



#### **4. NUCLEAR: TVA officials stand first in line to buy small modular reactors** (03/09/2011)

**Peter Behr, E&E reporter**

The promise of the small modular reactor (SMR) -- the nuclear industry's new hope -- attracted a standing-room-only crowd at the Nuclear Regulatory Commission's annual industry conference in Bethesda, Md., yesterday.

Barely a concept several years ago, as NRC Chairman Gregory Jaczko put it, the SMR could become a reality by 2020, according to Tennessee Valley Authority officials, who described their goal of building the first Babcock & Wilcox mPower modular reactors at TVA's Clinch River site in Tennessee.

Andrea Sterdis, TVA's senior manager for strategic nuclear expansion, said TVA has been encouraged by its overtures to the NRC staff about the plan to build up to six of the reactors, using the NRC's older "Part 50" review procedure instead of the new "Part 52" process designed to streamline new reactor proposals.

Various modular designs of the small reactor have captured industry interest because their size -- one-tenth that of a conventional new reactor -- would not overwhelm utilities' balance sheets. As Sterdis noted, the 125-megawatt mPower units could replace aged coal boilers at TVA and other generating companies. Utilities could add modules as demand warranted, and the unit's factory-built assembly promises major cost savings.

One key remaining issue is whether regulations governing control room staffing, security requirements, emergency response plans and other issues could be significantly downsized without compromising safety.

TVA submitted a list of broad project assumptions to the agency in October, including the choice of the Part 50 process, which TVA believes would give it more flexibility in modifying the reactor design during review. "We received a positive feedback letter from the NRC endorsing all of the key assumptions," Sterdis noted.

The authority expects to submit a construction permit application by the third quarter of 2012, she added.

#### **Regulations needed**

Douglas Walters, vice president of regulatory affairs at the Nuclear Energy Institute, described the opening round of industry discussions with the NRC staff over licensing challenges facing small modular reactors.

"Clearly, small reactors will play a role" in the future U.S. electricity supply, he said. "They've got to be part of the energy mix. For us to be successful in this endeavor, we do need to work on regulatory issues. We need to have some stability and predictability."

Walters praised the NRC staff. "They have done a terrific job in working with us and having an open mind and looking at changing the licensing paradigm."

The NRC's position has been that it must work through the queue of proposed large new reactor designs and combined operating licenses requests from the industry before turning to small reactor projects. But the NRC staff has begun preliminary work in advance of an initial proposal by TVA, directing the staff to develop "risk-informed" approaches for reviewing SMR applications, Jaczko noted.

Jaczko, who opened the conference yesterday, was asked whether potential budget restrictions by Congress could jeopardize review of small modular reactors. The possible impact of budget cuts was very hard to predict, he said. "I believe we have adequate resources to do the new reactor reviews we have under way ... and are in a pretty good position to make meaningful progress even on the small modular reactor," he said.

Sal Golub, an official with the Energy Department's Office of Nuclear Energy, said he supported the NRC's position that the current applications have the first priority. "The bird in the hand is the important thing," Golub said.

"My guess would be, like anything else, there's supply and demand," he said. "If applications start coming in from SMR vendors, and there's a real budget, initiative and momentum, then the NRC will find a reason to take them up.

"I don't think it's one or the other," he said, referring to the large and small reactors. "Both can go in parallel."

Jack Bailey, TVA's vice president for nuclear generation and development, agreed. "The NRC has a separate branch set up to review this," he said. "They have clearly aligned their management to focus on this separately."

### **NRC puts safety first, new licensing later**

But Jaczko said that significant cuts in the agency's budget would affect regulatory reviews of new reactors, because the NRC's safety agenda takes precedence over all other tasks.

This year, the NRC arguably faces its most climactic period in a generation, as it closes in on decisions on new nuclear reactor designs and prepares for the first hearing on a new operating license since the 1970s. Its regulatory agenda is full with issues ranging from reactor fire protection to updated rules on seismic threats and new policies governing on-site, long-term storage of spent reactor fuel.

"We're expecting and hoping that we will get our budget request for this year," Jaczko told reporters. "I continue to believe that safety is a bipartisan issue."

Jaczko noted that the number of automatic reactor scrams, or emergency shutdowns, increased for the second consecutive year. "One of the most significant inspection findings last year identified fire protection, safety culture and poor operator performance as major contributors to a significant plant event," he said.

"Fundamentally, our focus will always be on the safety issues of the existing facilities, and the new kind of licensing activities are always those things that we anticipate deferring or delaying if our budgets didn't materialize," Jaczko said.

Bill Borchardt, NRC's executive director for operations, told the conference that the industry's safety record is far improved over trends 10 and 15 years ago. "Last year, there were no statistically significant adverse trends in overall industry performance," he said.

But he also cited an increase in scrams and "significant" events at reactors. "We are becoming increasingly concerned about the contribution of human performance errors that initiated or complicated the events."

The agency and the industry must ensure "that the lessons learned in the 1970s and 1980s are transferred effectively to the new generation of operators and maintenance workers who are now entering the industry," he said. "It should go without saying that we will continue to monitor these activities."

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