

NUCLEAR POWER: Chattanooga hitches its economy to an atomic choo choo (Thursday, April 24, 2008)
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CHATTANOOGA, Tenn. -- A nuclear renaissance is taking root on the banks of the Tennessee River, the latest transformation for a city with a penchant for using energy innovation to retool its economy.

Founded in 1838 as a rail center and river port, Chattanooga became a smoke-belching iron and steel center before morphing into the central cog in President Franklin Roosevelt's Tennessee Valley Authority, one of the nation's atomic pioneers.

Since the early 1990s, the city has enjoyed a reputation for renewable energy investment, luring three major wind power development companies as well as a leading research institute dedicated to alternative-fuel vehicles.

Now, the city is going back to the future. It is poised for a second boom as a research, development and procurement hub for the nuclear power industry. Not since the 1970s, when Combustion Engineering employed nearly 6,000 workers here to support the nation's first fleet of nuclear power plants, has the city witnessed this kind of optimism about atomic energy.

"It's a welcome development," said J. Ed. Marston of the Chattanooga Area Chamber of Commerce. "This community has a long history with nuclear power, and most people are excited about its return" as a viable industry. "We also have an abundance of skilled workers ready to fill the jobs."

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Alstom is looking at a \$280 million expansion of its Chattanooga, Tenn., operations. Photo courtesy of Alstom.

Based on industry and government estimates, the Southeast could see in excess of \$50 billion in nuclear power investment over the next 30 years, with new plants planned in 10 states from Virginia to Texas.

While economic-development boosters across the region view such prospects with enthusiasm, critics of nuclear power remain skeptical about the promised atomic renaissance. They cite astronomical construction and labor costs for new power plants and worry about the fate of radioactive waste produced by new reactors.

But one thing is clear. If there's any nuclear power revival, this city is going to play a role. With its nexus of major interstate highways and navigation access to the Tennessee, Ohio and Mississippi river systems, east Tennessee offers logistical advantages for a revitalized nuclear power sector that few other areas can match.

"I think you can make a case that Chattanooga is a hub for commercial nuclear plant activity," said Mitch Singer, a spokesman for the Nuclear Energy Institute in Washington. "It will provide a very valuable template for the rest of the industry" -- in project management and as a location for key support industries and consultants.

Successful marketing

Fueled by TVA's own ambitious nuclear expansion agenda -- including the completion of as many as three new reactors within 60 miles of the city at Bellefonte, Ala., and Watts Bar, Tenn. -- Chattanooga has in recent months won major investments from two other leading players in the nuclear power sector.

Alstom, the French conglomerate with extensive experience in power systems development in both Europe and the United States, announced in December a \$280 million expansion of its Chattanooga operations, with a particular focus on servicing new and existing nuclear plants throughout the United States.

"We see that nuclear power is already coming back and will come back even stronger in the United States," Philippe Joubert, president of Alstom Power Systems, said in a telephone interview.

Chattanooga emerged as a leading contender for Alstom's expansion, he said, because of the region's long history with nuclear development, which includes the Energy Department's Oak Ridge National Laboratory near Knoxville, Tenn., and a successful marketing effort that positioned the region as a hub of energy innovation.

"The city is clearly entering a new way of looking at industry," Joubert said.

"We really feel we'll come here and be integrated in this new policy of the city," he added. "Our factory will be exemplary, the world's leader as a non-impacting facility on the environment in terms of its footprint and use of alternative energy."

Within days of announcing the Chattanooga expansion, Alstom inked a deal with UniStar Nuclear Energy to build four advanced steam turbines at the Tennessee facility for the Baltimore-based nuclear consortium's planned new plants in Maryland and New York.

The UniStar plants will be built on the French-designed Evolutionary Power Reactor (EPR), rolled out by Areva in the early 1990s, which has gained wide popularity throughout Europe and Asia. The EPR reactors are also proposed for new nuclear plants in Texas and Pennsylvania.

Westinghouse expansion

More recently, Pennsylvania-based Westinghouse Electric Co., developer of the highly touted AP1000 reactor, announced a \$9.5 million expansion of its Chattanooga Nuclear Services field office, citing the city's "central location, superior transportation network and highly trained engineers."

"Our people in Chattanooga made a substantial and well-founded case to maintain and grow our facility," Russell Bussard, Westinghouse's facilities and real estate manager, said in a statement announcing the addition of 52 engineering and technical jobs in east Tennessee.

