



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 3, 2000

MEMORANDUM TO: Susan F. Shankman, Deputy Director
Licensing and Inspection Directorate
Spent Fuel Project Office, NMSS

FROM: Chester Poslusny, Sr. Transportation Project Officer
Transportation and Storage Safety
and Inspection Section
Licensing and Inspection Directorate
Spent Fuel Project Office, NMSS *CP*

SUBJECT: SUMMARY OF PUBLIC MEETING WITH THE NUCLEAR ENERGY
INSTITUTE

On February 8-9, 2000, Spent Fuel Project Office (SFPO) staff met with Nuclear Energy Institute (NEI) and industry representatives in Williamsburg, Virginia, to discuss topics affecting the process to amend certificates of compliance (CoCs). The meeting was publically noticed on January 28, 2000. Forty-five participants including vendor and utility representatives attended the meeting. Attachment 1 is a list of attendees. Attachment 2 is the meeting agenda. As noted on the agenda, the topics included (1) options for streamlining the CoC amendment process, (2) NEI's proposal for standard technical specifications (STS) for spent fuel storage casks, and (3) schedules for developing guidance for implementing the revised 10 CFR 72.48 regulation.

Concerning the first topic, it was agreed that a number of actions need to be pursued to enhance the current process for review and approval of amendments in the near term. These actions include vendors providing high quality submittals that clearly identify departures from the standard review plan, the staff issuing "smart" CoCs with built-in flexibility, the staff conducting efficient and effective reviews of applications, the development and adoption of streamlined STS, and the effective and consistent implementation of 10 CFR 72.48. Talking points for each of these topics are contained in Attachment 3. For the long term, both the Nuclear Regulatory Commission (NRC) and NEI agreed to discuss options for amending CoCs without rulemaking but with public participation. These options would include but would not be limited to the models used in 10 CFR Parts 50, 52, and 76, and "no significant hazards determinations." Talking points for the no significant hazards approach are in Attachment 4. These discussions will require input from legal staffs to address regulatory and legislative issues.

Talking points for the second topic, STS, are found in Attachment 5. Concerning the second topic, agreement in principle was reached on the format and content of a significant portion of the proposed STS. This included the applicability of the STS to CoC and general license holders, Section 3.0 content, the opinion that bases need not be included in the technical specifications (TS) but may be included in the safety analysis report (SAR), and whether a

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number of TS which are also covered by existing regulations may be additional candidates for relocation into the SAR. For STS issues still under evaluation, NRC requested additional clarification. NRC staff proposed that certain fuel specifications be removed from the STS based on adequate justification and information being added to the SAR. Viewgraphs for the discussion are in Attachment 6. NEI agreed to consider the proposal and to provide supplementary information on a number of additional programmatic descriptions it believed could be included in the SAR instead of in the STS. One program identified by NEI for possible relocation, loading and unloading, was discussed in detail. A draft generic program description is included as Attachment 7. NEI agreed to provide NRC with a list of STS items that it proposes be removed from the TS because they are already required by other existing regulations. NRC staff recommended continued interactions with NEI to resolve STS content issues and requested that NEI submit a revised STS package by Fall 2000.

Concerning the third topic, NRC and NEI discussed planned actions to support effective implementation of the revision to 10 CFR 72.48. NEI discussed its progress in developing an appendix to NEI 96-07 (Attachment 8) as specific guidance for 10 CFR 72.48. Viewgraphs used by NEI are included as Attachment 9. NRC discussed plans to issue a number of regulatory guides (RGs) addressing SAR updating, inspection procedures for reviewing 10 CFR 72.48 evaluations, and a RG endorsing the appendix to NEI 96-07. NRC talking points are included as Attachment 10. Workshops and training will be conducted for industry and NRC inspection staff. NRC and NEI schedules currently support a final NRC RG on 10 CFR 72.48 to be effective on April 5, 2001, the date that the 10 CFR 72.48 regulation becomes effective; however, close coordination will be needed to ensure that the date does not slip.

No proprietary information was disseminated or presented at this meeting. No regulatory decisions were requested or made.

Please contact me if you wish to further discuss these issues.

