

FACILITIES MAINTENANCE AND ENGINEERING PROCEDURE		
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1.0 PURPOSE

To define the requirements for performance and documentation of the design review process to assure that the components, systems, and structures are adequately designed and that the designs are properly integrated.

2.0 GENERAL

The design review process is performed on selected key design documents that describe the design of a particular component, system or structure. Key design documents include, as appropriate, system descriptions, flow diagrams, piping and instrument diagrams, control logic diagrams, electrical single-line diagrams, arrangement drawings, equipment location drawings and structural drawings. Calculations and specifications in support of key design documents are included in this category.

3.0 PROCEDURE

The Lead Engineer for the Scope of Work shall establish which components, systems and structures are to be part of the design review process, and the appropriate method to be used. The type and depth of the design review process shall be dependent upon the nature of the item and its similarity with previous proven designs.

The design review shall be performed when the basic design has been substantially completed. The design review shall also be performed whenever a significant change (as determined by the Lead Engineer for the Scope of Work) is made to a previously reviewed design.

3.1 Design Reviews

The design review shall be accomplished by one of the following methods (1) interdisciplinary design review, or (2) individual critical design review. The method selected shall be planned and by the Lead Engineer for the Scope of Work and shall address the Design Review Elements (Exhibit A) that are applicable to the component, system or structure to be reviewed.

3.1.1 Interdisciplinary Design Review

When design verification is accomplished by interdisciplinary design review, the review team shall be composed of individual(s) knowledgeable in the component, system or structure design requirements. They may have participated directly in the design of that particular component, system or structure. However, an individual who has participated directly in the design shall not be responsible for the independent verification of design within the individual's discipline. The team members shall be appointed by the Lead Engineer for the Scope of Work.

Before the review, the Lead Engineer for the Scope of Work shall distribute, to the team members, a design review package comprised of the key design documents used to represent the design and the design input requirements. Other documents, including calculations, specifications, etc., shall be available for review, when necessary.

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A team review can be conducted either in a meeting or separately by the individual disciplines as long as the review is conducted concurrently by these disciplines and all comments are fully distributed and their resolution agreed upon by the applicable disciplines.

3.1.2 Individual Critical Design Review

If selected, this design review method may be satisfied by the independent check of the document, performed in accordance with the appropriate FME procedure (e.g., FMEP-P-0300, Engineering Drawings; FMEP-P-0330, Design Calculations; FMEP-P-0300A, Modification Drawings; and FMEP-P-0400, Specifications). It must be confirmed, however, that all the requirements of an Individual Critical Design Review are satisfied, i.e., that the independent checking:

- a) includes all applicable elements of Exhibit A
- b) is performed by an individual who has adequate qualifications to have originated the document

3.2 Documentation

Design verification of components, systems, and structures shall be documented on the Design Review Report (Exhibit B) or by meeting notes, interoffice memoranda or notes to file signed by the Lead Engineer for the Scope of Work. The documents shall include, as a minimum, the documents reviewed, summary of the review, conclusions, and the names and titles of the participants in the design review. Documentation of the design review by individual critical design review may be satisfied by signature/initials of the checker and date affixed on the design document.

Documentation of the design review shall be retained in the files in accordance with the applicable procedures.

FMEP-P-0325 Exhibits

- Exhibit A - Design Review Elements (1 pages)
- Exhibit B - Design Review Report (1 page)