

3470. Recommendations for an Effective Flow Accelerated Corrosion Program

Since the mid-1980s, nuclear power plants have experienced leaks and ruptures caused by flow-accelerated corrosion (FAC). The nuclear power industry has mounted a broad-based effort to reduce the amount of FAC that occurs and to uncover incidents of excessive FAC before failures are likely to occur. This report describes the elements of an effective FAC prevention program, identifying procedures and tasks, necessary documentation, and a strategy for developing and implementing a long-term program. It also identifies typical elements of an effective FAC program and describes the steps utilities should take to minimize the chances of experiencing a FAC-induced consequential leak or rupture. The guidance is directed primarily at FAC-induced wall thinning in large-bore piping, although small-bore piping is also addressed. Key elements of the guidelines include:

- Discussion of an effective FAC program design, with emphasis on corporate commitment, industry FAC experience, inspections, engineering judgment, and long-term strategies
- Description of implementation procedures and documentation, including use of a governing document
- Identification of recommended FAC tasks, with key steps of identifying susceptible systems, performing FAC analysis, selecting and scheduling components for inspection, performing inspections, evaluating inspection data, assessing worn components, and repairing and replacing components
- Explanation of how to develop a long-term strategy, with discussions of FAC-resistant materials, water chemistry, and system design changes. This document will help utilities implement an effective monitoring program at their plants and establish a uniform industry approach toward mitigating FAC damage. It is believed that implementation of the recommendations will prove a cost effective method for increasing personnel safety, plant safety, and plant availability.

For more information see: EPRI NSAC-202L-R1, Final Report, December 1996, 72 pages.

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