

October 17, 2007

Ms. B. Marie Moore, Vice President
Safety and Regulatory
Nuclear Fuel Services, Inc.
P.O. Box 337, MS 123
Erwin, TN 37650

SUBJECT: NUCLEAR FUEL SERVICES, INC., REQUEST FOR ADDITIONAL
INFORMATION CONCERNING CONFIGURATION MANAGEMENT
AMENDMENT (TAC L32632)

Dear Ms. Moore:

This letter is in response to your letter dated April 20, 2007, submitting an amendment request regarding your configuration management program. Our review has identified that additional information is needed before your request can be approved. The required additional information is specified in the enclosure. Please provide a schedule for submitting the information within 14 days from the date of this letter.

This action has been assigned Technical Assignment Control (TAC) number L32632. Please reference the above TAC number in any future correspondence related to this action.

If you have any questions concerning this letter, please contact me at (301) 492-3123, or via e-mail to kmr@nrc.gov.

In accordance with 10 CFR 2.390 of the U.S. Nuclear Regulatory's (NRC's) "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kevin M. Ramsey, Project Manager
Fuel Manufacturing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 70-143
License No.: SNM-124

Enclosure: Request for Additional Information

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Request for Additional Information
NFS Configuration Amendment
NFS Document Identification Number 21G-07-0053

1. Describe which features of the revised Configuration Management (CM) program would have prevented the spill of high-enriched uranium in March 2006 or a related event.

Section 2 of the Confirmatory Order dated February 21, 2007, requires revision of the CM program by license amendment. The requirement to revise the CM program is based on concerns associated with the spill of high-enriched uranium event.

2. Describe how the CM system accounts for changes made to the facility or processes (e.g., changes to the site, operating procedures, or control systems). Explain how the CM system is used to evaluate any facility changes or changes in the process safety information that may alter the parameters of an accident sequence by means of the facility's ISA methods as required by 10 CFR 70.72(d)(1) and (3).

10 CFR 70.72(a) requires that changes to the site, structures, systems, components, computer programs, and activities of personnel are evaluated, implemented, and tracked.

3. Describe the functional interfaces between the new CM program in Section 2.11 and the existing configuration management program in Section 2.12.1. Explain how functional interfaces between the two CM programs will be managed to prevent a loss of configuration control.

The intent of the Confirmatory Order for Program Improvements issued on February 21, 2007, is to require a more comprehensive and robust program that will prevent the loss of configuration control experienced during the spill of high-enriched uranium in March 2006. NUREG-1520, Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility, Section 11.4.3.1 states that an acceptable CM program should describe functional interfaces.

4. Identify the managers with key responsibility for the CM Program and specify whether the positions are independent of production responsibilities. If the positions are not independent of production responsibilities, justify why no conflict of interest exists between production responsibilities and configuration control responsibilities.

The intent of the Confirmatory Order for Program Improvements issued on February 21, 2007, is to require a more comprehensive and robust program that will prevent the loss of configuration control experienced during the spill of high-enriched uranium in March 2006. NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program should describe its organizational structure. In addition, NUREG-1520, Section 11.5.2.1, states that the reviewer should consider whether the application acceptably defines key responsibilities.

5. Provide a description of areas where the proposed program differs from the guidance in American National Standards Institute/Nuclear Information and Records Management Association, Inc. (ANSI/NIRMA) CM 1.0-2000 "Guidelines for Configuration

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Management of Nuclear Facilities.” Explain the reason for the differences and why the alternative provides reasonable assurance that configuration control will be maintained. The application states that the new program is "modeled" after the standard. Clarification is necessary to determine if there are differences. In addition, the Forward Section of the standard states that it does not address configuration management of items that NRC regulations require the configuration management program to address. The impact of this statement on the CM program is unclear.

10 CFR 70.64(a)(1) requires quality standards and records to be developed and implemented in accordance with management measures in order to provide adequate assurance that items relied on for safety (IROFS) will be available and reliable.

10 CFR 70.72(a) requires the establishment of a configuration management system that will evaluate, implement and track each change to the site, structures, processes, systems, equipment, components, computer programs and activities of personnel.

ANSI/NIRMA CM 1.0-2000, “Foreword” states that the standard does not address configuration management for computer software, product acquisition or management, design basis reconstitution, or the process or requirements for maintaining authorization basis or license for operation of a facility.

6. State where the structures, systems, and components (SSCs) subject to the new configuration management program are declared and identified. Describe how the baseline design requirements are established for the existing facility (i.e., all SSCs and IROFS subject to configuration control). Describe how the design requirements are translated into a fixed baseline design basis and measured against subsequent changes. Also, describe how conformity is verified between the design requirements, actual configuration, and the as-built facility documentation.

10 CFR 70.64(a) requires that the baseline design criteria for new processes at existing facilities be evaluated. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, “Guidelines for Configuration Management of Nuclear Facilities. ANSI/NIRMA CM 1.0-2000, “Foreword,” states that the standard does not provide guidance on how to perform design basis reconstitution.

NUREG-1520, Section 11.4.3.1, states that an acceptable program should have the current design bases for existing facilities, including design requirements, supporting analyses, and documentation. A verification process, including walkdowns, is complete and has verified that the configuration is consistent with as-built facility documentation.

7. Describe how "operational configuration information" is maintained in the new program. Figure 1 of ANSI/NIRMA CM 1.0 indicates that operational configuration information is part of the information to be maintained. However, the discussion in Section 2.11.1 does not appear to address operational configuration information.

