



Condition Monitoring of Live Cables in Nuclear Power Plants

About

Despite the recurring incidence of cable failures in aging nuclear power plants, there is no method for locating intermittent faults in energized circuits. Intermittent faults, unlike hard faults (such as open or short circuits), are defined as a temporary change in impedance that may only last a fraction of a millisecond. While less noticeable than hard faults, signal spiking from intermittent faults invariably leads to alarm conditions and reactor trips.

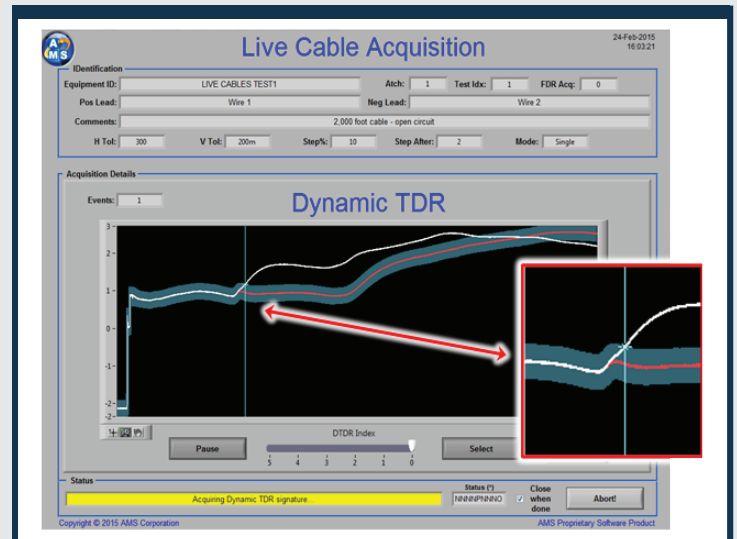
How does it work?

A Time Domain Reflectometry (TDR) signature is safely coupled onto a live circuit and then measured to establish a healthy baseline.

Repeated TDR measurements are monitored for impedance changes along a cable circuit, and thereby identify and locate any circuit anomalies.

When the circuit anomaly exceeds a predetermined monitoring threshold, the anomaly is automatically recorded, flagged, and stored in a database for distance to fault diagnostics.

Custom Intermittent Fault Detection Software



Integrated into AMS' CHAR System



Benefits of Use

This live cables test system can remain connected for long-term trending of changes in energized cable circuits, connections, and end devices.

In addition to locating intermittent faults, the online monitoring system can detect circuit degradation resulting from temperature, radiation, vibration, and humidity effects on live cables.

