



INNOVATING **NUCLEAR** TECHNOLOGY

ANALYSIS AND MEASUREMENT SERVICES CORPORATION

# Overview of AMS Technologies for TVA

Presented by:

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October 3, 2023





# We Test the Performance of I&C Systems



- *All U.S. nuclear power plants*
- *Nuclear plants in Europe, Asia, Africa, Middle East, and South America*
- *Government Facilities including Y-12, Sandia, Savannah River, HFIR/ORNL, and ATR/INL*



**I&C MAINTENANCE**



**ROD CONTROL**



**CABLE TESTING**



**SOFTWARE RELIABILITY**



**EMC/WIRELESS**



**REACTOR DIAGNOSTICS**



**MATERIALS TESTING**

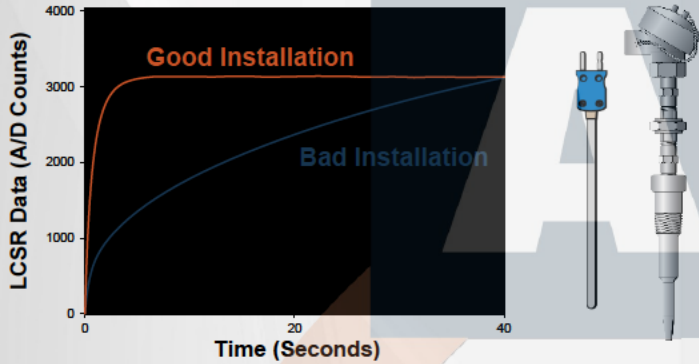


**ONLINE MONITORING**



# Performance of I&C Systems is Critical to Plant Safety

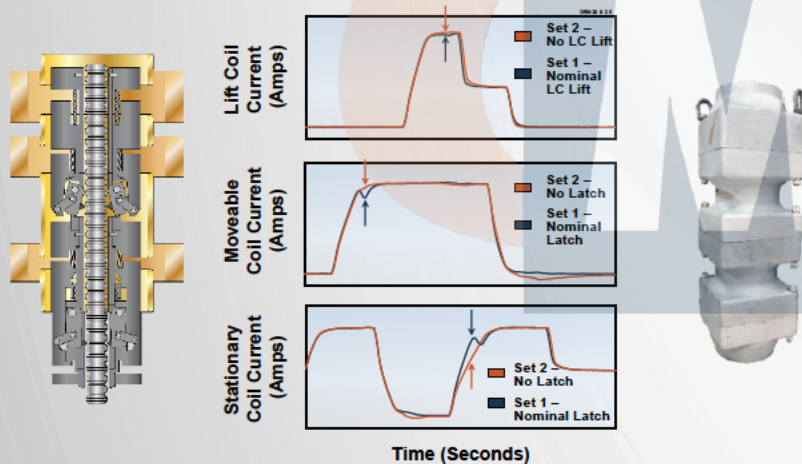
## SENSOR RESPONSE TIME TESTING



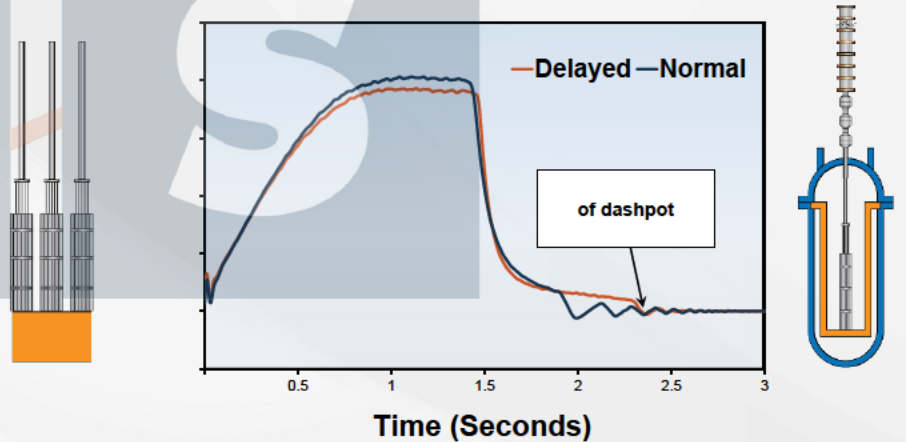
## RTD CROSS CALIBRATION



## ROD CONTROL SYSTEM TESTING



## ROD DROP TIME TESTING

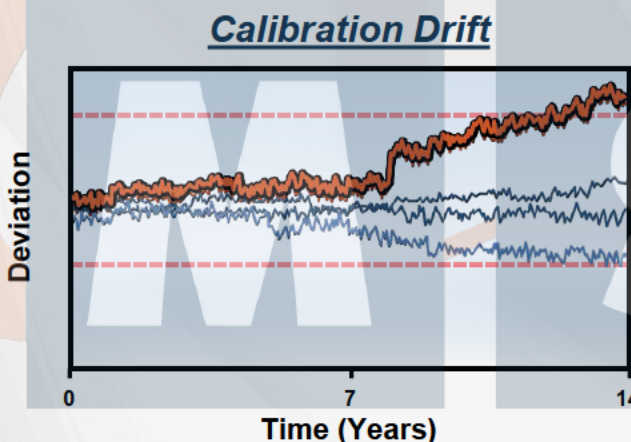
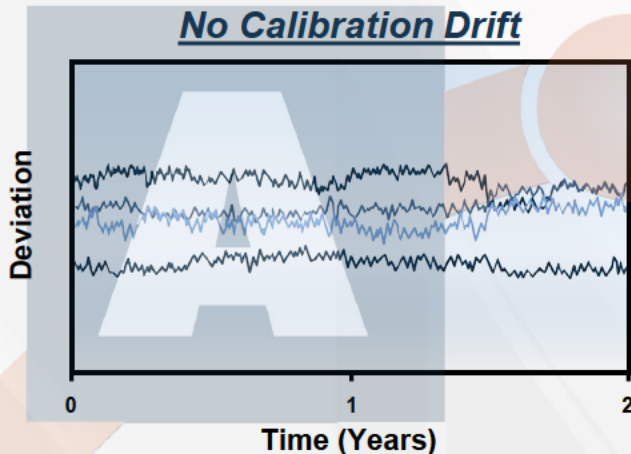