Attachments:

1. Attendance List
2. Agenda
3. Talking Points for Streamlining Certificate Amendments
4. No Significant Hazards Considerations
5. Standard Technical Specifications Issues
6. STS Fuel Specifications
7. Sample Unloading Program Description
8. NEI 96-07
9. NEI Support for Implementing 10 CFR 72.48
10. NRC Support for Implementing 10 CFR 72.48

Attachment 1

Attendance List

**NRC/NEI MEETING
FEBRUARY 8-9, 2000
ATTENDEES**

NAME	ORGANIZATION	TELEPHONE
Randy Hall	NRC/NMSS/SFPO	301-415-1336
Patricia Eng	NRC/NMSS/SFPO	301-415-8577
Eric Leeds	NRC/NMSS/SFPO	301-415-8540
Phil Brochman	NRC/NMSS/SFPO	301-415-8592
Chet Poslusny	NRC/NMSS/SFPO	301-415-1341
Tim Kobetz	NRC/NMSS/SFPO	301-415-8538
Sheena Whaley	NRC/NMSS/SFPO	301-415-1911
Marissa Bailey	NRC/NMSS/SFPO	301-415-8531
Susan Shankman	NRC/NMSS/SFPO	301-415-8500
Lynnette Hendricks	NEI	202-739-8109
Alan Nelson	NEI	202-739-8110
Bryan Ford	Entergy/Millstone 1	860-434-4311
Chris Kudla	NU/Millstone 1	860-437-5842
Phil Flenner	Consumers Energy/DFS	616-764-2544
Dave Waters	Consumers Energy/DFS/BRP	231-547-8316
John Broschak	Consumers Energy/DFS	616-764-2650
Glenn Michael	Arizona Public Service Co.	623-393-5750
George Zinke	Maine Yankee/Entergy	207-882-5824
Max DeLong	Private Fuel Storage/NSP	612-330-5850
Ed Davis	NAC	770-447-1144
Jerry Phillabaum	PECO Energy	610-640-6785
Rick Moss	NYPA	315-349-6793
Guy Davant	Entergy	601-368-5756
Marlin Stoltz	Southern	205-992-5201
Brian Gutherman	Holtec International	856-797-0900
Ken Ainger	ComEd	630-663-7350
Dan Stenger	Hopkins & Sutter	202-835-8185
Mike Mason	Transnuclear, Inc.	914-347-2345

NAME	ORGANIZATION	TELEPHONE
Jerry Delezenski	Rancho Seco	916-732-4914
Bob Jones	Rancho Seco	916-732-4843
Keith Waldrop	Duke Power	704-382-7999
Glenn Adams	Wisconsin Electric	414-221-4691
Tom Szymanski	VA Power	804-273-3065
Ed Turko	VA Power	804-273-3018
Brain Mann	Excel Services	804-273-3424
Donald R. Hoffman	Excel/TSTF	301-984-4400
Brian Wakeman	VA Power	804-273-2250
Mike Callahan	GSI	202-544-4522
Bill Lee	NAC	770-447-1144
Tom Thompson	NAC	770-447-1144
Rita Bowser	BNFL	703-460-2009
Bob Quinn	BNFL	831-430-5220
U. B. Chopra	TN West	510-744-6053
Bill Henries	Main Yankee	207-882-4510
Joe McCumber	Duke Energy /Yankee	978-568-2092

Attachment 2

Agenda

**NRC/NEI Meeting on Spent Fuel Storage Licensing Issues
February 8-9, 2000
Williamsburg, VA**

February 8

- | | |
|-------------------------------|---|
| 8:30 a.m. -8:45 a.m. | Introductions and Discussion of Goals of Meeting (NRC/NEI) |
| 8:45a.m. -10:45 a.m. | Streamlining the Amendment Process-Roundtable
Improvement of Existing Process/Tools (NRC/NEI)
New Ideas/Process (NRC/NEI/Industry)
Identification of Issues for Future Meetings
Schedule for Future Meetings and Other Actions |
| 10:45 a.m. -11:00 a.m. | <i>Break</i> |
| 11:00 a.m. -12:00 noon | Standard Technical Specifications
Summary of Issues from January Meeting (NRC/NEI) |
| 12:00 noon- 1:00 p.m. | <i>Lunch</i> |
| 1:00 p.m. - 3:00 p.m. | Standard Technical Specifications (cont.)
Clarification of Issues of Interest |
| 3:00 p.m.- 3:20 p.m. | <i>Break</i> |
| 3:20 p.m.- 5:00 p.m. | Standard Technical Specifications (cont.)
Issue Discussion
Identification of Issues for Future Meetings
Schedule for Future Meetings and Other Actions |

