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August 27, 1985
JVM-85-138

Mr. Jack G. Spraul
U.S. Nuclear Regulatory Commission
Mail Stop EWS 305B
Quality Assurance Branch
Washington, DC 20555

Subject: Response to NRC Comments on Section 11.0 of the NUHOMS Topical Report

Reference:
- Topical Report for the NUTECH Modular Storage System for Irradiated Nuclear Fuel (NUH-001), Revision 0, November 1984
- Letter From L. C. Rouse to NUTECH, dated June 7, 1985
- Project No. M-39

Gentlemen:

This letter summarizes NUTECH's response to your review of the quality assurance (QA) program described in the referenced Topical Report. NUTECH's response to other safety review comments are not included herein.

Section 11.0 of the existing report was intended to provide an overview of selected portions of NUTECH's QA program as they apply to the design related activities surrounding NUHOMS. QA controls on other phases of NUHOMS, such as 10CFR50, appendix B criteria IV, VII, VIII, IX, X, XI, XII, XIII, and XIV, were considered beyond the scope of Topical Report and were not included.

In response to items contained in the referenced letter, NUTECH is the prime contractor for the system design and analysis. NUTECH will not, however, subcontract the fabrication and construction of the Robinson 2 independent spent fuel storage installation (ISFSI). Carolina Power & Light is responsible for procurement, fabrication, construction, testing, and operation of the Robinson ISFSI.

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In the event that NUTECH does perform some or all of the above functions on future ISFSI projects, section 11.0 of the Topical Report will be expanded to address all of the 18 criteria identified in the referenced letter. A draft copy of the proposed revision is enclosed for your review. In addition, the NUTECH Quality Assurance manual is intended to be used as a review basis and has been enclosed.

Please contact either myself or Brandon Thomas if you have any questions related to NUHOMS. Questions regarding NUTECH corporate QA policy may be directed towards NUTECH's Corporate Quality Assurance Manager, Mr. Wayne Booth.

Very truly yours,

A. Thomas Sladd / for JVM

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JVM/jj

Enclosure

11.0 Quality Assurance

11.1 Introduction

This chapter describes the quality assurance (QA) controls which apply to activities that affect the quality of safety-related NUHOMS system components. System components which are important to safety are defined herein. Activities affecting quality are defined by site specific contract and may include any or all of the following: design, procurement, fabrication, handling, shipping, storage, cleaning, erection, inspection, repair, or modification.

As invoked by contract, NUTECH's QA program shall be applied to important-to-safety activities, including the control of sub-contracted important-to-safety activities. The NUTECH Quality Assurance Program satisfies the requirements of 10CFR50, Appendix B and is described in the NUTECH Quality Assurance Manual. Quality Engineering Procedures (QEPs) contain procedural methods for implementing program requirements. Project Instructions (PIs) are utilized to address unique project requirements which are not specifically addressed QEPs.

A matrix comparing 10CFR50, Appendix B criteria with the NUTECH QA Manual and QEPs is provided in Table 11.1-1.

11.2 "Important-To-Safety" NUHOMS System Components

The design, procurement, inspection, testing, fabrication, and construction of the DSC and DSC internals shall be considered important-to-safety for the purpose of applying quality assurance program requirements. The design of the HSM shall be similarly considered important-to-safety. Procurement, inspection, testing, fabrication, and construction of the HSM shall be considered important-to-safety only if defined as such by utility QA policies and practices.

Additional system components such as the transporter, skid, hydraulic ram, and consumables (including the dry film lubricant) shall not be considered important-to-safety.

Suitable transfer casks licensed under 10CFR71 shall be employed to transport the DSC.

11.3 Project Organization

The NUHOMS system has been designed by a dedicated project organization at NUTECH Engineers, Inc., with corporate offices located in San Jose, California.

Table 11.1

10CFR50, App. B Criteria/ NUTECH QA Manual Section	Quality Engineering Procedure	
1.0 Organization	---	
2.0 QA Program	QEP 2-1	Quality Assurance Indoctrination and Training
	QEP 2-2	Qualification of Inspection, Examination and Test Personnel
	QEP 2-3	Qualifications and Duties of Personnel Performing ASME Section III Certification Activities
	QEP 2-4	Security Screening Program
	QEP 2-5	Administration of Stop Work Authority
	QEP 2-6	Order Entry and Project Planning
3.0 Design Control	QEP 3-1	Control of Design Input
	QEP 3-2	Preparation and Checking of Calculation Packages
	QEP 3-3	Preparation and Checking of Drawings, Specifications, Reports and Third Party Reviews
	QEP 3-4	Design Verification
	QEP 3-5	Computer Program Verification
	QEP 3-6	Identification and Control of Computer Program Error Messages
4.0 Procurement Document Control	QEP 4-1	Procurement Document Control

Table 11.1
(Continued)

