Oconee tests reactor fire safety changes

New rules allow operators to put more resources in high-risk areas

By Anna Simon
STAFF WRITER
asimon@greenvillenews.com

About half a dozen employees at Oconee Nuclear Station work the fire watch, literally watching equipment and their assigned areas of the plant for smoke or fire.

Their jobs are part of what Nuclear Regulatory Commission Chairman Gregory B. Jaczko, in a recent speech, called "an unwieldy and confusing patchwork of (fire protection) requirements."

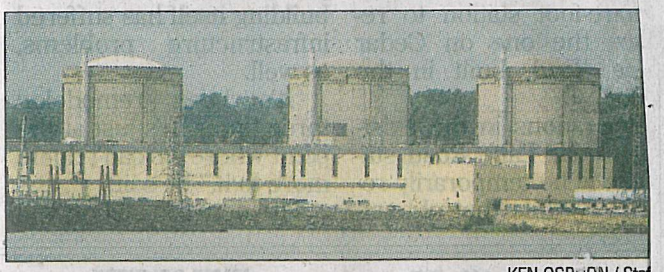
Because construction of many of the nation's nuclear reactors predates modern fire protection standards, fire protection regulations "have presented a long-term challenge," Jaczko said. "We know we can do better and we must."

Oconee, built between 1967 and 1974, is one of two facilities in a pilot project pioneering a change in fire protection provision at nuclear plants.

Oconee, owned by Duke Energy, "volunteered to be a part of the pilot to help analyze the new guidelines and make sure the plant continues to operate safely with the high degree of fire protection it has always had," said Sandra Magee, a Duke spokeswoman.

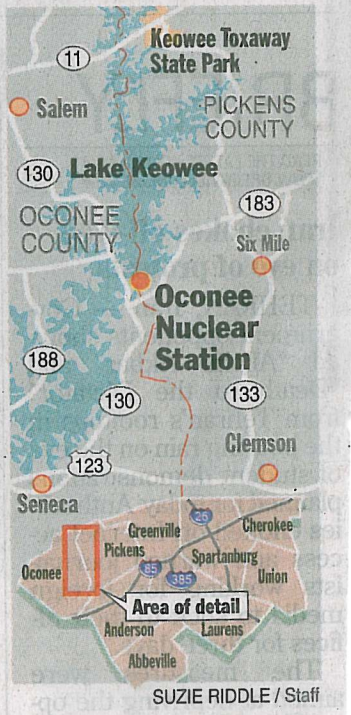
The change involves how fire risk is evaluated at the nuclear plants. A new performance-based standard would allow nuclear facilities to devote more resources to higher risk areas versus the current across-the-board approach. It's called NFPA 805; the initials stand for National Fire Protection Association.

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KEN OSBURN / Staff

Oconee Nuclear station on Lake Keowee is testing new fire safety procedures



SUZIE RIDDLE / Staff

"You actually go in and you do detailed analyses, fire performance, or fire hazard analyses in every area of the plant, and you tailor the fire protection features to those specific analyses," Jack Grobe, associate director in the office of Nuclear Reactor Regulation with the NRC, said at a press briefing earlier this year.

Paul Gunter, director of the Reactor Oversight Project for Beyond Nuclear, is critical of the change and believes it would be even more difficult for the NRC to enforce than the current code.

The transition would move "from a prescriptive code like speed limits around a school zone to a sign that says drive as safely as possible," Gunter said.

"We're moving dangerously into a space that will make it even more difficult to enforce the safety standard than the conundrum we're currently in where they haven't been able to do it for the last three decades," Gunter said.

Fire wasn't considered a major risk issue at nuclear plants and was treated only as an industrial risk until 1975, when a candle used to test seals for air leaks

High risk areas

The analysis gives a closer look at the high risk areas for a fire and "allows us to have a more tailored response, and we can put our resources on the specific modification versus changes that have very little value, they don't reduce the risk very much at all," Magee said.

Higher risk areas include key pieces of equipment needed to provide cooling to the reactor fuel. "We would want to make sure that we continue to protect them," Magee said.

Nuclear plants can decide whether or not to make the transition. So far, 51 of the nation's 104 plants have applied to do it, Brenner said. All new plants, including Duke's planned William States Lee III plant in Cherokee County, must implement NFPA 805.

Oconee, still in the midst of the pilot and assessing what the fire protection plan should be, has already implemented some changes to reduce risk, Magee said.

One example is a new service water system, to be completed in 2010, to provide additional fire protection for certain areas of the plant that, in the event of fire, now would require operators to leave the control room and go to a safe shut down facility elsewhere. The new system would enable operators to safely shut down the plant from the control room.

caused a fire that burned for nearly seven hours and shut down Browns Ferry Nuclear Power Plant in Alabama for several years, said Eliot Brenner, NRC director of Public Affairs.

Browns Ferry taught the industry that fire could compromise redundant safety systems and the ability to shut reactors down safely.

Browns Ferry sparked new fire protection regulations, however that was a "one size fits all solution," Brenner said.

Because no two plants are alike, the result was the current "patchwork" of alternatives to enable individual facilities to meet the safety standards, he said.

Results of the transitions at Oconee and Raleigh-based Progress Energy's Shearon Harris plant near New Hill, N.C., will be used to guide other plants through the transition, Brenner said. The commission plans to issue a report on the experience at the two facilities next spring.

Oconee never has had a fire "of any significance" and has "a very rigorous fire protection program in place," Magee said. There have been small fires in insulation around piping and equipment and electrical fires from breakers flashing that have been handled by in house firefighters — something every nuclear plant has.

As for the fire watch positions, which were initiated around 2004, those jobs may disappear.

"I think there will be other measures that we can put in place that will take the place of that. That's just an interim step until we get to the new rules and get the new analysis complete," Magee said.