10 CFR 70.72(a) requires the establishment of a configuration management system that will evaluate, implement and track each change to the site, structures, processes, systems, equipment, components, computer programs and activities of personnel. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000,

“Guidelines for Configuration Management of Nuclear Facilities.” ANSI/NIRMA CM 1.0-2000, Figure 1, provides an illustration depicting objectives of configuration management at a nuclear facility, which includes operational configuration information.

8. Describe how the configuration management program addresses computer software in the following areas:

- a. acquisition process;
- b. design requirements;
- c. verification and validation process;
- d. implementation;
- e. acceptance testing;
- f. documentation requirements;
- g. access control specifications;
- h. problem reporting;
- i. corrective action system;
- j. in-use tests; and
- k. configuration change control process.

10 CFR 70.72(a) requires that a configuration management system shall evaluate, implement and track each change to the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel.

ANSI/NIRMA CM 1.0-2000, “Foreword” states that the standard does not address configuration management for computer software.

9. Identify the policy or directive that proclaims management support for CM, and provides the criteria for the scope for CM, and establishes key terminology and definitions.

10 CFR 70.72(a) requires each licensee to establish a configuration management system.

The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, “Guidelines for Configuration Management of Nuclear Facilities.” ANSI/NIRMA CM 1.0-2000 Section 4.1.1, “Program Planning,” states that a CM program should include a policy or directive that proclaims management support for CM, provides criteria for the scope, and establishes key terminology and definitions.

NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program includes a comprehensive Configuration Management Policy.

10. Identify the mechanism for review and disposition of weaknesses discovered during CM assessments.

10 CFR 70.61(e) and 10 CFR 70.64(a)(1) requires that management measures are to be applied to ensure their availability and reliability to perform their function when needed.

The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.1.1, "Program Planning," states that a CM program should include a mechanism for review and disposition of weaknesses discovered during CM assessments. In addition, NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program documents all assessments and follow-up actions.

11. Describe how the organization(s) responsible for construction, operation, maintenance, modification, and decommissioning of the facility will implement the CM program.

10 CFR 70.64(a) requires that baseline design criteria must be addressed in the design of a new facility.

The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.1.1, "Program Planning," states that a CM program should include documents detailing how the organization(s) responsible for construction, operation, maintenance, modification, and decommissioning of the facility will implement the CM program.

NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program should address functional interfaces and describe acceptable methods for document control and change control.

12. Describe how the graded approach will be applied to implementing the CM criteria. Section 2.11.1 states that a graded approach will be used.

10 CFR 70.62(a) states that the safety program may be graded such that management measures applied are graded commensurate with the reduction of risks. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.1.1, "Program Planning," states that a CM program should include a graded approach to implementing the CM criteria.

NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program should define the specific attributes of the reduced level or levels of configuration management that would be applied to selected items, and identify those items that will be assigned the lesser level or levels of configuration management.

13. Describe how facility configuration information (FCI) is distinguished from other information such as special drawings, document numbers, or designators.

10 CFR 70.64(a)(1) requires quality standards and records to be developed and implemented in accordance with management measures. 10 CFR 70.72(a) requires documentation of facility changes and the change process. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.1.3, "Facility Configuration Information Scope Criteria," states that the FCI to be included in the program should be identified.

14. With regards to the eB CM information management tool program, describe:
- a. How the system will be used in conjunction with the current CM program and whether the system development and implementation complies with an industry standard;
 - b. How the system will ensure that all aspects of the CM program are properly captured and executed;
 - c. How the system will address any programming errors, or logic errors as they occur;
 - d. How the system will be maintained so that it remains available and reliable;
 - e. The qualifications or training that a person would be required to complete in order to be able to enter information into the system;
 - f. The qualifications or training that a person would be required to complete in order to be able to become the system administrator;
 - g. How the data will be backed up in case of a software/hardware malfunction or loss of power.
 - h. How the system will be tested.

10 CFR 70.62(a) requires that a safety program, including management measures, has to be established and maintained. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.1.6, "Configuration Control Information System" states an information system for configuration control should be established and policies and appropriate procedures should be defined and organized.

NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program should describe acceptable methods for document control and change control.

15. Describe how CM boundaries are established, maintained, and recorded.

10 CFR 70.65(b)(1)-(9) requires that the Integrated Safety Analysis (ISA) document shall contain a general description of the facility with emphasis on the areas that could affect safety, including controlled area boundaries e.g., (piping and instrumentation drawings, engineered IROFS, boundary descriptions, criticality safety analysis, dose calculations, process hazards analysis, process safety information ISA work sheets etc.) and that this information will be maintained at the facility site.

The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.2.2, "System and Process Boundaries," states that the boundaries of each system and process should be established and identifiable through controlled documentation or information system.

NUREG-1520, Section 11.4.3.1, states that an acceptable configuration management program should define the scope of items to be included in the configuration management function.

16. Describe the measures that have been taken to eliminate or minimize redundant FCI.

10 CFR 70.72(c)(1)(I) requires that changes to the site, structures, processes, systems, equipment, computer programs and activities of personnel do not create new types of accident sequences. 10 CFR 70.72(f) requires that records of changes shall be maintained. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.3.6, "Minimization," states that redundant FCI need to be minimized or eliminated.

17. Describe how the configuration management system is used to defend against common mode failure of IROFS on a process that lead to a high consequence or intermediate consequence events.

10 CFR 70.61(e) requires that IROFS are available and reliable to perform its intended function when needed. The amendment commits to model the CM program after ANSI/NIRMA CM 1.0-2000, "Guidelines for Configuration Management of Nuclear Facilities." ANSI/NIRMA CM 1.0-2000 Section 4.3.7, "Operational Configuration Information Status Control," specifies that appropriate method(s) should be available to facility operators that enable them to be aware of the current operational configuration and relate it to the configuration presumed by the design bases.