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New Nuclear Reactor Sites Currently Under Consideration in the United States

(Updated October 28, 2005)

The United States Nuclear Regulatory Commission (NRC) in preparation for future new power reactor site selection, environmental qualification, construction and operation licensing has developed the early site permit (ESP) and combined operating license (COL) application processes for the nuclear industry.

COMBINED OPERATION LICENSE (COL)

According to NRC,

“A COL authorizes construction and conditional operation of a nuclear power facility.”

To date, no applications have been filed by any licensees with NRC. The nuclear power industry has announced its intent to file applications for combined construction and operation licenses of new reactors at the following sites:

1. **Progress Energy** has informed the NRC of its intention to submit a COL to build a new reactor at the currently operational single unit Shearon Harris reactor site near Raleigh, NC within the next two years.
2. **Duke Energy** has announced its intention to apply for a COL to build a new nuclear reactor somewhere in its service area and has been investing in its previously approved but abandoned Perkins site near Greensboro, NC. The Charlotte, N.C.-based utility is considering 14 possible sites in North Carolina and South Carolina and announcing a location in 2005.
3. **SCANA** and **Santee Cooper** have announced their intention in a joint venture to seek a new reactor site at an undisclosed site in South Carolina. SCANA's principal subsidiary is South Carolina Electric and Gas Co (SCE&G) while Santee Cooper is South Carolina's state-owned utility. SCE&G already works with Santee Cooper on nuclear generation at the V.C. Summer Nuclear Station near Jenkinsville, SC.
4. The **NUSTART** consortium that includes numerous U.S. nuclear power companies and reactor vendors along with the federally operated Tennessee Valley Authority announced two potential sites intended for COL submittals at the abandoned Bellefonte nuclear power plant construction site near Scottsboro, Alabama and the expansion of the operational single unit Grand Gulf nuclear site near Vicksburg, Mississippi. NUSART has been studying the Department of Energy's nuclear weapons production site in South Carolina for one or more new power reactors – supporting local nuclear booster's hopes for an “energy park” at the site.
5. Georgia's **Southern Company** announced its intention to expand the Vogtle reactor site in Waynesboro, GA in the summer of 2006 with either an application for an early site permit (ESP) or pre-combined operating license (COL) information that ultimately would become a part of a complete COL application.
6. **UniStar Nuclear**, a partnership between the Baltimore, MD-based Constellation Energy and French-owned Areva Inc. has announced its intent to build and operate a new reactor at the operational two unit Calvert Cliffs nuclear power station in Calvert County, Maryland on the shores of the Chesapeake Bay, southeast of Washington, DC. and a behemoth 1600 megawatt design in Scriba, NY that would expand the currently operational Nine Mile Point 1 & 2 and Fitzpatrick nuclear power station complex.

7. **Entergy Nuclear**, headquartered in New Orleans, LA, announced its intent to prepare and file a COL application for a new site adjacent to its currently operational single unit River Bend nuclear power station near St. Francisville, LA.

EARLY SITE PERMIT (ESP)

According to NRC *“The NRC can issue an ESP for approval of one or more sites for one or more nuclear power facilities separate from the filing of an application for a construction permit or combined license in accordance with 10 Code of Federal Regulation(CFR) Part 52. . An ESP is a partial construction permit and is, therefore, subject to all procedural requirements in 10 CFR Part 2 that are applicable to construction permits. Applications for ESPs will be reviewed according to the applicable standards set out in 10 CFR Parts 50 and 100 as they apply to applications for construction permits for nuclear power plants. Early site permits are good for 10 to 20 years and can be renewed for an additional 10 to 20 years. ESPs address site safety issues, environmental protection issues, and plans for coping with emergencies, independent of the review of a specific nuclear plant design.”*

Early site permit applications currently under review by the NRC to environmentally qualify construction sites without a utility commitment to construct a specific reactor design. However, an ESP permit does provide for site construction to include everything but the reactor building complex.

1. **Dominion** based in Richmond, VA has applied for an “Early Site Permit” at the current two unit North Anna nuclear reactor site on Lake Anna in Mineral, Virginia to environmentally qualify up to 2 additional new reactors.

2. **Exelon Nuclear** based in Chicago, IL has applied for the site expansion of the single unit Clinton nuclear power station in Clinton, Illinois.

3. **System Energy Resource Inc.** (SERI), a wholly owned subsidiary of **Entergy Nuclear** based in New Orleans, LA has submitted an application to environmentally qualify the site expansion of the Grand Gulf nuclear power station in Port Gibson, Mississippi for new reactor construction.

Compiled by Paul Gunter, Director, NIRS Reactor Watch Dog Project
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Nuclear Power Reactor Development Currently Under Discussion or Action November, 2005

Current tally includes early site permit, combined license processes and corporate statements of intent reported in the news. Please note the disproportionate focus on nuclear construction in the South.

State	location (NR = existing site*)	Corporation	# units (so far)
MD	Calvert Cliffs NR	UniStar Nuclear (Constellation + Areva)	1
VA	North Anna NR	Dominion	2
NC	Shearon Harris NR	Progress Energy	1
NC or SC ?	undisclosed Duke owns a previously licensed site called Perkins near Greensboro, NC where new activity has been observed. Cherokee County SC is also rumored	Duke	2
SC	undisclosed (new site)	SCANNA / Santee Cooper	?
GA	Vogtle NR	Southern Company	2
AL	Bellefont	NUSTART / TVA	?
MS	Grand Gulf NR	NUSTART / Entergy System Energy Resources Inc	1
LA	Adjacent to River Bend NR	Entergy	1
IL	Clinton NR	Exelon	1
NY	Nine Mile Point / Fitzpatrick NR	UniStar Nuclear (Constellation + Areva)	1 Extra large

- Existing reactor site locations are available at the U.S. Nuclear Regulatory Commission' web site "*List of Power Reactor Units*" : <http://www.nrc.gov/reactors/operating/list-power-reactor-units.html>

Source: Paul Gunter, Nuclear Information and Resource Service — See **New Nuclear Reactor Sites Currently Under Consideration in the United States** compiled from regulatory documents and news media.