

EFCOG Best Practice #61

Engineered Equivalency Applied to Construction Changes

Facility: Los Alamos National Laboratory, West Valley Demonstration Project

Point of Contact: Tim J. McEvoy, 505-667-8172, mcevoytj@lanl.gov; or Bob Carter, 509-377-3220, bob.carter@wch-rcc.com

Brief Description of Best Practice: Change Control to Structures, Systems, or Components (SSCs) for functions and critical characteristics

Each SSC should be tied to specific functions and the necessary critical characteristics (based on failure modes) needed to perform those functions should also be identified. When a request for a change is submitted, the responsible engineer should then evaluate the proposed change to ensure that the item possesses the required characteristics.

In order to properly track the characteristics they should be listed on a master equipment list or bill of materials (or equivalent) that list the equipment by its associated function (this is necessary because the same equipment model number/part number can support different functions and therefore possess different critical characteristics).

Why the best practice was used: Inadequate evaluation and bases for installation of equipment that varies from the design can result in equipment failure and nonconformance.

What are the benefits of the best practice: Knowing how requests for changes affects the SSC or possibly other SSC's, otherwise extent of the change to critical characteristics is known prior to any actual nonconformance or equipment failure is realized.

What problems/issues were associated with the best practice: Timing and cost involved with the development of the master equipment list or bill of materials later in the project rather than at the beginning.

How the success of the Best Practice was measured: Less equipment failure, fewer nonconforming conditions generated due to Unreviewed or Inadequate SSC change evaluations.

Description of process experience using the Best Practice: Raised awareness in design and operations organizations of the facilities SSC's and their critical characteristics.