Three Mile Island's Steam Generator Safety

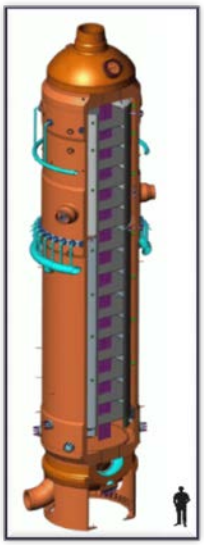
Is Suspect During Reactor Transient Conditions

TMI Alert Petitions the Nuclear Regulatory Commission to Take Enforcement Action

March 11, 2019

click to watch the 3 minute video:

https://www.youtube.com/watch?v=AiUq39_VFAE&feature=youtu.be



Steam Generator

1977 - 2019
THREE MILE ISLAND
TMI
ALERT
Four Decades of Vigilance

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Safety Compromised:
Steam Generator Defects at Three Mile Island

There is a very serious safety defect with the new replacement steam generators at the Three Mile Island ("TMI") nuclear plant. Data indicates that these steam generators can self-destruct from excessive vibrations and fluttering under reactor transient conditions. The fluttering can be so severe that the steam tubes within the steam generators could bang into each other and rupture. This triggering mechanism is termed "thermally induced steam generator tube failures."

We can provide an example scenario cited by the Nuclear Regulatory Commission ("NRC)". Some of the tubes at TMI have exhibited excessive wear from this behavior under normal temperatures during the first fuel cycle - 22 months.

The internal damage would destroy the radiation barrier function of the steam tubes, releasing radiation directly to the environment in what is called a "containment bypass accident." These rapid releases would allow no time for an evacuation and represent a fearful and dangerous occurrence. That is why this is no "small" matter.

There are two major defects; one which was caused by a design flaw, the other caused by a manufacturing error.

There is also the third issue of an overly-aggressive design where safety margins were decreased. TMI Alert contends that this aggressive design also caused the licensee to be out of compliance with its operating license regarding changes to safety systems.

Nuclear engineers Arnie Gundersen and David Lochbaum, both court expert witnesses on nuclear technical issues, agree that the defects represents a serious problem and that the NRC is allowing the condition to go on without a proper analysis. Mr. Gundersen stated that, "The problem of the steam generators at TMI is real, and big!"

We have discussed this defect with some NRC staffers from the Division of Operating Reactor Licensing and from the Office of Nuclear Reactor Regulation- who have also agreed with our contentions that the NRC must examine this safety deficiency.

A somewhat similar problem recently occurred at the San Onofre nuclear plant in California. Those defective replacement steam generators which released small amounts of radiation caused the utility to permanently close the plant since correcting the problem would have been too costly.

What Happened to the Original Steam Generators?

• November 1981 to January 1982 - GPU discovers it has damaged over 29,000 steam generator tubes at TMI-1.

• December 7, 1983 - The Commission's Office of General Counsel reports that the steam generator tube repairs are a "significant hazard consideration" and a vote to the contrary would violate the Atomic Energy Act.

• July 16, 1984 - TMIA is the only group to intervene in the steam tube case. The Board refuses to allow evidence relating to the recently discovered steam generator tube problem.

• January 11, 1999 - TMI-1 is operating with thousands of damaged steam tubes. "...OTSG "A" has plugged 1,300 tubes and OTSG [Once Through Steam Generator] has 395 plugged tubes, totaling 1,695 plugged tubes at TMI-1. Each OTSG has 15,531 tubes. The NRC approved limit is a maximum of 2,000 total tubes plugged. GPUN has analyzed and submitted for NRC review a request to revise the tube plugging limit to 20% per OTSG, or 3,106 tubes per OTSG

• January 26, 2012 - After just one operating cycle, NRC inspectors at Three Mile Island have detected unexpected flaws in the facility's new steam generators. The two 70-foot tall, 510-ton replacement steam generators sit on either side of the nuclear reactor, and were installed at TMI in 2009. Each cost more than $140 million.