Geography also factored into the Westinghouse expansion decision, as all of the announced AP1000 projects are slated for Southeastern sites. "That is where the load growth is going," said Vaughn Gilbert, a company spokesman. "It makes sense for facilities and capabilities to be in proximity to where the market is."

The emerging market for Westinghouse's AP1000 reactor technology includes TVA's Bellefonte proposal in north Alabama on behalf of the NuStart consortium; Duke Energy's William Lee Nuclear Station in Cherokee County, S.C.; SCANA Corp. and Santee Cooper's V.C. Summer Station in Jenkinsville, S.C.; Southern Co.'s Plant Vogtle expansion in Waynesboro, Ga.; and two projects sought by Raleigh-based Progress Energy -- the Harris Nuclear Plant expansion in New Hill, N.C., and a green site development in Levy County, Fla.

In addition to the AP1000 projects, Westinghouse recently signed a \$200 million contract with TVA to help complete construction on the second of two 1,180-megawatt reactors at its Watts Bar Nuclear Station in Spring City, Tenn.

The Watts Bar Unit 2 project was suspended in 1985 due to economic and environmental uncertainty over nuclear power projects, but last year TVA's board revived Unit 2's construction at a cost of \$2.5 billion. Westinghouse also was a core contractor in the restart of TVA's Browns Ferry Unit 1 reactor in north Alabama last year.

'Traditionally unstable industry'

But skeptics of nuclear energy's newfound promise say cities and regions that expect to cash in on a flourishing nuclear power sector should heed the lessons of the 1970s, when the industry collapsed under the weight of grandiose development plans, economic uncertainty and concerns about plant safety and environmental harm posed by radioactive releases.

Stephen Smith, executive director of the Knoxville-based Southern Alliance for Clean Energy, noted that TVA, perhaps more than other utilities, was "whip-sawed" by nuclear power's failed promises during the 1970s, resulting in "a massive debt load that they're still trying to get out from underneath."

Moreover, he said, while nuclear power is benign from an air pollution perspective, it poses other daunting environmental challenges, including the management and storage of radioactive wastes and reactors' thirst for huge water withdrawals.

"Given what we already know about drought in the Southeast, I wouldn't be too quick to allow five or 10 of these large new plants to be built along already vulnerable waterways," Smith said. "We saw just last year incidents in which power plants actually had to scale back production to avoid running into water problems."

Still, he said he does not begrudge Chattanooga's welcoming of an industry that requires highly skilled workers and pays healthy wages. "If they want to ride the nuclear boom-bust cycle, how could anybody argue with that?" Smith said. "I would just stress to the city's leaders to go back and look at their history and not pin too much of their economic fortunes on a traditionally unstable industry."

Growing smarter

Proponents of nuclear energy's revival stress that the lessons of the '70s and '80s are being kept very much in mind as utilities proceed with nuclear projects. While many first-generation nuclear power projects were speculative, they say, today's projects are based on sound planning and a much better understanding of electricity fuel options and their environmental implications.

Ashok Bhatnagar, TVA's senior vice president for nuclear generation development and construction, said the utility's aggressive nuclear expansion agenda is necessary to help meet the 2 percent annual growth in electricity demand across the Tennessee Valley region.

"We think right now that in a carbon-constrained world, nuclear offers very good options," Bhatnagar said. "It's not only emissions-free, but we've had proven, sustained performance from our existing units for the last two decades. They operate very consistently and safely and at a reasonable cost."

Elected officials also have said that the city's recent nuclear power investment is consistent with a broader nationwide shift toward cleaner energy, including the development of baseload electric power sources that do not contribute to global warming.

Bob Corker (R), the former Chattanooga mayor who was elected to the U.S. Senate in 2006 and serves on the Energy and Natural Resources Committee, has touted nuclear power as "a zero carbon producer," and "the type of power production we need to embrace for electricity."

The industry resurgence comes with the help of local lawmakers like Corker, Sen. Lamar Alexander (R), and Rep. Zach Wamp (R), whose district includes the Chattanooga metro area. All supported last year's energy spending bill providing more than \$970 million in appropriations for new nuclear power plant development.

"Nuclear should be part of the solution," Wamp told the Chattanooga Times-Free Press earlier this year. "You have to bring on new capacity, and nuclear does that quicker than other electricity-producing measures. We need a nuclear renaissance."

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