

Equipment Qualification Services

Background

Westinghouse's Qualification Operations, has been an industry leader in providing equipment qualification services to the nuclear industry for over 40 years and is headquartered in New Stanton, Pennsylvania (USA) with global operations.

Westinghouse methodologies for qualification of Nuclear Safety-Related Electrical Equipment have been accepted and approved by the Nuclear Regulatory Commission (NRC).

Westinghouse provides our customers with both analytical and testing solutions, selecting the most efficient solution, to help lower costs.

Description

Westinghouse can provide qualification services to support customers, including:

- Environmental qualification analysis and testing services
- Seismic qualification analysis and testing services
- Electromagnetic interference/radio-frequency interference (EMI/RFI) analysis and testing
- Custom Qualification Reports
- Site support
- Westinghouse can also perform qualification by similarity by using its vast experience and extensive database from previously performed tests / analyses, and years of radiation and thermal material testing.

Environmental Qualification

Westinghouse performs environmental testing, analysis or combined testing for:

- Full Harsh Environment qualification including:
 - LOCA / HELB
 - Thermal Aging
 - Radiation Aging
 - Licensing Support with NRC Inspections
- Plant/Equipment Life Extensions
 - Review of existing equipment operation/usage
 - Extension of component qualification
 - RTD's
 - Motors
 - Relays
 - Electrical Penetration Assemblies (EPA's)
 - Cables and Splices
 - NRC Limited Condition Operations (LCO) or Proof of Operability
- Mild Environment
 - Normal/Abnormal environment cycle testing including:
 - Temperature
 - Humidity
 - Frequency
 - Voltage
 - Wear Aging/Conditioning

Seismic Qualification

Westinghouse performs seismic testing, analysis or combined testing and analysis for:

- Instrumentation and Control equipment
- Breaker components and switch gear lineups
- Electrical Cabinets and components
- Flow-induced vibration for RTD's
- Fans/Motors
- Power Supplies
- Relays
- Control Room Consoles

EMI/RFI Testing

As an industry leader in providing digital I&C to utilities, Westinghouse has developed the knowledge and experience base to perform successful EMI evaluation, testing and design.

Westinghouse can verify that the digital equipment in U.S. plants complies with applicable EMI NRC Regulatory Guides, American National Standards Institute/ Institute of Electrical and Electronics Engineers, Electric Power Research Institute (ANSI/IEEE, EPRI) and/or Military (MIL) Standard requirements.

Globally, Westinghouse can verify that digital equipment complies with the European Union (EU) directives and International Electrotechnical Commission (IEC) requirements for Conformité Européene (CE) certification.

Site Support

Westinghouse's experienced personnel can perform equipment walk-downs to confirm that safety-related equipment is installed in the facility in the same manner in which it was qualified, and to determine the seismic resistance of equipment. Westinghouse staff can conduct onsite modal and vibration testing to determine the natural frequencies and equipment responses needed for seismic qualification.

Regulations and Standards

Testing and analysis are performed in accordance with regulations and standards, including the following:

- NRC Regulatory Guides and requirements
- IEEE Std. 344, IEEE Std. 323 and supporting standards
- IEC International Standards
- Uniform and International Building Codes
- American Society of Mechanical Engineers (ASME), American
- Institute of Steel Construction and other industry codes
- EMI directives and guidelines

Quality Management System

The Westinghouse Quality Management System (QMS) has been developed to comply with regulatory, industry and customer quality requirements for items and services provided by Westinghouse global operations.

Benefits

The Westinghouse equipment qualification services provide:

- Experience with Regulators and Regulatory Requirements worldwide
- Solutions that combine both analysis and testing
- In-house testing capabilities
- Commercial dedication products to customers to solve problems related to obsolescence, like-to-like replacement, installation, and time constraints
- The knowledge and experience base to perform successful EQ evaluation, testing and design