accident. TVA’s “most likely estimate to complete” date remains December 2015.
- ★ The Department of Energy announced an award to NuScale Power LLC in December to support a new project to design, certify and help commercialize innovative small modular reactors (SMRs) in the United States. The NuScale Power Module design allows for incremental units of 45MWe to be constructed up to a maximum of 540MWe (12 units) at a given plant.

Regulatory Status

- ★ Eighteen Combined Construction and Operating License (COL) applications have been docketed, eight of which (totaling 12 nuclear reactors) remain under active Nuclear Regulatory Commission (NRC) review. NRC reviews of eight applications were suspended due to utility economic considerations. Review of the Fermi and South Texas Project applications could continue after submittal of additional technical information; in addition, the South Texas Project and Calvert Cliffs applications 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.

	UTILITY	SITE/LOCATION	REACTOR/ NO. UNITS	COLA DATES			REVIEW PHASE IN PROGRESS	
				Submitted	Docketed	Issued	Safety ⁴	Environ. ⁵
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 ¹ 2	9/20/07	11/29/07	-	Ph. 4	Completed
	Luminant (TXU)	Comanche Peak TX	US-APWR ¹ 2	9/19/08	12/2/08	-	Suspended	Suspended
	UniStar	Calvert Cliffs MD	US-EPR ¹ 1	3/14/08	6/3/08	-	Ph. 2	Completed
	DTE Energy	Fermi MI	ESBWR ¹ 1	9/18/08	11/25/08	-	Ph. 4	Completed
	Duke Energy	William States Lee SC	AP1000 2	12/13/07	2/25/08	-	Ph. B	Phase 2
	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
	Progress Energy	Shearon Harris NC	AP1000 2	2/19/08	4/17/08	-	Suspended	Suspended
	Dominion Energy	North Anna VA	ESBWR 1	11/27/07	1/28/08	-	Under Review	Under Review

¹ Reference COL Application (R-COL)

⁴ Safety Review: **R-COL** → **Ph 1** Issue RAls **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 RAls and supplemental RAls **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



- ★ 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. Four of these designs are domestic light water-based designs.

	COMPANY	REACTOR	SIZE (MWE)	APPLICATION	EXPECTED SUBMITTAL DATE
Light Water Reactors	Babcock & Wilcox mPower, Inc.	mPower SMR	180	DC	Q3 CY 2014
	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	Q2 CY 2014
Advanced Non-LWRs	Department of Energy	NGNP	TBD	COL	TBD
	GE-Hitachi	PRISM	311	DC	TBD
	Gen4 Energy	G4M	25	DC	TBD
	PBMR Ltd.	PBMR	165	DC	TBD
	Toshiba Corp.	4S	10	TBD	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 U.S.-EPR – Submitted December 12, 2007 and docketed February 25, 2008; certification schedule is under review.
- ★ GE-Hitachi (GEH) ESBWR – Final Design Approval in March 2011; rulemaking expected 2014.
- ★ Mitsubishi Heavy Industries U.S.-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 safety evaluation report (SER) and environmental impact statement (EIS) are expected in the first quarter of 2015.
- ★ 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.



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

Vogtle

- ★ Engineering, procurement and construction of the facility is approximately 50 percent complete, based on contractual milestone completion. Cooling towers for both units are more than 50% complete.
- Unit 3: Fabrication and setting of the Unit 3 containment vessel bottom head (CVBH) is complete. Module CA04 (the reactor vessel housing module) has been placed in the CVBH.
- Unit 4: Nuclear island concrete basemat is in place. Construction of unit 4 CVBH is essentially complete.



Vogtle Unit 3 CA04 module placement and Unit 3 cooling tower
(Courtesy of Georgia Power/Southern Company)

VC Summer

- ★ Unit 2: Module CA04 (the reactor vessel housing module) has been placed in the CVBH. Fabrication and placement of condensers and turbine building support structures continue. Fabrication and testing of step up transformers has been completed. Cooling tower 2A structural work is substantially complete.
- Unit 3: Nuclear island basemat placement is complete. Construction of Unit 3 CVBH is underway. Work is continuing on the cooling towers. Critical path for completion of both units continues to be defined by progress in delivery of submodules from the Chicago Bridge and Iron (CB&I) Lake Charles facility and module assembly and completion of concrete structures on site.



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

Watts Bar 2

- ★ Project is transitioning from performing bulk construction work to completion, testing, and turnover of individual systems; the physical plant is approximately 80% complete. 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.

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 2017 and 2018, respectively.
- ★ SCE&G's VC Summer Units 2 and 3 are expected to come online in late 2017 and 2019, respectively.
- ★ Florida Power and Light's Turkey Point Units 6 and 7 originally expected to come online in 2022 and 2023. COLA schedule is under review; changes are likely to result in project delays.
- ★ Duke Energy's Levy site expects the first unit to come online in 2024 and the second unit to follow 18 months later.
- ★ Duke Energy has set a target date of 2024 for completion of the first unit at the William States Lee site.
- ★ Dominion has set an "earliest possible" in-service date of 2024 for North Anna 3.

