QUARTERLY NUCLEAR POWER DEPLOYMENT SUMMARY OCTOBER 2014

News Updates

- ★ The NRC has approved a final rule on the continued storage of spent fuel and has lifted a two year suspension on final licensing actions on plant licenses and license renewals. The rule incorporates a Generic Environmental Impact Statement that can be referenced by the environmental reviews for site licenses.
- ★ The NRC has published the final rule certifying the General Electric-Hitachi Economic Simplified Boiling Water Reactor (ESBWR); the rule will go into effect in November. The 1,594 Megawatt reactor is one of the most advanced designs currently available and employs passive safety features to maintain core cooling in the event of an accident.

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 suspended[1] 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[1] Bellefonte 3&4, Callaway 2, Grand Gulf 3, River Bend 3, Victoria County 1&2 (later withdrawn), Shearon Harris 2&3, Comanche Peak 3&4, Nine Mile Point 3 (later withdrawn)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. 4	Completed
	DTE Energy	Fermi	MI	ESBWR [2]	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	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	-	Ph. 4	Complete

[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 2016
	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 – Design certified; final rule will become effective November 14.
- ★ 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. Korea Hydro and Nuclear Power Company and KEPCO plan to submit an application in late 2014.
- ★ 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 September 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 100 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.

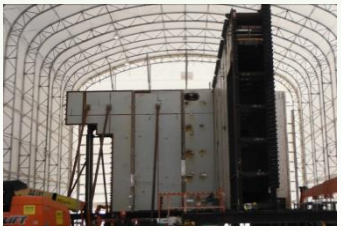
Vogtle

Unit 3: Concrete has been placed inside containment up to an elevation of over 80 feet; this placement forms the floor of the steam generator compartment and chemical and volume control system room. CA05 structural module has been placed in containment.
Unit 4: 360 cubic yards of concrete have been placed in containment, forming the base of the reactor cavity.

Unit 3 nuclear island and cooling tower; progress on Unit 4 cooling tower
(Courtesy of Georgia Power/Southern Company)

VC Summer

Unit 2: First cooling tower is structurally substantially complete. Several pieces of equipment (auxiliary boiler, heat exchangers, feed water heaters) have been set inside the turbine building. CA05 module has been fully assembled and is ready for placement.
Unit 3: First cooling tower is structurally substantially complete. Turbine building modules are being assembled.



Completed Unit 2 CA05 module and progress on Unit 3 turbine building(Courtesy of SCANA)

Watts Bar 2

★ Construction is more than 90% complete; reactor vessel has been fully assembled; 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 2018, respectively.