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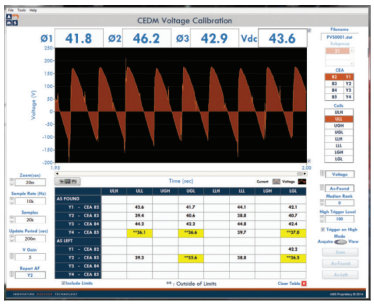
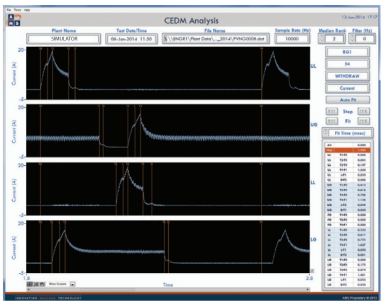
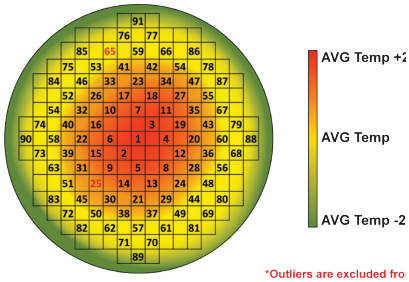
CEDM Diagnostic System

Timing, Sequencing, Voltage Calibration, and Current Monitoring of Control Element Drive Mechanisms (CEDMs)







Proper timing, sequencing, and latching of CEDMs is verified by monitoring the various coil currents of a group of regulating and shutdown CEAs as they are moved into and out of the reactor core. The AMS CEDM data acquisition and analysis systems (CDA-1, CDA-2) can automatically sample the outputs of these coils and analyze the data for each CEA to ensure proper operation of the CEDM control system.

Additionally, coil current noise monitoring, coil voltage calibrations, and coil temperature monitoring can be performed automatically during a refueling outage or while the plant is operating.

The AMS CEDM system can also be configured for permanent installation in the plant to provide for real-time, online data acquisition, trending, and improved diagnostics/troubleshooting.

FEATURE	BENEFIT
Simultaneous Voltage and Current Data Acquisition on up to 24 CEAs	Reduced test time by automating data collection.
Measurement of Regulated Voltage	Helps to automate calibration procedure reducing critical path time. Enables condition-based calibration.
Streamlined Measurement and Recording of Coil As-Found/As-Left Voltages	Improved calibration activities and reduced critical path time.
Advanced Analysis including Trending, Overlays, Current and Voltage Traces, etc.	Reduced time required to perform the test. Provides additional information regarding CEDM health, including coils, cables, and connectors.
Automated Analysis to Support CEA Calibrations	Helps to automate calibration procedure reducing critical path time.
Automated Reporting	Reduce time required to report results. Print to PDF.
Current Noise Monitoring	Custom thresholds can be set to monitor Upper Gripper Coils and alert engineers of possible impending coil failure.
Conversion to Excel	Allows for easy transfer of data to support presentation, further analysis, and archiving.
Online Coil and Cable Impedance Monitoring	Impedance is a potential indicator of possible coil degradation. Trending values can be an excellent parameter for evaluating a maintenance strategy.
Core Temperature Mapping	Core temperature mapping can be used to find hotspots and to identify coils that may experience future problems.

10CFR50 Appendix B Program

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