**NRC/NEI Meeting on Spent Fuel Storage Licensing Issues
February 8-9, 2000
Williamsburg, VA**

February 9

- | | |
|--------------------------------|---|
| 8:30 a.m.-9:00 a.m. | Recap of Previous Day- Revisit Issues as Necessary |
| 9:00 a.m.-11:45 a.m. | 10 CFR 72.48 Implementation
NRC Schedule for Issuing 72.48 Guidance
NEI Guidance Development Milestones and Schedule
Open Discussion on 72.48 Guidance |
| 11:45 a.m. - 12:00 noon | Wrap Up Discussions |

Attachment 3
Talking Points for Streamlining
Certificate Amendments

**AMENDMENTS TO CERTIFICATES OF COMPLIANCE (CoCs)
STREAMLINING THE APPROVAL PROCESS**

→WHY AMEND?

NEED TO CHANGE CoC, TECHNICAL SPECIFICATION(S) (TS), FAIL10 CFR 72.48 TEST

→HOW?

SUBMIT REQUEST FOR AMENDMENT, SAFETY ANALYSIS REPORT (SAR) REVISIONS, TECHNICAL JUSTIFICATION, TS OR CoC REVISIONS

→HOW LONG?

**CURRENT STAFF REVIEW-MONTHS DEPENDING ON COMPLEXITY AND QUALITY OF SUBMITTAL
RULEMAKING: -DIRECT FINAL RULE TAKES 9-10 MONTHS
-PROPOSED AND FINAL RULE TAKE 12 MONTHS**

→PROBLEM:

CURRENT TS, 72.48, AND CoC CONTENTS RESULT IN A LARGE NUMBER OF AMENDMENTS BEING GENERATED AND PLANNED

→SOLUTIONS:

**NEAR TERM: IMPROVE CURRENT PROCESS AND TOOLS
LONG TERM: CHANGE REGULATORY AND LEGAL PROCESS**

NEAR TERM: IMPROVE CURRENT PROCESS AND TOOLS

→SMART SUBMITTAL

**HAS STAND-ALONE QUALITY-REQUIRES MINIMAL STAFF QUESTIONS
CONSIDERS REGULATORY HISTORY (APPROVALS/DISAPPROVALS) FOR ALL CASK DESIGNS
CONSIDERS OPERATIONAL EXPERIENCE, NEW MATERIALS AND TECHNOLOGIES**

→SMART CoC

**HAS EVOLVED SINCE FIRST CASK APPROVAL
MAXIMIZES FLEXIBILITY FOR VENDOR, FABRICATOR, AND USER
INCLUDES ANALYSES THAT BOUND AS MANY PARAMETERS AS PRACTICAL
ANTICIPATES FUTURE NEEDS**

→MORE EFFICIENT REVIEWS BASED ON IMPROVED REVIEW GUIDANCE

→STREAMLINED TS

→EFFECTIVE IMPLEMENTATION OF REVISED 10 CFR 72.48

LONG TERM: CHANGE REGULATORY AND LEGAL PROCESS

→OBJECTIVES:

- 1. MAINTAIN LEVEL OF SAFETY IN DESIGN AND OPERATIONS**
- 2. ENSURE PUBLIC PARTICIPATION IN PROCESS**
- 3. REDUCE UNNECESSARY REGULATORY BURDEN**

→OPEN DISCUSSIONS ON NEW OR MODIFIED PROCESS

Attachment 4
No Significant Hazards
Considerations

NO SIGNIFICANT HAZARDS (NSH) CONSIDERATIONS (PART 50)

DEFINITION OF NSH IN 10 CRF 50.92(c)- OPERATION OF FACILITY IN ACCORDANCE WITH AN AMENDMENT WOULD NOT:

- 1. INVOLVE A SIGNIFICANT INCREASE IN THE PROBABILITY OR CONSEQUENCES OF AN ACCIDENT PREVIOUSLY EVALUATED;**
- 2. CREATE THE POSSIBILITY OF A NEW OR DIFFERENT KIND OF ACCIDENT FROM ANY ACCIDENT PREVIOUSLY EVALUATED; OR**
- 3. INVOLVE A SIGNIFICANT REDUCTION IN A MARGIN OF SAFETY.**

