ANSI/NIRMA CM 1.0 – 2015

American National Standard
for

Guidelines for Configuration Management of Nuclear Facilities

Reaffirmation of 2007 Revison

Approved July 2015

NUCLEAR INFORMATION AND RECORDS MANAGEMENT ASSOCIATION

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Abstract

This standard provides a description of the objectives to be achieved in the subject area of facility configuration management. It also contains definitions and functional criteria for the cost-effective implementation of configuration management at a nuclear facility, using a graded approach in defining configuration management requirements. It was prepared by members of the NIRMA Configuration Management Committee and the Configuration Management Benchmarking Group (CMBG) and received broad input from the electrical power generation and Department of Energy segments of the nuclear industry.

The purpose of this standard is to enable the implementation of effective configuration management so that conformance between design requirements, physical configuration and Facility Configuration Information can be achieved.

Contents

Foreword

(This foreword is not part of the ANSI/NIRMA Standard for Configuration Management of Nuclear Facilities)

This standard was initially published in 2000 to provide a benchmark set of guidelines for the design, development and implementation of Configuration Management (CM) Programs at operating nuclear facilities. It has been embraced by the nuclear power plant community and CM practitioners charged with establishing CM Programs for operating plants. It also has been adopted for use in associated CM Guidance issued by the International Atomic Energy Agency (IAEA).

Following the initial issuance in 2000, feedback and several lessons learned were incorporated into the current 2007 version. In addition, the 2007 version provided enhanced direction for change control activities which aligns with applicable guidance provided by the Institute of Nuclear Power Operations (INPO).

CM practitioners and other industry experts currently involved in the operating nuclear facilities have been surveyed to identify emerging issues that would warrant revision to the current standard. Industry feedback has indicated no new issues exist that need to be addressed at this time. Thus, NIRMA reaffirms the current ANSI/NIRMA CM 1.0 - 2007 Standard as valid and applicable for use.

It should be noted that this ANSI/NIRMA Standard is focused primarily on and supports operating nuclear facilities. With the onset of the construction of new nuclear power plants, NIRMA recognizes the need to monitor industry activities and identify Configuration Management issues that may arise during the pre-operational phases of new nuclear power plant projects.

For Pre-Operational Phase Configuration Management Programs, the Electrical Power Research Institute (EPRI) has developed a Technical Report that includes fundamental issues to be addressed for new nuclear power plant projects. This is EPRI Technical Report #1022684, *"Elements of Pre-Operational and Operational Configuration Management for a New Nuclear Facility," April 2011.*

NIRMA will be coordinating with applicable industry groups, e.g., EPRI and INPO, to determine appropriate revisions to the ANSI/NIRMA CM 1.0 Standard for the next review cycle. Issues identified will be considered for incorporation into a future revision of ANSI/NIRMA CM 1.0.

The 2007 revision to the standard was prepared by a team of representatives from NIRMA and the Configuration Management Benchmarking Group (CMBG) involved in the management of utility nuclear generating plants and Department of Energy (DOE) nuclear facilities. This document serves as a standard for the successful implementation of configuration management (CM). It draws on previously issued ANSI, DOE and NIRMA standards and guidelines, as well as industry experience and is directed primarily at organizations that manage a nuclear facility (in any stage of its life cycle). The concepts and elements identified in this standard may also be adapted for application at non-nuclear facilities.

The standard contains functional criteria for the cost-effective implementation of configuration management at a nuclear facility. Key implementation factors include use of a graded approach in defining configuration management requirements. Its purpose is to enable the implementation of effective configuration management so that conformance between design requirements, physical configuration and Facility Configuration Information can be achieved.

Management of the Facility Configuration Information (FCI) is a major objective and is addressed through recognition of appropriate process controls.

This standard does not address the subject of configuration management for computer software. Software CM is a component of configuration management for a facility; however, existing industry guidelines and standards provide adequate guidance on this topic. Thus, it is not included in this standard.

This standard does not provide configuration management related guidance regarding product acquisition or management. It also does not provide guidance regarding performing design basis reconstitution.

This standard addresses facility authorization or licensing processes only in the context of facility configuration changes. It does not generally address the processes or requirements associated with obtaining or maintaining authorization or a license for construction or operation of a facility.

NIRMA wishes to acknowledge the efforts of the following subcommittee members who, during the course of its development, provided a significant contribution to the content of the 2007 revision of the standard:

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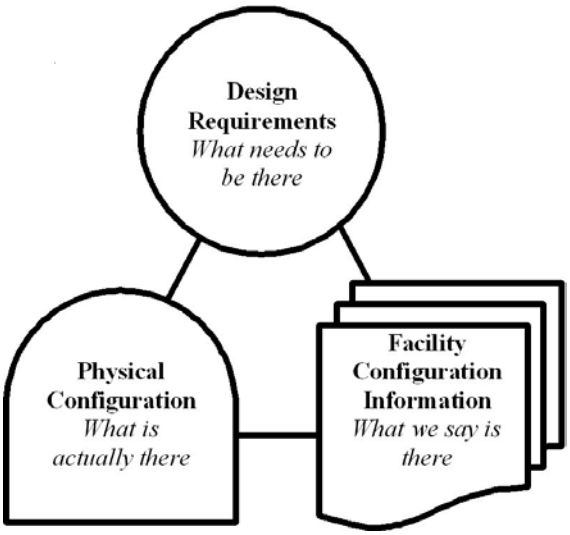
CONFIGURATION MANAGEMENT OF NUCLEAR FACILITIES

1.0 SCOPE

This standard contains functional criteria for the cost-effective implementation of configuration management at a nuclear facility. Its purpose is to enable the implementation of configuration management so that equilibrium between design requirements, physical configuration and Facility Configuration Information can be achieved and maintained in order to reduce costs and risk of error. This objective is depicted in Figure 1.



Objectives of Work Processes Are:
Elements conform all of the time
All changes are authorized
Conformance can be verified

Figure 1 - Configuration Management Equilibrium Model

The guidance in this standard may be applied during all phases of the facility life cycle.

This standard does not provide configuration management related guidance regarding product or software acquisition or management. It also does not provide guidance regarding facility authorization or licensing processes, or reconstitution of design basis information.

2.0 DEFINITIONS

These definitions were developed to reflect general industry practices and are provided as a common reference relative to configuration management of nuclear facilities. Application of these definitions should take into consideration relevant terminology in effect at a facility as well as applicable industry guidance documents that address specific terms.

2.1 As-built - Documentation or data verified by physical inspection as depicting the current physical configuration within specified tolerances and verified as consistent with the design requirements, e.g., Piping and Instrument Diagrams.

2.2 As-designed - Facility Configuration Information that describes the facility configuration based on approved, but not yet implemented changes.

2.3 Authorization Basis Information- [Also referred to as Licensing Basis Information] - Those aspects of the Facility Configuration Information relied upon by the agency that authorizes or licenses facility construction and operation, (e.g., DOE, NRC) to understand the proposed facility configuration. It is not the entire licensing or authorization basis for the facility. Authorization basis information is described in documents such as the facility Safety Analysis Report, other safety analyses, hazard classification documents, the Technical Specifications or Technical Safety Requirements, and facility specific commitments