3478. Study on High Temperature Chemical Cleaning Tests and Applications

The transport and deposition of corrosion products in PWR steam generators remains a continuing problem. Chemical cleaning has been shown to be an effective means of removing accumulated deposits in tube support plate crevices. This report documents laboratory testing to establish tube support plate crevice cleaning effectiveness, reviews recent commercial high-temperature chemical cleaning, and provides an overview of parametric testing on solvents and methods for high-temperature cleaning performed by Atomic Energy Of Canada Limited (AECL).

The laboratory testing conducted for Vattenfall AB Ringhals provided results that demonstrate crevice cleaning effectiveness. The first series of tests documented the effect of a single application of a high- temperature process wherein approximately 50% of the crevice deposits were removed in a few hours. The second series of tests established that support plate crevice specimens could be completely cleaned in approximately 24 hours.

The review of commercial high-temperature chemical cleaning establishes the EPRI/SGOG methodology for inclusion into utility cleaning plans. The overview the AECL parametric study on high-temperature cleaning solvents and methods allows some additional options for utilities considering chemical cleaning. In fact, EPRI recognized industry concerns as to support plate crevice cleaning effectiveness and was instrumental in reporting on tests of high temperature crevice cleaning. Evaluations of methods such as the ones described in this report can help utilities make cost-effective, site-specific decisions concerning high-temperature crevice cleaning.

For more information see: EPRI TR-107207, Final Report, December 1996, 104 pages.