10 CFR 50.91(a) DESCRIBES PROCESS FOR NOTICING AMENDMENTS FOR PUBLIC COMMENT

- 1. LICENSEE PROVIDES AMENDMENT PACKAGE TO COMMISSION WITH ANALYSIS TO SUPPORT NSH RE ITEMS 1,2,3 ABOVE**
- 2. NRC PUBLISHES IN FEDERAL REGISTER NOTE OF PROPOSED ACTION CONTAINING:**

PROPOSED DETERMINATION THAT NSH CONSIDERATION IS INVOLVED WITH AMENDMENT

BRIEF DESCRIPTION OF AMENDMENT

SOLICITATION OF PUBLIC COMMENTS AND OPPORTUNITY FOR HEARING ON PROPOSED DETERMINATION FOR 30 DAYS,

NO SIGNIFICANT HAZARDS (NSH) CONSIDERATIONS (PART 50)

3. AMENDMENT IS ISSUED AFTER 30 DAY NOTICING PERIOD ENDS

4. IF HEARING IS REQUESTED, NRC MUST MAKE FINAL DETERMINATION ON NSH AND ISSUE TO PUBLIC. NOTE THAT AMENDMENT MAY BECOME EFFECTIVE EVEN IF HEARING IS REQUESTED.

REGULATIONS PERMIT ISSUANCE OF EMERGENCY AMENDMENTS WITH DIFFERENT PUBLIC NOTICING REQUIREMENTS.

AMENDMENTS WITH SH CONSIDERATION WILL BE NOTICED PRIOR TO BEING APPROVED WITH 30 DAY COMMENT PERIOD AND OPPORTUNITY FOR HEARING.

OTHER REFERENCES:

FEDERAL REGISTER VOL 48, NO 67, APRIL 6, 1983 PAGE 14864

FEDERAL REGISTER VOLUME 51, NO 44 MARCH 6, 1986 PAGE 7744

Attachment 5
Standard Technical Specifications
Issues

STANDARD TECHNICAL SPECIFICATIONS

Issues from January Standard Technical Specifications Meeting

Proposed STS Format

Applicability of STS Only to CoC and General License Holders

Section 3.0 Content-LCO Applicability

Bases Need Not be Included in TS

TS Covered by Existing Regulations May be Candidates for Relocation

Design Features and Site Specific Parameters May be Candidates for Relocation

Issues Where Staff and NEI Need to Further Interact to Support Review and Approval

Section 2.0 Fuel Specifications

Section 3.1 Cask Storage Integrity

Generic Application of Programmatic Descriptions in Lieu of TS Items

STANDARD TECHNICAL SPECIFICATIONS

- 1. Use of program descriptions in non-TS documents (SAR, procedures, et al.)**
 - Examples-How Would They Work**
 - Controls**
 - Change Process**
 - NRC Oversight, Enforcement**
 - Roadmap from Current TS Template to Proposed STS and non-TS Documents**
- 2. "Cascading Frequencies"**
- 3. Retrievability-Definition for Storage Versus Dual Purpose Casks**
- 4. NRC Comments on 10 CFR 72.13**
- 5. Ways to Deal With Fuel Specifications in STS**
- 6. Storage Integrity Concept**
- 7. Loading and Unloading Specifications**
 - Move to Administrative Procedures**
 - Example of Administrative Controls.**
- 8. Bases for TS Moved to Administrative Controls**
- 9. List of TS Covered by Existing Regulations.**
- 10. Feedback on Staff Fundamental Safety Criteria for Including Items in TS.**
- 11. Examples of Existing Specifications Creating Maintenance and Operational Difficulties.**

Attachment 6
STS Fuel Specifications

SPENT FUEL STORAGE CASK TECHNICAL SPECIFICATIONS



**Eric J. Leeds, Section Chief
Spent Fuel Technical Review Section,
Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards**

INTRODUCTION

ISSUE: Unnecessary Part 72 amendment requests to add fuel types.

- Applicant and users not identifying full range of needed fuel types.
- Failure to broaden range of contents parameters.
- RESULT: Unnecessary burden for both the NRC and industry.

PROPOSAL

- Allow fuel types to be added using 72.48 process.
- Fuel types to be added using 72.48 process must be bounded by original analysis.

TECHNICAL SPECIFICATION PROPOSAL

ALLOWABLE CONTENTS WILL BE CONTROLLED BY:

- Minimum set of fuel parameters in Section 2.
- Administrative control program in Section 5.

