

April 5, 1982

SECY-82-72B



**POLICY ISSUE**  
(Information)

For: The Commissioners

From: William J. Dircks  
Executive Director for Operations

Subject: OVERALL STEAM GENERATOR PROGRAM

Purpose: To respond to the Chairman's March 1, 1982 request for further discussion of short-term actions that might be taken with regard to performance of steam generators.

Discussion: In the Chairman's March 1, 1982 memorandum I was requested to provide further discussion on item 1.d., "Staff recommendations on the short term actions (for all affected reactors) believed to be prudent to ensure that the public health and safety are protected."

There are a number of activities that should be considered in the short term to improve steam generator performance during plant operations. The type of actions that can be considered are tabulated below.

From an overall context, however, it would appear more desirable to have these actions implemented in whole or in part by the industry itself rather than by imposing further NRC requirements because the economic impact of steam generator degradation has been significant. Approximately 23% of non-refueling outage time has been attributed to steam generator degradation. Thus, from an economics viewpoint alone, the industry should seriously consider actions such as those outlined below. From our viewpoint, if some or all of these actions are taken to improve the reliability of the steam generators, then safety of the plants will be enhanced.

In my memorandum to the Commissioners on March 25, 1982, I outlined a management structure for coordinating NRC/industry steam generator program and plans for developing such a joint effort. As I indicated, I am taking the lead in setting up the initial meeting for this purpose. I plan to suggest that the actions outlined below be discussed at this meeting and be given prompt consideration by this group with an aim for beginning industry implementation in the next several months:

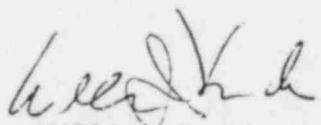
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1. Implement comprehensive water chemistry criteria for the various steam generators now in operation.
2. Improve condenser performance such that introduction of contaminants into the secondary water is minimized. Re-design and retubing of current condenser systems needs to be included. In addition, the feedwater and moisture separator systems designs needs to be considered with respect to minimizing contamination.
3. Increase the scope and frequency of steam generator tube examination and adopt more stringent criteria for plugging tubes.
4. Addition of loose parts monitoring systems on steam generators and develop a program for examining the secondary side of the steam generator for loose parts.
5. Determine structural modifications and operating conditions which could minimize flow-induced vibration and wear of steam generator tubes.
6. Assess the state-of-the-art of measuring steam generator tube integrity before and after plugging, and implement the best available options.
7. Implement improved cleaning and maintenance programs for secondary side systems.

The foregoing elements are aimed at reducing the likelihood of significant steam generator tube leakage during operation. It would be premature to speculate how long it would take existing plants to incorporate changes in these areas, but it would seem reasonable that certain of them could be made on a fairly short-term scale (for example, controlling water chemistry, tightening standards and improved examination of the secondary side).

In parallel with the above, we will be assessing possible new requirements that may be prudent in the short term that address certain aspects of the above.



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