

10 CFR Part 70 and Part 76 Standard Review Plans

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Introduction

The revised 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material(SNM),” was published by the U.S. Nuclear Regulatory Commission (NRC) as a Final Rule in Federal Register notice, Volume 65, Number 181, with an effective date of October 18, 2000, (except for Sec. 70.76, which will become effective after guidance has been developed by the NRC and a Federal Register notice is published specifying the effective date of Sec. 70.76). In addition, 10 CFR Part 76, “Certification of Gaseous Diffusion Plants,” was published by the NRC as a Final Rule in Federal Register notice, Volume 59, Number 48960. The Gaseous Diffusion Plants (GDPs) came fully under Part 76 and NRC regulation in March, 1997.

Background

A Standard Review Plan (SRP) for mixed-oxide fuel fabrication facilities was finalized as NUREG-1718¹, an SRP for other Part 70 fuel cycle facilities was drafted as NUREG-1520², and an SRP for Part 76 gaseous diffusion plants was drafted as NUREG-1671³.

An SRP provides guidance to the NRC staff reviewers in the Office of Nuclear Material Safety and Safeguards who perform safety and environmental impact reviews of applications to

construct or modify and operate fuel cycle facilities. An SRP ensures the quality, uniformity, stability, and predictability of the NRC staff reviews. An SRP also makes information about licensing acceptance criteria widely available to interested members of public and the regulated industry. Each SRP section addresses the responsibilities of persons performing the review, the matters that are reviewed, the Commission's regulations pertinent to specific technical matters, the acceptance criteria used by the NRC staff, how the review is accomplished, and the conclusions that are appropriate to summarize the review. NRC staff analyses are intended to provide regulatory confirmation of reasonable assurance of safe design and operation. Because the intent of an SRP is to provide consistent guidance, both among the staff and across different facilities in the industry, they should be sufficiently flexible to allow use across a wide spectrum of licensing or certification actions with only minor regulatory differences.

Use of Acceptance Criteria

The acceptance criteria in an SRP are intended to communicate the underlying objectives but not to represent the only means of satisfying that objective. Applicants should tailor their safety program to the features of their facility. If approaches different from those described in an SRP are chosen, applicants should identify in their license application the portions of their license application that differ from the design approaches and acceptance criteria of an SRP and evaluate how the proposed alternatives provide an acceptable method of complying with the Commission's regulations. Although this is not a regulatory requirement, failing to follow the recommended practices and/or justify alternatives can have a significant impact on the amount of

staff time and effort needed to conduct a licensing or certification review. The NRC staff retains the responsibility to make an independent determination of the adequacy of what is proposed.

Discussion

NRC Nuclear Criticality Safety (NCS) license reviewers examine license application information to determine the adequacy of the applicant's NCS program. NRC NCS reviewers are the primary reviewers for the NCS section of an SRP and may also be secondary or supporting reviewers in other sections of an SRP (e.g., Organization and Administration, Integrated Safety Analysis, Fire Protection, Management Measures). For Part 70 new facilities and processes, there are additional requirements for Baseline Design Criteria under 10 CFR 70.64 that is described in References 1 and 2. For the GDPs (Part 76 facilities), the rule does not define baseline design criteria as these were existing facilities that had operated for many years under the regulatory authority of the U.S. Department of Energy (DOE). However, the NCS section of the Part 76 SRP does contain requirements codified in the certificant's Safety Analysis Report (SAR) that contains technical certification requirements. The certificant is committed to follow the double contingency principle for new or existing operations, with the exception of a small number of singly contingent operations.

In the NCS section of an SRP, the areas of review include management of the NCS program, organization and administration, management measures, methodologies and technical practices. Examples in the area of management of the NCS program include: preventing an inadvertent nuclear criticality, establishing and maintaining NCS safety parameters and procedures,

developing NCS determinations so that under normal and credible abnormal conditions all nuclear processes remain subcritical, and providing training in emergency procedures in response to an inadvertent nuclear criticality. Examples in the area of organization and administration include: experience, educational requirements, responsibilities, and authorities. Examples in the area of management measures include: training, procedures, and audits and assessments.

Examples in the area of methodologies and technical practices include: validated NCS methods, use of NCS controlled parameters and limits provide adequate margin of subcriticality for safety, adequate criticality accident alarm system coverage.

There are separate SRPs for the Part 70 and Part 76 facilities primarily because of the differing regulatory apparatus for licensed and certified facilities. However, the technical standards and acceptance criteria in all the fuel facility SRPs have a high degree of similarity, including similar organization and administration, management measures, and technical practices. The main areas of difference are due not to criticality safety but due to the different regulatory structure between the two types of facilities (i.e., criticality accident alarm systems, baseline design criteria, and the need to perform an Integrated Safety Analysis).

Conclusion

The use of an SRP ensures the quality, uniformity, stability, and predictability of the NRC staff reviews. NRC staff determine reasonable assurance of safety while applicants are responsible for safety. Applicants may use an approach different from that in an SRP as long as NRC staff determine that the approach meets the same objective as the approach described in an SRP.

References

1. NUREG-1718, *Standard Review Plan for the Review of an Application for a Mixed-Oxide (MOX) Fuel Fabrication Facility*, U.S. NRC, August 2000.
2. Draft NUREG-1520, *Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility*, U.S. NRC, May 2000.
3. Draft NUREG-1671, *Standard Review Plan for the Recertification of the Gaseous Diffusion Plants*, U.S. NRC, February 1999.