Minimum TS Parameters For Criticality Control

- Maximum enrichment
- Maximum uranium content
- Fuel assembly type and array size

Other Parameters Important To Criticality Safety

- Pellet or rod diameter
- Assembly cross section or pitch
- Number of rods

Applicant will justify in SAR not including other parameters, if used in the analysis, such as:

- Cladding thickness
- Instrument/guide tube thickness
- Active fuel length
- Hardware parameters

Certificate Design Features Will Continue to Include Cask Parameters Important to Criticality Safety Such As:

- **Minimum poison content**
- **Minimum basket cell spacing**

Administrative Controls Program

- **Maximum calculated keff**
- **Analyses shall be consistent with the methodology and technical basis described in the SAR and shall be based on fresh fuel isotopics (if used in SAR).**
- **A program shall be in place to ensure that the criticality safety analyses are documented and controlled.**

Applicant's Responsibilities

SAR to Include:

- Other fuel assembly parameters used in analysis
- Sensitivity study to demonstrate negligible impact of minor parameter variations.

POTENTIAL PROBLEMS

- Access/control of computer models and criticality safety program control.
- Potential inconsistency with Part 71 CoC which may contain more fuel specifications.

POTENTIAL PROBLEMS (Con't)

- Applicant not identifying in original application the range of fuel types that could be stored , thus not being able to use 72.48 process anyways (e.g., fuel with higher enrichment).

SFPO EXPECTATIONS OF VENDORS

- **PROVIDE A MORE GENERAL ANALYSIS TO BOUND MANY FUEL TYPES INSTEAD OF A FEW SPECIFIC FUEL TYPES**
- **PROVIDE SENSITIVITY STUDY TO DEMONSTRATE LOW IMPORTANCE OF SOME PARAMETERS SO THAT ONLY A FEW PARAMETERS ARE REQUIRED IN TS**
- **BE FORWARD LOOKING**

Other Fuel Parameters That Do Not Impact Criticality Safety

Minimum parameters expected in TS:

- Minimum cool time
- Maximum burnup
- Maximum weight of contents
- Maximum decay heat for cask
- Minimum enrichment

Attachment 7
Sample Unloading Program
Description

SAMPLE
USA POWER COMPANY
DRY SPENT FUEL STORAGE
CASK LOADING, UNLOADING, AND PREPARATION PROGRAM
OP-XXX
REVISION 0

1.0 PURPOSE

The purpose of this procedure is to provide the detailed operating instructions and acceptance criteria required to implement the CASK Loading, Unloading, and Preparation Program required by Technical Specification 5.1.2 located in Appendix A to [Vendor Name] 10 CFR 72 Certificate of Compliance (CoC) No. [XXXX].

2.0 BACKGROUND

Title 10 of the Code of Federal Regulations, Part 72, Section 72.210 grants a general license to 10 CFR Part 50 license holders allowing them to construct and operate an Independent Spent Fuel Storage Installation (ISFSI) on the reactor site, subject to certain requirements. One of those requirements is that the general licensee must use an NRC-approved storage CASK system for storage of the spent nuclear fuel. The NRC approves CASK designs through the issuance of a CoC to the CASK vendor and adding the CASK model to the list of approved CASK designs in 10 CFR 72.214.

The general licensee is required to comply with all provisions of the CoC and well as ensure that the ISFSI site is bounded by the CASK design bases as described in the CASK Safety Analysis Report (SAR). USA Power Company has chosen the [vendor name] CASK system for use under a general license at the [Plant Name] nuclear power plant site. [Vendor name] Part 72 CoC No. [XXXX] includes Appendix A which is the Technical Specifications (TS). Section 5.0 of the TS is entitled Administrative Controls and Programs. Each licensee is required to have a written procedure to implement the requirements of each program described in Section 5.0 of the TS. This procedure implements Program 5.1.2, CASK Loading, Unloading, and Preparation Program.

Specifically, this procedure provides the necessary instructions and numerical limits to ensure the storage CASK is loaded with fuel and prepared for storage at the ISFSI in full accord with the CoC and the design bases for the CASK as described in the CASK SAR. This procedure also provides the instructions and limits necessary to ensure safe, timely unloading of the CASK in the unlikely event this becomes necessary. Section 5.1.2 of the TS lists the minimum set of elements which must be included in this procedure:

- a. Drying;
- b. Inerting;
- c. Leak testing;
- d. Dose rates;
- e. Contamination;
- f. [Fuel temperature; and]
- g. [Dissolved boron concentration]

This procedure also includes required actions and completion times for those situations where the storage CASK fails to meet the requirements for CASK loading, unloading, or preparation.

