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Part 51: Safety Analysis, Limits and Authorization

51.1
Safety Analysis Reports for Category II and III Nuclear Facilities

(Formerly H&SM S2.23)

Recommended for approval by the ES&H Working Group

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New document or new requirements

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Nuclear Safety Analysis Reports*

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* Minor revision

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Nuclear Safety Analysis Reports

1.0 Introduction

Department of Energy (DOE) O 5480.23, *Nuclear Safety Analysis Reports*, Chg 1, contains detailed requirements for performing safety analyses that evaluate the hazards and establish the safety basis for Category II and III nuclear facilities. Additional guidance is provided in DOE-STD-3009-94, *Preparation Guide for U.S. DOE Nuclear Facility Safety Analysis Reports.* For applicability of this supplement for nuclear facility hazard categorization requirements, refer to DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE O 5480.23, Chg 1*.

Note: The requirement for Certificates of Compliance for Type B containers does not apply.

2.0 Requirements and Guidance

DOE O 5480.23, Chg 1, and its associated DOE standards apply to all LLNL nuclear facility classified as Category II or III and contain the minimum requirements for performing the safety analyses and preparing the safety analysis reports (SARs), which document the results.

A SAR shall be prepared for all Category II and Category III nuclear facilities. Before approving the document, the facility associate director (AD) shall ensure that an independent review of the SAR has been performed. The LLNL-approved SAR document will then be forwarded to the DOE Oakland Operations Office (DOE-OAK) for approval. DOE's approval of the SAR shall be obtained before a new facility is operated.

The facility AD for each LLNL nuclear facility with a DOE-approved SAR shall maintain the accuracy of the SAR through the unreviewed safety question process described in Document 51.3, "Unreviewed Safety Question Process," in the *Environment, Safety, and Health (ES&H) Manual*.

Attachment 1 to the order, "Interim Guidance for DOE O 5480.23, Chg 1" and DOE-STD-3009-94 contain guidance on the format and content to be used when preparing SARs. DOE-STD-1027-92 contains screening requirements on initial categorization of nuclear facilities for application of DOE O 5480.23.

Document 3.1, "Safety Analysis Program," in the *ES&H Manual* contains supplementary guidance on the hazard identification process, information about how program and support organization personnel provide input to the process, and Laboratory approval requirements for safety basis documentation.

3.0 Responsibilities

All workers and organizations shall refer to Document 2.1, "Laboratory and ES&H Policies, General Worker Responsibilities, and Integrated Safety Management," in the *ES&H Manual* for a list of general responsibilities. This section describes specific responsibilities of LLNL organizations and workers who have key safety roles.

Facility ADs are responsible for implementing the requirements in DOE O 5480.23, Chg 1, and LLNL approval of the SAR.

Annual updates to SARs will be reviewed and approved as directed by the facility AD and submitted to DOE-OAK for approval.

4.0 Work Standards

4.1 Work Standards

DOE O 5480.23, Chg 1, *Nuclear Safety Analysis Reports.*

DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE O 5480.23,* Chg 1, Sections 2,3,4, and Attachment 1 (except for the requirement for Certificates of Compliance for Type B containers).

5.0 Resources for More Information

5.1 Contacts

- Directorate assurance manager
- ES&H Team leader

5.2 Other Sources

DOE-STD-3009-94, *Preparation Guide for U.S. DOE Nonreactor Nuclear Facility Safety Analysis Reports.*

Appendix A

Terms and Definitions

Final Safety Analysis Report (FSAR)	A FSAR is the report of the safety analysis of a facility, prepared to show that the facility can operate safely as constructed. It is the final revision of a PSAR.
Preliminary Safety Analysis Report (PSAR)	A PSAR is the report of the safety analysis performed during the design phase of a project.
Safety Analysis	A documented process to (1) systematically identify hazards within a given operation; (2) describe and analyze the adequacy of measures taken to eliminate, control, or mitigate identified hazards; and (3) analyze and evaluate potential accidents and their associated qualitative risks. The safety analysis uses a graded approach commensurate with the associated hazards and controls involved with the activity, operation, or facility.
Safety Analysis Report (SAR)	A report that documents the safety analysis for a nuclear facility which demonstrates that the facility can be constructed, operated, maintained, shut down, and decommissioned safely and is in compliance with applicable laws and regulations.
Safety Basis	The combination of information relating to the control of hazards at a facility (including design, engineering analyses, and administrative controls) upon which DOE depends for its conclusion that activities at that facility can be conducted safely.