Faulty reading shuts down

Unit 2 going back online after false vibration signal

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After almost four decades of operation at the nation's commercial nuclear plants, even the control rooms of these high-security workplaces can seem pretty routine, but that wasn't the case Saturday at Oconee Nuclear Station.

An alarm that indicates reactor coolant pump vibration suddenly lit up, and a monitor showed something was very wrong.

Reactor coolant pump vibration was part of the scenario on March 28, 1979, at Three Mile Island's partial core meltdown, which is listed by the Nuclear Regulatory Commission as the most serious accident in U.S. commercial nuclear power plant operation history.

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Operators at Oconee immediately went to visual data on their computer screens and saw vibrations rising in two of the four coolant pumps in Unit 2, one of three reactors on the shore of Lake Keowee near scores of upscale lake home communities, 10 miles from Clemson University and 40 miles from Greenville.

In the end, it was a faulty piece of equipment that gave a scary reading and jolted those watching the dashboard from their usual routine.

It's a reminder of what's

Oconee reactor

at stake should something should go wrong in an industry still in the crosshairs of the national energy debate, as a second generation of nuclear plants goes on the drawing board across the nation and in South Carolina.

Andy Sabisch, senior NRC resident inspector at Oconee, was at the plant Saturday and heard an announcement go out. Within moments, he was in the

Sabisch was working at Three Mile Island on that fateful day in 1979. There were many indications of problems that day at Three Mile Island. Temperatures were going up. Pressures were abnormal.

At Oconee, "all those were normal and hadn't changed" except for the reading on the two pumps,

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Sabisch said. "If there was actual vibration, you would expect to see other indications of problems as well."

Although there were no other alarms or indications of trouble, operators and management "drew a line in the sand," Sabisch said. When the monitor showed vibrations had reached a certain level, "they made the right decision early."

They shut the unit down. It took 27 minutes to manually shut it down in a calm and methodical manner, Sabisch said.

"One of the lessons that came out of Three Mile Island was when indications tell you to take action, take the action. That's what they did," Sabisch said.

In control

"The operators were in control of the plant rather than the plant controlling them."

Sandra Magee, spokeswoman at the Duke Energy facility, said that when workers "couldn't confirm that in fact there were vibrations," the operator "made a conservative decision to manually shut the reactor down to investigate."

Nothing like this had happened at Oconee as far as Magee knows.

Operators have mandatory classroom and simulator training two weeks out of every 10 weeks throughout their entire careers, and this was "a textbook response" that addressed the issue "while it was still a small problem, Magee said.

Duke Energy officials, according to the NRC, had to fully insert control rods into the reactor to stop the nuclear chain reaction.

Reactor personnel worked to remove heat from the reactor by a system of bypass valves, the NRC said.

Water levels in the steam generator were maintained with a main feedwater system, said the commission, which also said the station's other two reactors weren't affected.

Workers traced the problem to a power supply that feeds the vibration indicator and replaced the power supply, Magee said.

"The pumps weren't actually vibrating. There was an issue with the power supply that feeds the indicator. It was causing it to read an inaccurate account of vibration when there was no vibration," Magee said.

In Columbia, nuclear watchdog Tom Clements appraised the situation with concern.

"There may be problems with the monitors, but because the pumps are so critical to cooling down the reactor, it deserves special attention by the company and the NRC," said Clements, Southeastern nuclear campaign coordinator for Friends of Earth.

Workers went into the reactor building after it was off line "to do a full inspection looking for leaks or any abnormal conditions and didn't find anything," Sabisch said. "They took care of some other unrelated issues and fully reviewed everything before restarting, and the NRC reviewed it as well."

Workers began the slow process Monday morning to bring the reactor back to full power. By 5 p.m., Unit 1 was operating at 54 percent, and the process was expected to continue into the evening, Magee said.

Duke is continuing to evaluate the cause of the problem with the power supply, Magee said.

"This was never an issue with public safety. It was a piece of equipment that was operating out of normal parameters, and we shut it down quickly to make the repair," Magee said. "It was not an emergency situation. It was way down the threshold ladder."