3.0 DEFINITIONS

- CASK** A CASK is an integral fuel storage unit, including any fuel container, canister, transfer cask, storage device overpack or impact limiters approved for storage of spent nuclear fuel under a Certificate of Compliance.
- [Canister The vessel containing the stored fuel and providing the confinement boundary. The canister is one component of the CASK system.]
- SAR** The SAR is the Safety Analysis Report referenced in the Certificate of Compliance issued for the CASK.

4.0 REFERENCES

- 4.0.1 Title 10, Code of Federal Regulations, Part 72.
- 4.0.2 The [Vendor Name] Safety Analysis Report, Revision X.
- 4.0.3 [Vendor Name] Part 72 Certificate of Compliance 72-XXXX, dated MM/DD/YY.

5.0 PROCEDURE

5.1 Prerequisites for CASK Loading

- 5.1.1 The CASK system, including necessary ancillary equipment, shall be received, inspected and accepted for use at the plant site under the applicable CoC.
- 5.1.2 All required training and pre-operational testing shall have been successfully completed.
- 5.1.3 The CASK serial number shall have been verified and the CASK [and canister] prepared, lifted and lowered into the appropriate location in the spent fuel pool in accordance with applicable plant procedures.
- 5.1.4 [The boron concentration of the spent fuel pool water shall have been confirmed by two independent samples to be \geq [3000 ppm] prior to loading fuel into the canister, and once every [2 hours] thereafter until the loaded canister is removed from the spent fuel pool.]
- 5.1.5 Fuel assemblies chosen for loading into the CASK shall have been pre-selected and verified as authorized for loading into the CASK based on the fuel specifications provided in the CASK SAR. Verification of fuel assemblies with

the corresponding CASK serial number and specific fuel storage cell location shall be documented in writing in accordance with applicable procedures.

5.2 Prerequisites for CASK Unloading

5.2.1 The CASK shall be transported to the [site-designated area] and the [canister] shall be sampled to determine the integrity of the contained fuel prior to implementing the unloading operations portion of this procedure.

5.3 Fuel Loading Operations

5.3.1 Load the selected fuel assemblies into their assigned fuel cell storage locations. Verify by visual observation and document on [Data Sheet 1] that the correct serial number fuel assembly has been placed in each storage cell location.

5.3.2 Place the [canister] lid on top of the fuel basket.

CAUTION: Lifting of a loaded CASK, flooded with water is the heaviest lift experienced during CASK loading and preparation operations. Do not exceed crane hook lift weight restrictions.

5.3.3 Lift the loaded CASK out of the spent fuel pool in accordance with applicable plant heavy load handling procedures.

5.3.4 Decontaminate the CASK in accordance with applicable plant procedures and place the CASK in the CASK preparation area.

5.3.5 Install scaffolding and temporary shielding as necessary for performing CASK preparation activities and compliance with the ALARA program.

5.4 CASK Preparation for Storage

5.4.1 Perform [canister] lid welding, hydrostatic testing, and nondestructive examination in accordance with applicable welding, hydrotesting, and special process procedures.

5.4.2 Drain the contained water from the [canister] to the extent practical using the [canister] vent and drain connections. Water drained from the [canister] shall be [returned to the spent fuel pool]. Draining operations must be completed within [10 hours] after removal of the loaded CASK from the spent fuel pool to prevent boiling of the water in the [canister].

5.4.3 IF draining operations are not complete within [10 hours] after removal of the CASK from the spent fuel pool, THEN, re-flood the [canister] and/or cool the water in the canister down to \leq [150 °F]. Draining operations may re-commence

after the cause of the delay has been identified and corrective actions implemented, as necessary.

- 5.4.4 Blow down the remaining water from the [canister] using a suitable [nitrogen] supply until the residual moisture in the [canister] is \leq [0.10%].

NOTE: An external [canister] warming device may be used to assist the vacuum drying process, as necessary.

- 5.4.5 Connect the Vacuum Drying System (VDS) to the [canister] in accordance with applicable procedures and establish a vacuum in the [canister]. Note the time of vacuum drying start.

