

Subject: Design Reviews	Effective Date:	Initiated by:
	May 13, 2011	Associate Director, Engineering and Infrastructure
	Supersedes: Rev. 1, dated 7/12/99	Approved: Director

Design reviews are an effective means of assuring the quality, reliability, and safety of systems. Line management is responsible to assure that appropriate design reviews are conducted before making major decisions. Based on a graded approach, peer reviews, conceptual, preliminary, and final design reviews are scheduled.

Peer Reviews are technical reviews to discuss progress or key decisions arising during the course of the design process.

The conceptual design review objectives are to:

- assure proper requirements are identified. Requirements should include functional, ES&H, regulatory, reliability, project specific, test, cost, and schedule.
- review design and development plans and schedules
- evaluate proposed design approaches

The preliminary design review objectives are to:

- verify the proposed design is consistent with the design objective
- review the results of analyses, calculations, and tests conducted to verify the design
- review the ability to fabricate and install the proposed design taking into consideration capabilities, tolerances, costs, reliability, and ES&H
- review procurement issues, e.g. build vs. buy
- review test requirements and plans
- review updated design and development plans and schedules
- assure the appropriate incorporation of recommendations from previous design reviews.

The final design review objectives are to:

- verify that the final design satisfies the requirements
- assure that detailed analyses, calculations, and tests were performed to validate the design
- assure the final product can be manufactured, inspected, assembled, stored, delivered, and installed reliably, safely, and cost effectively
- assure procurement issues have been identified and resolved
- verify that appropriate documentation is available for producing the final product (e.g. drawings, installation procedures)
- verify that appropriate test plans for the final product have been established
- assure the appropriate incorporation of recommendations from previous design reviews.

A Design Review Board consisting of a Chairperson, cognizant person, and independent engineers, technicians, or physicists is established. When appropriate, others are invited including ES&H, QA, and recognized experts or participants from outside of the Laboratory. Participants from outside the Laboratory for high risk/ high profile projects is expected for preliminary and final design reviews.

Design Reviews are chaired by a Design Review Chairperson (DRC). The Associate Director for Engineering and Infrastructure maintains a roster of chairpersons who are formally trained and approved to conduct reviews. The DRC has the responsibility and authority to conduct the review in a thorough and professional manner and to determine whether the review was successful. If the review is not successful, the DCR has the responsibility to dismiss the review and inform the

project that additional work is required before the review can be completed. The DRC assures the results (including open items) of the design review are documented and reported to the Responsible Line Manager (RLM), cognizant individuals, presenters, other stakeholders and attendees, and the Associate Director for Engineering and Infrastructure. The RLM is responsible for the closure of open items (chit) once the project has provided a resolution to that item.