

# NUCLEAR INSTRUMENTATION CABLE TESTING FOR PLANT LIFE EXTENSION


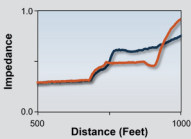
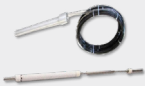
## PLEX Testing to Satisfy XI.E2 License Renewal Commitments

The Nuclear Regulatory Commission (NRC) has established guidance for nuclear plant license renewal in NUREG-1801 and NUREG-2191 that includes information for site cable aging management plans to support long-term operation. For cables used in high voltage, low-level current signal applications such as nuclear instrumentation, the XI.E2 aging management program (AMP) applies. AMS has developed a comprehensive Plant Life Extension (PLEX) testing methodology specific to nuclear instrumentation to objectively address this program requirement and support long term operation of nuclear instrumentation circuits.

AMS PLEX testing satisfies license renewal commitments and identifies any degradation in the cable circuit that could impact plant performance now or in the future. PLEX testing also establishes baseline data for trending and monitoring purposes, which can be crucial when troubleshooting future cable problems and helps avoid premature replacement of components. The AMS approach to PLEX testing includes a wide variety of cable testing techniques to characterize the bulk health of the cable, connectors, and end device. **The acquired data is then compared to acceptance criteria AMS has developed using existing industry guidance, 10 years of laboratory research and development, and 30 years of testing within the nuclear fleet.**

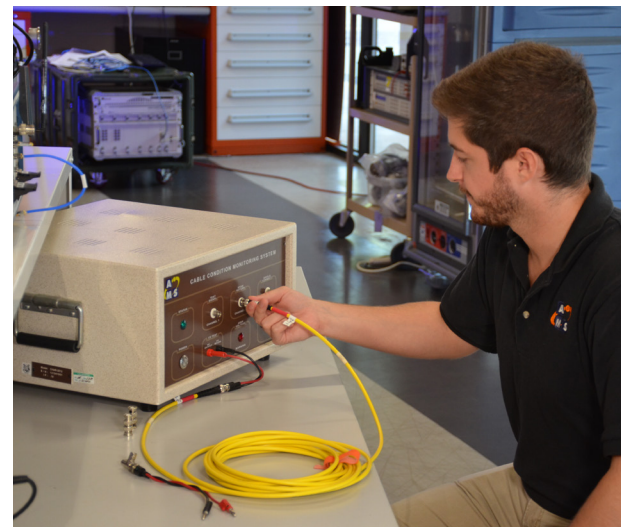
*AMS can also support sites to satisfy additional AMPs such as XI.E1, XI.E3, and others.*

### PLEX Testing Evaluates All Aspects of the Circuit

	Cable Aging	Frequency Domain Reflectometry (FDR) Indenter Measurements
	Operability	Time Domain Reflectometry (TDR) Reverse TDR (Shield Integrity Test) Impedance (Inductance, Capacitance, AC Resistance) Insulation Resistance (IR)
	Detector Health	Current-Voltage (Plateau Curve or IV Curve)

### Benefits of PLEX Cable Testing

- Assess the health of the conductor, insulation, shield, jacket, and end device of your cable
- Satisfy license renewal commitments
- Identify degradation early to reduce future incidents and last-minute issues
- Establish baseline data to use for future trending and streamline troubleshooting
- Provide maintenance recommendations during outage to maintain circuit health
- Avoid premature replacement of components



AMS' CHAR Cable Condition Monitoring System