Time of Vacuum Drying Start: _____ Initials: _____

- 5.4.6 The [canister] vacuum shall be \leq [3 torr] and shall be stable [(+/- 0.25 torr)] for \geq [30 minutes].

- 5.4.7 IF the acceptance criteria of Step 5.4.6 cannot be met within [24 hours] of starting the vacuum drying process, THEN, re-flood the [canister] with [borated] water and determine the cause of the failure. Vacuum drying operations may re-commence after the cause of the failure has been determined and corrective actions, as necessary, have been implemented.

Vacuum Acceptance Criteria Met/Not Met (circle one): Initials: _____ Time: _____

Time of Vacuum Drying Stop: _____ Initials: _____

- 5.4.8 Isolate the [canister] by closing valves [V-1 and V-2] and prepare for helium backfill operations. The [canister] total time under vacuum conditions shall not exceed [48 hours] before the commencement of helium backfill operations.

- 5.4.9 IF the [canister] total time under vacuum conditions exceeds [48 hours] prior to the commencement of helium backfill operations. THEN, re-flood the [canister] with [borated] water and determine the cause of the delay. Draining, vacuum drying, and helium backfill operations may re-commence after the cause of the delay has been determined and corrective actions have been implemented, as necessary.

- 5.4.10 Connect the Helium Backfill System (HBS) to the [canister] vent and drain ports and backfill fill the [canister] with \geq 99.995% pure helium. Note the time.

Commence Helium Backfill Operations: Initials: _____ Time: _____

5.4.11 The [canister] helium backfill pressure shall be \geq [10 psig] and \leq [14 psig] and stable [(+/- 2.0 psig)] for [30 minutes].

5.4.12 IF the acceptance criteria of Step 5.4.11 cannot be met within [48 hrs] after commencing backfill operations, THEN, isolate the [canister] and determine the cause of the failure. An engineering evaluation shall be performed to confirm that the fuel is adequately cooled while the cause and corrective actions are being determined. Helium backfill operations may re-commence when the cause of the failure has been determined and corrective actions implemented, as necessary.

Helium Backfill Acceptance Criteria Met/Not Met (circle one): Initials: _____ Time: _____

Complete Helium Backfill Operations: Initials: _____ Time: _____

5.4.13 Disconnect the HBS system from the [canister] vent and drain ports.

5.4.14 Perform helium leak rate testing of the [canister] confinement boundary welds in accordance with applicable leak rate procedures. The total helium leak rate through [the confinement boundary] shall be \leq [5.6×10^{-6} atm cc/sec (helium)]. Note the time.

Commence Helium Leak Rate Testing: Initials: _____ Time: _____

5.4.15 IF the acceptance criterion of Step 5.4.14 cannot be met within [72 hrs] after commencing leak rate testing, THEN, cease leak rate testing and determine the cause of the failure. Perform an engineering evaluation to ensure the stored fuel is adequately cooled while cause and corrective actions are being determined. Leak rate testing may re-commence upon determination of the cause of the failure and implementation of corrective actions, as necessary.

Location 1 Leak Rate: _____ $\times 10^{-6}$ atm cc/sec (helium)

Location 2 Leak Rate: _____ $\times 10^{-6}$ atm cc/sec (helium)

Location 3 Leak Rate: _____ $\times 10^{-6}$ atm cc/sec (helium)

Total Confinement Boundary Leak Rate: _____ $\times 10^{-6}$ atm cc/sec (helium)

Helium Leakage Acceptance Criteria Met/Not Met (circle one): Initials: _____ Time: _____

Complete Helium Leak Rate Testing: Initials: _____ Time: _____

5.4.16 Measure dose rates on the CASK at the locations shown in Figure 1. Determine the simple average dose rate for the top and side of the CASK.

5.4.17 The average dose rate on the top of the CASK shall be \leq [25 mrem/hr] gamma plus neutron. The average dose rate on the side of the CASK shall be \leq [50 mrem/hr] gamma plus neutron.

