Feds Release Confidential Report on Cal Nuke Plant

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LOS ANGELES (AP) — The company that runs the troubled San Onofre nuclear power plant sparred with environmental activists Friday over the details of a once-confidential report that shows industry engineers were aware of problems with steam quality inside equipment that later malfunctioned.

San Onofre, located between Los Angeles and San Diego, was shut down more than a year ago after a tube break released a trace of radiation. Investigators later found unusual damage to hundreds of tubes that carry radioactive water inside the plant's steam generators.

Last year, federal regulators blamed the heavy tube wear on a botched computer analysis that misjudged how water and steam would flow in the reactors.

The redacted report released by the Nuclear Regulatory Commission makes clear that engineers who worked on the design years ago knew the steam surrounding tubes inside the generators could be unusually dry.

At issue is how they responded and why, and whether the plant's operator, Southern California Edison, intentionally installed equipment that was at risk of rapid failure. Costs tied to the long-running shutdown, including repairs and replacement power, topped $400 million last year.

Pete Dietrich, senior vice president for Edison, said the company was never informed by manufacturer Mitsubishi Heavy Industries Ltd. that steam dryness or its flow could contribute to the failure of generator tubes, which carry water from the reactors.

"At the time, the design was considered sound," he said in a statement.

But Friends of the Earth, a group that is critical of the nuclear power industry and wants San Onofre shut down and dismantled, accused Edison of gambling with public safety.

"Edison clearly knew about design problems with the San Onofre replacement steam generators yet failed to take corrective action," spokesman Damon Moglen said in a statement.

Sen. Barbara Boxer, D-Calif., said the report raises "serious concerns" about whether Edison and Mitsubishi used shortcuts that compromised safety to avoid a lengthy NRC design review. She earlier urged the NRC to investigate.

The report comes as Edison pushes the NRC for permission to restart one of the reactors, Unit 2, and run it at reduced power in hopes of slowing or stopping tube damage. A decision on the request is not expected until at least late April.

The report, authored by Mitsubishi, is likely to factor in a probe being conducted by the NRC's investigative arm into information Edison provided to the agency on the generators. Meanwhile, state regulators are considering if ratepayers should be hit with costs tied to the shutdown.

Gradual wear is common in such tubing, but the rate of erosion in some tubes at San Onofre alarmed officials since the equipment is relatively new. An overriding goal for a team of engineers who worked on the generators, which were installed in 2009 and 2010, was minimizing wear and tear on the nearly 40,000 tubes. However, the opposite happened.

The highly technical report states that Edison and Mitsubishi were aware of the dry steam and tried to change it with several design adjustments, to little effect.

They considered more significant fixes but concluded those had "unacceptable consequences." Part of the consideration involved Edison's intent to stay within its existing operating rules and not trigger a license amendment, a court-like review of proposed changes at the plant.

According to a 2012 article in Nuclear Engineering International, written by top-level Edison nuclear engineer Boguslaw Olech and Tomoyuki Inoue of Mitsubishi, Edison wanted to design generators that would require only minor modifications within the rest of the plant and meet a federal test that would allow them to be installed without prior approval from federal regulators.

Friends of the Earth has claimed Edison misled the NRC about design changes to avoid the lengthy review. Edison said it never rejected proposed design changes related to the steam to avoid a license amendment.

Mitsubishi said in a statement that "nothing is more important to us than the safe design and manufacturing of nuclear energy facilities and related components."

At the time the generators were shipped, "it was believed that they had greater margin against ... vibration and wear than other similar" generators, Mitsubishi wrote in a supplemental report released by NRC.

Mitsubishi said it researched various fixes for the steam problems over five months but "none of these alternatives had a large enough effect ... to justify such a significant change."

The generators, which resemble massive steel fire hydrants, control heat in the reactors and operate somewhat like a car radiator. At San Onofre, each one stands 65 feet high and weighs 1.3 million pounds, with 9,727 U-shaped tubes inside that are each 0.75 inch in diameter.

Overall, NRC records show investigators found wear from friction and vibration in 15,000 places, in varying degrees, in 3,401 tubes inside the plant's four generators, two in each reactor.

The plant is owned by SCE, San Diego Gas & Electric and the city of Riverside.

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