NRC Seeking Answers: Corrosion at NC Nuke Plant Missed During Inspection

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HOLLY SPRINGS, N.C. (AP) — An outside contractor hired to look for flaws in a Duke Energy nuclear reactor near Raleigh last year missed a quarter-inch spot of corrosion and cracking near the reactor core that forced a full shutdown last month after new eyes reviewing year-old data found the problem, federal regulators said Thursday.

Four smaller spots were fixed during a refueling last year, but the flaw that forced the May 15 shutdown at the Shearon Harris nuclear plant wasn't found until new contractors reviewed ultrasonic tests from last year, Nuclear Regulatory Commission inspectors said during a public meeting.

The NRC said there was never radiation leakage from the reactor vessel, which contains the heat and pressure produced by the nuclear core's energy. The plant returned to full power Sunday.

"The reason why they shut down was because they could not confirm that there was no leakage," said Robert Williams, an NRC reactor inspector who led a team looking into why the flaw was missed last year. "Once they shut down and were able to perform the needed and required examinations, they were able to confirm there was no leakage."

Had there been a leak from the reactor vessel as a result of such cracking, it would have been contained by backup safety systems, the NRC said.

Inspectors said they're still trying to figure out why a pair of expert-level outside analysts independently failed to spot the problem, and why the spot wasn't caught by later reviews of the data last year. A final NRC inspection report will be released by July 11.

Duke Energy "is taking actions to correct the failure of the personnel to identify the defect," the NRC said in a summary distributed at the meeting.

The cap on top of the reactor vessel, called a vessel head, will now be checked for similar cracks every time the reactor is refueled, NRC inspectors said. That's done every 18 to 24 months, the company said.

"They're looking at it every single time," Williams said.

About a third of all U.S. pressurized water reactors like Harris have similarly had cracking show up on a nozzle in the vessel head, the NRC said. The cracks are caused by the extreme temperatures of the water heated by the nuclear reaction

and acid that results from boron mixed with the water to extend the life of the fuel, said Joe Austin, the senior NRC inspector stationed at the Harris plant.

Duke Energy took over the Harris plant after it acquired Raleigh-based Progress Energy Inc. last year, which made it the country's largest electric company. Duke Energy's two resulting operating subsidiaries in the Carolinas each have territories that serve parts of North Carolina and South Carolina that depend heavily on nuclear energy.

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