

EFCOG Best Practice #63

Qualification of Suppliers/Distributors for Safety Related SSCs

Facility: Los Alamos National Laboratory, West Valley Demonstration Project

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Brief Description of Best Practice: Successful efforts to prevent use of unqualified suppliers or items include:

1. Develop and implement a commercial grade item dedication (CGID) process to dedicate items obtained from unqualified sources. This process relies heavily on the responsible engineer's or Subject Matter Expert's (SME) knowledge of the function(s) and failure modes of the item, the associated critical characteristics, and the manufacture's ability to provide item traceability.
2. Qualify distributors that have comprehensive sub tier supplier qualification programs.
3. Meet the intent of DOE G 414.1-2A, G 414.1-3 and DOE G 414.1-1B by assuring that audits or surveillances are performed through every layer of the supplier chain including foreign manufacturers. Ensure the latest requirements of ASME NQA-1 parts I and II including addenda's are consulted when considering CGID. There have been many improvements made in this area of NQA-1 over the years.
4. Utilize the supplier joint audit procedure and process developed by the EFCOG Supply Chain Team.

Why the best practice was used: Since the decline of the commercial nuclear industry, suppliers have not kept up their rigorous NQA-1 type programs. In addition, a large portion of the raw and manufactured products (steel, pipe, reinforcing steel, etc.) have migrated to foreign sources.

This presents a major problem as the majority of key products are being purchased from distributors who obtain these items from often complex supply chains and have no direct contact with the manufacturers. DOE guide orders; such as, DOE G 414.1-3 2A, and 1-1B make it clear that certain conditions and controls must be included in the process of obtaining qualified material, parts, and components:

- Certified Material Test Reports (CMTRs) - A written and signed document that is approved by a qualified party and contains data and information that attests to the actual chemical and physical properties of an item and the actual results of all required tests. The burden falls on the purchaser to assure the integrity of CMTRs through independent test/inspections.
- When the supply chain involves multiple suppliers, each step in the supply chain process should be validated by audit, source inspection, or other methods as appropriate.
- contractors should be cautious about accepting items based solely on supplier-generated documentation or part-number verification, unless the supplier's

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quality system for generating the documentation and maintaining part number configuration control has been previously verified through requirement and performance-based evaluations.

- Items intended for use in safety systems and mission critical facilities should be procured from suppliers whose quality assurance programs have been evaluated by the purchaser, other DOE contractors, or third party certification agencies.

What are the benefits of the best practice: Confirming your Design, Procurement and QA programs have the necessary processes in place to ensure a high level of confidence that what is being procured will meet or exceed the expectations of the requirements imposed on the contractor, suppliers and service providers.

What problems/issues were associated with the best practice: The challenge is especially difficult because many of the actual manufacturers are foreign and many supplier qualification programs do not actually validate throughout the sub-tier supply chain to the manufacturers. Additional problems include:

- For smaller projects, facilities, and/or maintenance, being able to meet schedules with the lead time necessary to have the supplier quality group evaluate suppliers.
- Supplier qualifications can include distributors and not manufacturers.
- Supplier quality typically does not provide a list of those suppliers or distributors that have been rejected.

How the success of the Best Practice was measured: Knowing which suppliers are available that can meet the necessary requirements and more importantly those that can not.

Description of process experience using the Best Practice: Realizing how the decrease in nuclear quality suppliers over the years has affected the DOE and other nuclear industry material needs especially with safety related or significant items and services. This alone should raise awareness to know without question what is being procured and from whom.