10CFR50, App. B Criteria/ NUTECH QA Manual Section		Quality Engineering Procedure	
5.0	Procedures, Instructions, and Drawings	QEP 5-1	Preparation and Control of Quality Engineering Procedures
		QEP 5-2	Preparation and Control of Project Instructions
		QEP 5-3	Preparation and Control of Procedures, Instructions, and Drawings
6.0	Document Control	QEP 6-1	Document Control
7.0	Control of Purchased Services	QEP 7-1	Control of Purchased Items and Services
		QEP 7-2	Acceptance of Subcontracted Services
8.0	Identification and Control of Materials, Parts and Components	QEP 8-1	Control of Materials, Parts and Components
9.0	Control of Special Processes	QEP 9-1	Certification of NDE Personnel
		QEP 9-2	Welding Procedures Qualification
		QEP 9-3	Welder Performance Qualification
		QEP 9-4	Process Control
10.0	Inspection	QEP 10-1	Receiving Inspection
11.0	Test Control	QEP-11-1	Control of Engineering Tests
12.0	Control of Measuring and Test Equipment	QEP-12-1	Control of Measuring and Test Equipment
13.0	Handling, Storage, and Shipping	QEP 13-1	Special Handling, Storage, and Shipping

Table 11.1
(Continued)

10CFR50, App. B Criteria/ NUTECH QA Manual Section	Quality Engineering Procedure
14.0 Inspection and Test Status	QEP 14-1 Inspection and Test Status
15.0 Control of Nonconforming Items	QEP 15-1 Control of Nonconforming Items
16.0 Corrective Action	QEP 16-1 Corrective Action Reports (CARs)
	QEP 16-2 Reporting of Potential Significant Deficiencies and Defects
17.0 Records	QEP 17-1 Identification, Transmittal, Storage and Maintenance or Quality Records
18.0 Audits	QEP 18-1 Qualification and Certification of Quality Assurance Audit Personnel
	QEP 18-2 Audits, Surveys and Corrective Action
	QEP 18-3 Quality Assurance Surveillance

The organizational structure for a typical NUHOMS project is presented in Figure 11.2-1. A description of NUTECH's organizational structure, functional responsibilities, levels of authority, and lines of internal communication may be found in the NUTECH Quality Assurance Manual.

11.4 Design Control

Important-to-Safety NUHOMS design activities shall be implemented in accordance with the NUTECH Quality Assurance Manual and QEPs.

Errors and deficiencies in the design, including the design process are documented in the form of Audit Finding Reports or Corrective Action Reports.

Typically, valid industry standards and specifications are used for the selection of suitable materials, parts, equipment and processes for important-to-safety structures, systems, or components. Standard, or off-the-shelf items, and items previously approved for a different application are reviewed for suitability prior to selection.

11.5 Procurement Document Control

Procurement documents are prepared in accordance with the NUTECH Quality Assurance Manual and QEPs which delineates the actions to be accomplished in the preparation, review, approval, and control of procurement documents. Review and approval of procurement documents are documented on the Purchase Authorization prior to release.

The procurement documents shall identify the documentation required to be submitted for information, review, or approval by NUTECH or NUTECH's client. The time of submittal shall also be established. When NUTECH requires the Supplier to maintain specific quality assurance records, the retention times and disposition requirements shall be prescribed.

11.6 Procedures, Instructions, and Drawings

Activities affecting quality are prescribed and accomplished in accordance with the NUTECH Quality Assurance Manual, QEPs, Project Instructions, or other documented means.

11.7 Document Control

The issuance, distribution, and receipt of documents which prescribe activities affecting quality are controlled in accordance with the NUTECH Quality Assurance Manual and QEPs. Controlled documents include, but are not limited to the NUTECH

