INNOVATING NUCLEAR TECHNOLOGY
ANALYSIS AND MEASUREMENT SERVICES CORPORATION

CABLE TESTING

For Early Detection of Pressurizer Heater Degradation

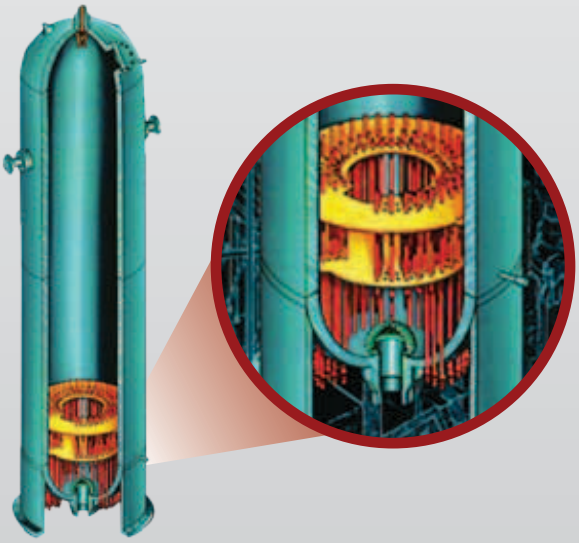
About

AMS cable testing capabilities can provide a means of early detection for pressurizer heater degradation. The AMS cable testing suite offers diagnostic insight into the health of pressurizer heater circuits and can detect early evidence of potential failures in the heater element, the heater cables, and/or the cable connections.

Capabilities

Detection of Moisture Intrusion and Insulation Breakdown

- Impedance Measurements (LCR)
- Time Domain Reflectometry (TDR)
- Frequency Domain Reflectometry (FDR)
- Insulation Resistance (IR)



Background

In the Sizewell B Nuclear Power Plant, the stress corrosion cracking of the heater sheath surface resulted in water ingress which led to insulation breakdown in the heater element. The AMS suite of cable testing capabilities can be used for the detection of insulation breakdown, the intrusion of moisture in the heater element as well as other causes of degradation that can affect the normal operation of pressurizer heaters. Most importantly, performing these tests to identify the presence of moisture can provide information related to the health and integrity of the heater well inserts.

Methodology

Pressurizer heater diagnostics tests may be performed while the RCS is at normal operating temperature and pressure or during shutdown conditions using the AMS/CHAR cable testing system. These non-destructive tests are performed remotely on selected element assemblies from the mild environment at the heater panel switchgear location. The results are then evaluated to identify any degradation, stored in a database for performance trending purposes, and summarized in a comprehensive final report.

For more information please contact:

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