# NRC Approved OLM Technology for Calibration Monitoring of Safety-Related Transmitters



Data Historian



Item	Group Name	Tag Name	Result
1	SG A OUTLET PRESSURE	PT0474	Good
2	SG A OUTLET PRESSURE	PT0475	Good
3	SG A OUTLET PRESSURE	PT0476	Good
4	SG A NARROW RANGE LEVEL	LT0474	Good
5	SG A NARROW RANGE LEVEL	LT0475	Good
6	SG A NARROW RANGE LEVEL	LT0476	Good
7	PRESSURIZER LEVEL	LT0459	Good
8	PRESSURIZER LEVEL	LT0460	Bad
9	PRESSURIZER LEVEL	LT0461	Good



*Calibration Workload Typically Reduced by 90%*



# We are the EMC Supplier of Choice for the Nuclear Industry

- EMC qualification testing via immunity and emissions test facility (3 chambers in 20,000 ft<sup>2</sup>)
- Mil Std and/or IEC Testing to meet the requirements of NRC Regulatory Guide 1.180 or EPRI TR-102323
- A2LA Accredited EMC Laboratory (Certificate #3483.01)
- 10CFR50 Appendix B and NQA-1 Program
- iNARTE Certification
- Standards Committee and Working Group Participation





# Our EMC Capabilities Extend Beyond Traditional Laboratory Qualification Testing

- On-site EMC Qualification Testing (Mobile Test Laboratory)
- EMI/RFI Site Surveys
- EMI/RFI Troubleshooting
- EMC Engineering Analysis
- System Installation and Commissioning Assistance
- Wireless Technology Implementation
- Automated Software Testing and V&V





# Cable Testing, Condition Monitoring, and Aging Management

## TROUBLESHOOTING

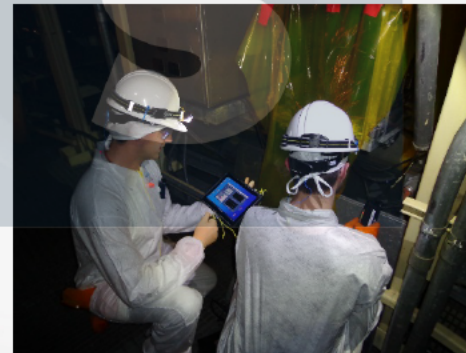
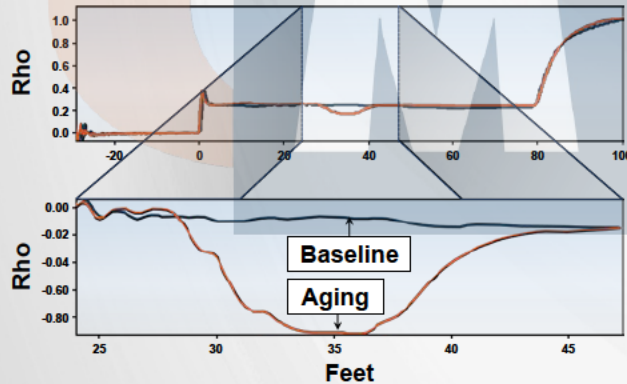
Data Showing Location of Impedance Change



## CONDITION MONITORING



## AGING MANAGEMENT

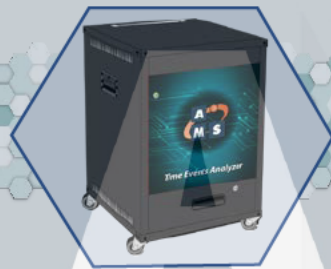




# Custom Data Acquisition Platforms



**Wireless  
Vibration System**



**Time Events  
Analyzer System**



**Control Element Drive  
Mechanism Diagnostic  
Equipment**



**Cable Condition  
Monitoring  
System**

## System Performance:

- Satisfy Surveillance Requirements
- Replace Obsolete Monitoring Systems
- Provide Enhanced Diagnostic Data to Support Long Term Operations

## Testing Improvements:

- Automated Data Collection and Analysis
- Rapid Reporting
- Automatic Detection of Outliers
- Streamlined Connections





# Nuclear I&C Training



## OUR TRAINING EVENTS

### Fundamentals of EMC Qualification Testing and Analysis

*February 13-15, 2024  
Orlando, FL*

### Cable Aging Management for Nuclear Power Plants

*February 13-15, 2024  
Orlando, FL*

### Testing and Troubleshooting of I&C Systems

*August 19-23, 2024  
Knoxville, TN*



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Thank You

*Questions?*