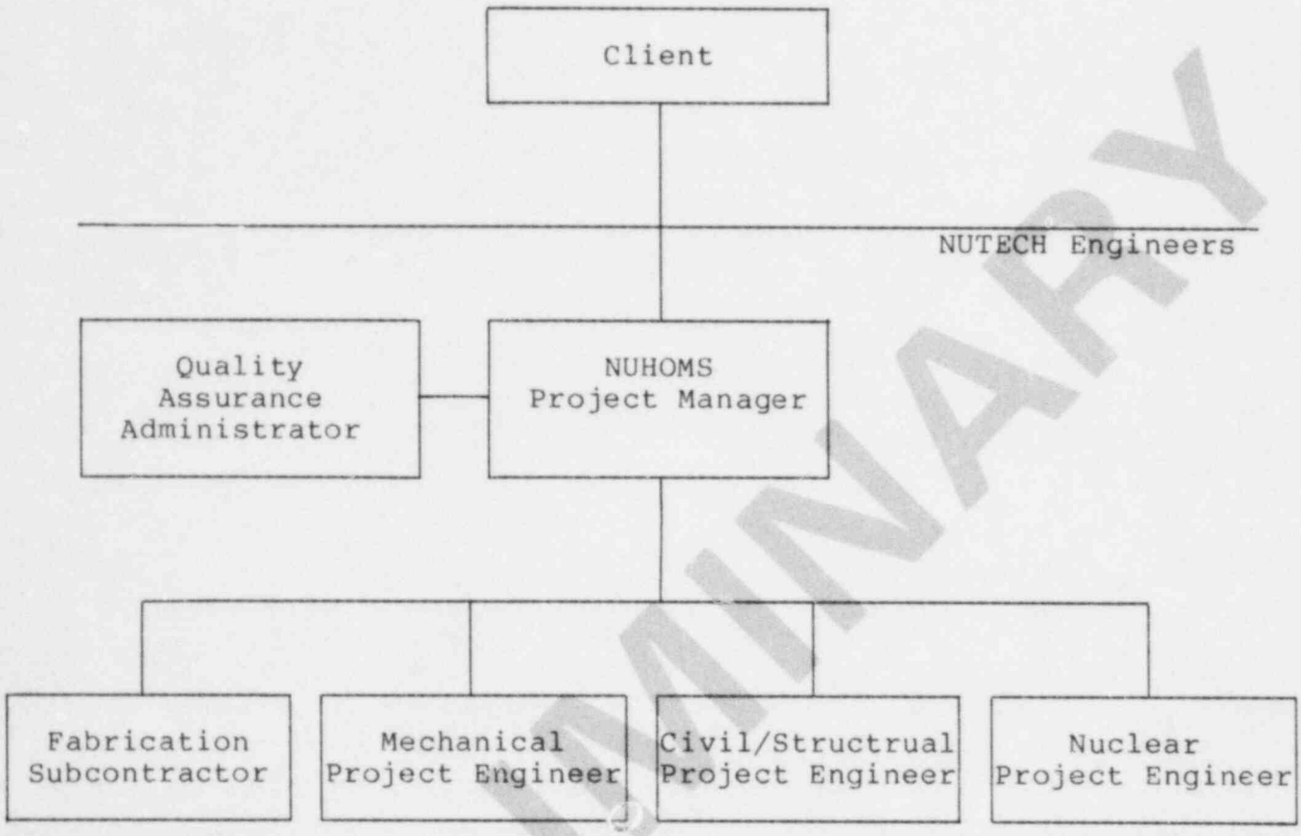

Figure 11.3-1

NUHOMS PROJECT ORGANIZATION CHART

design specifications and criteria documents, drawings, instructions, and test procedures.

The individuals or groups responsible for reviewing, approving, and issuing documents and revisions thereto are identified by the QEP which generates the document.

11.8 Control of Purchased Items and Services

The control of purchased items and services shall be implemented in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.9 Identification and Control of Materials, Parts, and Components

Materials, parts and components shall be identified and controlled in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.10 Control of Special Processes

The control of special processes, such as nondestructive examination, chemical cleaning, welding, and heat treating shall be performed in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.11 Inspection

Receipt inspections, and in-process and final inspections of NUTECH fabricated constructed, or erected items, systems, components, or structures shall be performed in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.12 Test Control

Test control shall be accomplished in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.13 Control of Measuring and Test Equipment

Measuring and Test Equipment shall be calibrated to NBS and controlled in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.14 Handling, Storage and Shipping

Handling, storage and shipping shall be conducted in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.15 Inspection and Test Status

The use of inspection and test status tags shall be accomplished in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.16 Control of Nonconforming Items

The NUTECH Quality Assurance Manual and QEPs define the requirements and assign the responsibilities for the control, identification, segregation, documentation, and close-out of nonconforming items to prevent their inadvertent installation or use in fabrication, construction, or erection.

Nonconformance reports identify the item description and quantity, the disposition of the nonconformance, the inspection requirements, and signature approval of the disposition.

Nonconforming items are segregated from acceptable items and tagged "rejected" or "conditional release" until properly dispositioned and closed out.

11.17 Corrective Action

Corrective action for significant conditions adverse to quality shall be taken in accordance with the NUTECH Quality Assurance Manual and QEPs.

11.18 Records

The NUTECH Quality Assurance Manual and QEPs define the scope of the records program such that sufficient records are maintained to provide documentary evidence of the quality of items and the activities affecting quality.

11.19 Audits and Surveillances

A comprehensive system of planned and documented audits including audits of suppliers and site construction activities verifies compliance with all aspects of the NUTECH Quality Assurance Program and to determine the effectiveness of the program.

Audits are performed by certified lead auditors and are planned, performed, and documented in accordance with the NUTECH Quality Assurance Manual and QEPs.

Unannounced QA surveillances may be performed on activities affecting quality by the NUTECH Quality Assurance Administrator, or his designee, on an as-needed basis to further assure compliance with QA requirements.