

Fort Worth Star-Telegram (TX)

2002-12-11

Section: Metro

Edition: FINAL

Page: 1

Flaw in reactor not seen in check

NEIL STRASSMAN Star-Telegram Staff Writer

GLEN ROSE--Routine inspections at the Comanche Peak nuclear power plant failed to detect a damaged steam generator tube that later ruptured, forcing a shutdown in September, according to a federal report released Tuesday.

The flaw in the tube was "clearly identifiable and missed" about 18 months ago by workers for TXU Energy, the plant's owner and operator, according to the preliminary findings of a special inspection team of the Nuclear Regulatory Commission.

The error, termed an "apparent violation" in the report, did not pose a safety or public health risk, NRC officials said. They praised the company for taking "appropriate and conservative" action in response to the leak.

"Consistent with putting safety first, we shut the plant down," C. Lance Terry, TXU's principal nuclear officer, said at a meeting near the power plant about 50 miles southwest of Fort Worth. Terry said the small leak was well below NRC guidelines and TXU's more conservative guidelines.

The NRC is still evaluating the risk associated with the error, said Roger Hannah, NRC spokesman.

"In all likelihood, there wouldn't be a civil penalty but there could be additional oversight or inspections," Hannah said.

The steam generator tubes carry superheated, radioactive water from the reactor's core to heat nonradioactive water, creating steam to run turbines to produce electricity.

There are 4,578 tubes in each of the reactor's four steam generators.

The September incident was the first time a tube has leaked at either of Comanche Peak's two reactors.

But the Unit I reactor that went on line in 1990 has had its share of problems with cracked and corroded steam tubes that have been repaired or plugged, company officials said.

There were no tube problems in the reactor's first five years of operation. But since 1995, about 700 damaged tubes have been identified and plugged -- taken out of service -- before they leaked, said James Kelley, TXU's nuclear engineering vice president.

Leaking and cracked tubes have been long-standing problems at plants that were built with Westinghouse-engineered pressurized water reactors. The Westinghouse system has been installed in both commercial nuclear power plants in Texas, Comanche Peak and the South Texas Project.

The thin tubes -- made of a stainless steel alloy called Inconel 600 and designed to last 40 years - - are scheduled to be inspected every 18 months, when the reactor is refueled.

In some cases, they have cracked and leaked within 10 years of installation, according to NRC records.

The most recent inspection of Unit 1, in October, found more than 660 damaged tubes, nearly equal to the total number of damaged tubes found in the past 12 years.

The tubes were repaired with sleeves instead of being taken out of service, which would have caused the plant to lose efficiency, Kelley said.

Terry told the NRC that he is confident that Unit 1 can operate for another 18 months, but nuclear industry critics warn that the tube problem needs greater attention.

"If a tube breaks and ruptures, it could cause a domino effect, breaking additional tubes," said David Lochbaum, a nuclear engineer who works with the Union of Concerned Scientists.

"It wouldn't take more than 10 broken tubes to let more water flow out than you can put back in, jeopardizing the ability to cool the reactor core," he said.

Steam-tube problems and the cost of replacing entire systems contributed to the early retirement of nuclear power plants in Oregon, Maine and Illinois, said Jim Riccio, a nuclear policy analyst with Greenpeace.

At least 19 steam-generating systems have been replaced at nuclear plants for \$100 million to \$200 million per plant, records show.

The South Texas Project replaced its steam generators in the past two years.

"It [Inconel 600] is one of the great failures in terms of selecting a material for nuclear power plants," Riccio said.

The tube problem has led to at least 14 lawsuits against Westinghouse, all of which have been settled out of court with most court documents sealed.

Kelley said TXU has not made a decision on whether to replace Unit 1's four steam generators, which would cost about \$150 million. Delivery of new steam generators could take about six years, he said.

Dwight Chamberlain, the NRC's regional director of reactor safety, said the agency is analyzing the Comanche Peak problem to see if it can learn something about the detection of flaws.

The inspection team expects to issue a final report in about a month, NRC officials said.

After the September leak, Unit 1 was shut down for 50 days to repair the tubes and for refueling.

The unit has been started and stopped twice since Nov. 15, once for a potential valve problem and the second time because of a leaky weld at a control rod.

Unit 1 remains out of service but is expected to be put back in service in a few days, company officials said.

Neil Strassman, (817) 390-7657 [strass@star-telegram.com](mailto:strass@star-telegram.com)