# Feds Move Closer to Approving New Nuclear Reactor

RAY HENRY,Associated Press

ATLANTA (AP) — Federal regulators are leaning toward approving a nuclear reactor designed by Westinghouse Electric Co. that could power the first nuclear plants built from scratch in a generation.

A majority of the members of the U.S. Nuclear Regulatory Commission have released statements saying they voted to approve the AP1000 reactor, most recently Commissioner William Magwood IV late Tuesday. Magwood is the third of the five commissioners to vote in favor of the reactor, although it is possible that others on the board have voted but not publicly released their ballots.

The commissioners can change their preliminary votes, which are not official until the NRC holds a final tally during a public meeting.

Still, the early support is a step forward for utility companies in Georgia, Florida and the Carolinas that have billions of dollars riding on plans to build that reactor in the Southeast. Until the NRC approves the reactor design, those utilities cannot get a license to build their plants.

Westinghouse, based in Cranberry Township, Pa., says its new reactor is safer because it relies on what it calls passive forces such as gravity and convection — not diesel generators and electric pumps and motors — to run emergency cooling systems. That contrasts with the Fukushima Dai-ichi nuclear plant in Japan, which suffered three meltdowns, explosions and released radiation into the environment after a March 11 tsunami wrecked its backup power systems.

"The combination of passive safety, severe accident, and defense-in-depth features gives me confidence that the AP1000 design is sufficiently safe," NRC Chairman Gregory Jaczko said in a written statement accompanying his ballot.

Federal officials approved an earlier version of the AP1000 reactor in 2006, but it was never built in the United States. Four AP1000 reactors are now under construction in China.

The biggest difference between the AP1000 and existing reactors is its safety systems, including a massive water tank on top of its cylindrical concrete-and-steel shielding building. In case of an accident, water would flow down and cool the steel container that holds critical parts of the reactor — including its hot, radioactive nuclear fuel. An NRC taskforce examining the Fukushima crisis earlier said licensing for the AP1000 should go forward because it would be better equipped to deal with a prolonged loss of power — the problem that doomed the Japanese plant.

"They chose to make their safety case based on these passive safety systems that rely on gravity-fed water, natural circulation and they are actuated by opening a few valves from batteries," said Eileen McKenna, chief of the NRC's AP1000 review team. "And then the natural processes allow the system to perform their functions."

Arnie Gundersen, a nuclear engineer hired by groups opposed to the reactor, warned regulators that the steel container that surrounds sensitive reactor parts — such as a vessel holding the nuclear fuel — could corrode or be damaged in a severe accident. He said a system that uses naturally circulating air to cool the plant during an accident would send radioactivity seeping from the containment into the outside environment.

"In solving one set of problems, they've created another problem," he said. "It's the law of unanticipated consequences."

Five utility companies are planning to build a dozen AP1000 reactors as part of a building boom the power industry dubbed the "nuclear renaissance."

Proponents say more nuclear plants could cut the country's reliance on fossil fuels and create energy without the producing the emissions blamed for global warming. A new government permitting process strongly encourages utilities to use pre-approved reactor designs rather than building custom models, a strategy intended to make plants easier to build and therefore less expensive.

Problems have hampered the anticipated building boom. The prolonged economic downturn cut the demand for electricity. The ability to extract natural gas in previously untapped shale formations increased the supply of the fossil fuel and made the cost of gas plants cheaper. Finally, the nuclear disaster in Japan put additional public and political scrutiny on the industry.

Atlanta-based Southern Co. applied to build the first two AP1000 reactors at Plant Vogtle in Georgia. The $14 billion effort is the pilot project for the new reactor and a major test of whether the industry can build nuclear plants without the endemic delays and cost overruns that plagued earlier rounds of building years ago. President Barack Obama's administration has offered the project $8 billion in federal loan guarantees as part of its pledge to expand nuclear power.

Close on its heels is SCANA Corp., which is also seeking permission to build two reactors at an existing plant in Jenkinsville, S.C. Westinghouse also has a contract to build its newest reactor in Florida.

It remains unclear exactly when the reactor will receive final approval — a major concern for Southern Co. since any delays could increase the cost of its project.

Under existing rules, a reactor design that commissioners have voted to approve must be published in the Federal Register for 30 days before it is legally effective. Southern Co. officials have asked the commission to make the design effective immediately after the vote.

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