

## News Updates

- ★ Dominion Resources, Inc. has informed the NRC that Virginia Power will amend its COL application to reflect the ESBWR technology by the end of 2013. In 2009 Dominion dropped the ESBWR from its COLA after failing to reach a commercial agreement with General Electric-Hitachi. A COL is expected no earlier than late 2015. Virginia Power has not yet committed to building a new nuclear unit at North Anna.
- ★ NRC has determined that the latest revision to the South Texas Project COLA does not alleviate foreign interest concerns; the staff found that despite having only a 10% ownership stake in Nuclear Innovation North America LLC (NINA), Toshiba American Nuclear Energy Corporation's financing of all project costs effectively resulted in control and domination of NINA. The COL review remains active while NINA considers its options to move forward.
- ★ Duke Energy Progress Inc. has requested suspension of the Shearon Harris COLA review; the projected commercial operation dates of the proposed units no longer fall within the 15 year planning window used to forecast need for power by the public utilities commissions of North and South Carolina.
- ★ NRC has published a new estimate for completing the review of Duke Energy's COL application for two AP1000 units at the William States Lee generating station in South Carolina. A July 22 letter to the company outlines a new schedule with a 3 year delay in the target date for holding the Commission's mandatory hearing on the staff's review. NRC budgetary limitations and the company's decision late last year to relocate the nuclear island were cited as reasons for the delay.
- ★ The schedule for design certification of Areva's US-EPR is under review following NRC's finding of lack of sufficient evidence of independence between safety related and non-safety related instrumentation and control systems. NRC staff has indicated that the complexity of the design has so far prevented successful demonstration of required levels of independence and diversity.

## Regulatory Status

- ★ Eighteen Combined Construction and Operating License (COL) applications have been docketed, nine of which (totaling 14 nuclear reactors) remain under active NRC review. NRC reviews of six 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 <sup>4</sup>	Environ. <sup>5</sup>
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 <sup>1</sup> 2	9/20/07	11/29/07	-	Ph. 4	Completed
	Luminant (TXU)	Comanche Peak TX	US-APWR <sup>1</sup> 2	9/19/08	12/2/08	-	Ph. 2	Completed
	UniStar	Calvert Cliffs MD	US-EPR <sup>1</sup> 1	3/14/08	6/3/08	-	Ph. 2	Completed
	DTE Energy	Fermi MI	ESBWR <sup>1</sup> 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	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
	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

<sup>1</sup> Reference COL Application (R-COL)

<sup>4</sup> Safety Review: **R-COL** → **Ph 1** Issue RAIs **Ph 2** SER w/Open Items **Ph 3** ACRS Review  
**S-COL** → **Ph A** Issue RAIs and supplemental RAIs

<sup>5</sup> Environmental Review Phases:

**Ph 1** Environmental Scoping Report

**Ph 4** Advanced SER/ No OI  
**Ph B** Advanced SER/ No OI  
**Ph 2** Draft EIS

**Ph 5** ACRS Review  
**Ph C** ACRS Review  
**Ph 3** Public comment

**Ph 6** Final SER  
**Ph D** Final SER  
**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	Q3 CY 2015
	Westinghouse Electric Co.	W-SMR	225	DC	Q2 CY2014
Advanced Non- LWRs	Department of Energy	NGNP	TBD	COL	TBD
	GEH	PRISM	311	DC	TBD
	Gen4 Energy	G4M	25	DC	TBD
	PBMR Ltd.	PBMR	165	DC	TBD
	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; certification schedule is under review.
- ★ 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

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

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

### Vogtle

- ★ Unit 3's Containment Vessel Bottom Head is completed and has been set in place on the Nuclear Island. First ring of unit 3 containment is complete, second ring (of three) is nearing completion. Unit 3 cooling tower is 40% complete. Unit 4 CVBH last reported at over 90% complete.



Vogtle Unit 3 CVBH in place and cooling tower under construction (Courtesy of Southern Company)

### VC Summer

- ★ Unit 2 Containment Vessel Bottom Head (CVBH) has been set in place on the CR10 module. Work is continuing on the cooling towers. Switchyard construction is complete. Delivery of CA01 module segments is behind schedule; this is a critical path activity as CA01 must be set before installation of CV ring segments can progress beyond the 1st ring.



VC Summer Unit 2 CVBH placement and completed switchyard (Courtesy of SCANA)

### Watts Bar 2

- ★ Work is progressing on installing valves, piping, cabling, conduit supports and tubing supports. Project is transitioning from performing bulk construction work to completion, testing, and turnover of individual systems. Several systems have been targeted for early completion. The Service Air system was the first system taken through the turnover process; the Essential Raw Cooling Water and the Component Cooling Water systems are scheduled for turnover this summer.

### 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 early 2018 and 2019, 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 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.
- ★ Progress Energy's Levy site expects the first unit to come online in 2024 and the second unit to follow 18 months later.

