

News Updates

- ★ On November 20, 2012, the Department of Energy announced that it had selected the mPower America team, led by Babcock and Wilcox (B&W) partnered with Tennessee Valley Authority and Bechtel, as a recipient for Government cost-shared funding as part of its Small Modular Reactor Licensing Technical Support program. Negotiations with B&W are complete and the award is imminent. On March 11, 2013, the Department issued a follow-on solicitation open to other companies and manufacturers focused on furthering small modular reactor efficiency, operations and design.
- ★ On January 10, 2013, NRC published the Final Environmental Impact Statement for the Enrico Fermi Unit 3 Combined License application. An advanced Safety Evaluation Report (SER) with no open items is scheduled for completion in mid-2014 with a Final SER following in January 2015. No target date has been set for license issuance.

Regulatory Status

- ★ Eighteen Combined Construction and Operating License (COL) applications have been docketed, ten of which (totaling 16 nuclear reactors) remain under active NRC review. NRC reviews of five 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	Progress 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	-	Ph. 2	Completed
	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. B	Completed
	Duke Energy	William States Lee SC	AP1000 2	12/13/07	2/25/08	-	Ph. B	Ph. 4
	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	-	Ph. B	Ph. 2
	Dominion Energy	North Anna VA	US-APWR 1	11/27/07	1/28/08	-	Ph. A	Ph. 2

¹ Reference COL Application (R-COL)

⁴ 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

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 having a capacity of less than 300 MWe. 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 CP	Q3 CY 2014 TBD
	Holtec International	SMR-160	160	CP DC	Q4 CY 2016 March 2015
	NuScale Power, LLC	NuScale SMR	45	DC	2015
	Westinghouse Electric Co.	W-SMR	225	DC	Q2 CY2014
Advanced Non-LWRs	Department of Energy	NGNP	TBD	COL	FY2013
	GEH	PRISM	311	DC	TBD
	Gen4 Energy	G4M	25	DC	TBD
	PBMR Ltd.	PBMR	165	DC	FY2013
	Toshiba	4S	10	TBD	TBD

Reactor Design Certification (DC)

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

- ★ AREVA US-EPR – Submitted December 12, 2007, and docketed February 25, 2008; rulemaking expected in December 2014.
- ★ GE ESBWR – Final Design Approval in March 2011; rulemaking expected 2013.
- ★ Mitsubishi Heavy Industries US-APWR – Submitted December 31, 2007, and docketed February 29, 2008; rulemaking expected in 2016.
- ★ KEPCO APR1400 – Pre-application interactions began in January 2012. Design certification application anticipated in 2013.
- ★ GE 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 SER and EIS are expected in mid to late 2014.
- ★ 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 the 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

- ★ Assembly and welding of unit 3's containment vessel bottom head is complete. Assembly of unit 4's containment vessel bottom head more than 50% complete. The first ring of unit 3's containment vessel, which will attach to the bottom head and form part of the vertical wall of the containment vessel, is approximately 25 percent complete. Unit 3 Turbine building foundation is complete; pouring of nuclear island basemat concrete has also been completed. The 460-ton CR10 cradle for the containment vessel at Vogtle-3 is expected to be in place by mid-April.



Vogtle Unit 3 Nuclear Island showing nuclear island basemat pour and Containment Vessel with exterior rebar installed (Courtesy of Southern Company)

VC Summer

- ★ Welding is complete on the unit 2 bottom containment vessel head and work is progressing on the cooling towers. The switchyard is on schedule to be energized in the first half of 2013. Following successful resolution of regulatory concerns over rebar design, pouring of nuclear island concrete basemat has been completed.



VC Summer Unit 2 Lower Bowl Assembly and nuclear island concrete placement (Courtesy of SCANA)

Watts Bar 2

- ★ Work is progressing on installing valves, piping, cabling, conduit supports and tubing supports.

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 2017 and 2018, respectively.
- ★ Florida Power and Light's Turkey Point expects Unit 6 to come online by 2022 and Unit 7 by 2023 .
- ★ Progress 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 2022 for completion of the first unit at the William States Lee site.

