



Engineering Services to support Appendix IV integration

Description

TRILLIUM Valves USA™ (formerly Weir Valves & Controls USA Inc.) offers engineering analysis to assist nuclear power plants in complying with the ASME OM Code Appendix IV.

Appendix IV establishes the requirements for Preservice and Inservice Testing (IST), to assess the operational readiness of active pneumatically operated valves (AOVs) in reactor power plants.

It is the plant's responsibility to establish performance assessment test acceptance criteria and technical basis, including margin, that provides reasonable assurance the pneumatically operated valve is capable of performing its specific functions.

Data obtained from a test required by Mandatory Appendix IV can be analyzed by the TRILLIUM Valves USA™ Engineering team to determine if AOV performance is acceptable for Atwood & Morrill® Main Steam Isolation Valves (MSIV).

Since TRILLIUM Valves USA™ is the Original Equipment Manufacturer of the Atwood & Morrill® Main Steam Isolation Valve, we can provide the following:

System & Component Design Basis Review

A&M® will perform an in-depth review of each component from Original Equipment Manufacturer (OEM) design documentation.

Performance Evaluation

A&M® can organize a method to quantify the MSIV ability to operate under a Design Basis Accident (DBA) scenario.

Documentation

TRILLIUM Valves USA™ will generate a report that includes mathematical models with specific design basis inputs and results that are easy to understand.

Engineering Reports are available in the following formats:

- 1) brief mathematical report with calculations.
- 2) full written report with calculations and explanations of the function of the internal components of the MSIV.
- 3) electronic MathCAD file, which will allow the plant to calculate design margin based on varying DBA scenarios.

Validation

We will establish test parameters and a baseline for functional margin acceptance and performance assessment test.

Testing parameters may include:

- Stem position
- Line pressure
- Stem force
- Stuffing box friction
- Spring force vs. stroke position
- Pneumatic force vs. stroke position
- Performance margin vs. stem position

Contact us at valvesusa@trilliumflow.com for further information or to request a quotation.

