



**Maintaining
Equipment
Qualification When
Purchasing
Replacement
Components**

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Overview

- Problem Statement
- Possible Procurement Methods
- Importance of Effective Supplier Oversight When Purchasing Qualified Equipment
- Conclusions

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Problem Statement

- How to ensure that equipment qualification requirements are maintained when purchasing replacement nuclear safety-related components
 - Requirements are extensive and complex
 - Long time periods sometimes exist since the original qualification was performed
 - Original OEM may no longer be in business or if still in business may no longer support the components being procured

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Possible Procurement Methods

- Purchase identical or “similar” component from OEM with certification to original qualification
 - OEM may no longer supply nuclear safety-related components
 - OEM may not have maintained design control from a qualification perspective
 - Sub-vendor control is critical
 - Requires similarity analysis if not identical

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Possible Procurement Methods

- Purchase new updated equipment from nuclear safety-related supplier
 - Requires requalification, possibly to updated standards
 - Risk with interface compatibility
 - Possible introduction of new previously unanalyzed failure modes

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Possible Procurement Methods

- Purchase identical or “similar” component from commercial supplier/distributor, commercial OEM, or third party dedicicator
 - Requires commercial grade dedication
 - Authorized distributors may not have traceability back to the OEM
 - Typically no access to design/manufacturing information
 - Need to justify lot formulation for sample testing
 - Requires extensive knowledge of potential failure modes and effects
 - Certain critical characteristics can not be verified by testing
 - May have to rely on commercial OEM testing and traceability

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Importance of Effective Supplier Oversight When Purchasing Qualified Equipment

- When purchasing from suppliers with nuclear quality assurance programs
 - Need to verify supplier has sufficient programs in place to control design or has alternate methods of establishing similarity to previously tested devices
 - Typically only OEM has access to design control and manufacturing information
 - Need to ensure supplier has proper control of sub-vendors
- When purchasing from commercial suppliers
 - Need to verify basis of any certifications relied upon as part of qualification
 - Certifications provided by non-audited commercial grade suppliers or distributors can not be relied upon without performing additional inspection, analysis or testing

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Conclusions

- Licensee's are responsible for ensuring their equipment is properly qualified
- There are different paths available for procuring replacement qualified equipment, each with its own unique considerations
- Effective supplier oversight can play a critical role in maintaining equipment qualification

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