5.4.18 Average CASK Top Dose Rate

Dose Rate at Top Location 1: _____ mrem/hr

Dose Rate at Top Location 2: _____ mrem/hr

Dose Rate at Top Location 3: _____ mrem/hr

Dose Rate at Top Location 4: _____ mrem/hr

Average CASK Top Dose Rate: _____ mrem/hr

Top Dose Rate Acceptance Criteria Met/Not Met (circle one): Initials: _____ Time: _____

5.4.19 Average CASK Side Dose Rate

Dose Rate at Side Location 1: _____ mrem/hr

Dose Rate at Side Location 2: _____ mrem/hr

Dose Rate at Side Location 3: _____ mrem/hr

Dose Rate at Side Location 4: _____ mrem/hr

Average CASK Side Dose Rate: _____ mrem/hr

Acceptance Criteria Met/Not Met (circle one): Initials: _____ Time: _____

5.4.20 IF either of the acceptance criteria of Step 5.4.17 are not met, THEN, the CASK shall not be transported to the ISFSI pad. Ensure adequate radiation protection is provided for plant personnel and verify that the correct fuel was loaded into the CASK. Upon verification of correct fuel loading, perform an engineering evaluation to determine whether the dose rate criteria of 10 CFR 20 and 10 CFR 72.104 will be met during storage at the ISFSI prior to transporting the CASK to the ISFSI.

5.4.21 Determine removable contamination levels on the sides and top of the CASK [and accessible portions of the [canister].

5.4.22 The removable contamination on the exterior of the CASK [and accessible portions of the CANISTER] shall be:

≤ [200 dpm] alpha, and

\leq [1000 dpm] beta.

5.4.23 IF the either of the acceptance criteria of Step 5.4.22 are not met, THEN, perform additional decontamination until the acceptance criteria are met.

5.4.24 Transport the CASK to the ISFSI pad in accordance with applicable CASK handling procedures.

5.5 Cask Unloading Operations

Similar instructions, acceptance criteria, and actions for unloading operations (e.g., fuel cooldown requirements).

Attachment 8
NEI 96-07

NEI 96-07, Revision 1 [Final Draft]

Nuclear Energy Institute

**GUIDELINES FOR 10 CFR 50.59
EVALUATIONS**

FINAL DRAFT - January 18, 2000

Nuclear Energy Institute, 1776 I Street N.W., Suite 400, Washington D.C. (202.739.8000)

Attachment 9
NEI Support for Implementing
10 CFR 72.48

NRC/NEI Meeting on Spent Fuel Storage Licensing Issues

10 CFR 72.48
Implementation
Williamsburg, VA
February 9, 2000



10 CFR 72.48 Implementation

- NEI Guidance Development Milestones and Schedule
- Open Discussion on 72.48 Guidance



Schedule - Revised 10 CFR 50.59 Guidance

- Final Draft NEI 96-07 submitted 1/18/00
- ACRS Meeting 2/3/00
- Publish draft RG for public comment 3/2000
- NRC RIC 3/27-29/00
- NEI Workshop Clearwater, FL 4/10-11/00



**Schedule - Revised 10 CFR 50.59
Guidance**

- Forward final RG to Commission
for approval 5/30/00
- Commission approves final RG 6/30/00
- Licensee implementation,
rule effective 90 days
after RG



**10 CFR 50.59/72.48
Application Process**

- The rule changes had two principal objectives, both aimed at restoring much-needed regulatory stability to this extensively used regulation



10 CFR 50.59/72.48 Process

- Establish clear definitions to promote common understanding of the rule's requirements
- Clarify the criteria for determining when changes, tests and experiments require prior NRC approval



10 CFR 50.59/72.48 Process

- The changes approved by the Commission in 1999 made 10 CFR 50.59 more focused and efficient by:
 - Providing greater flexibility to licensees, primarily by allowing changes that have minimal safety impact to be made without prior NRC approval
 - Clarifying the threshold for "screening out" changes that do not require full evaluation under 10 CFR 50.59, primarily by adoption of key definitions



10 CFR 72.48 Process

- In parallel with the rulemaking to amend 10CFR 50.59, the NRC made conforming changes to the analogous provision in 10 CFR Part 72 for control of changes, tests and experiments involving independent fuel storage facilities. The intent of conforming 10 CFR 72.48 to the terms of 10 CFR 50.59 was to provide for consistent implementation of these two analogous regulations. Accordingly, the guidance herein on implementing 10 CFR 50.59 may be applied to support implementation of 10 CFR 72.48.



10 CFR 72.48 Application

- NEI 72.48 Implementation Issue Task Force licensees, vendors, and fabricators
- Review 50.59/72.48 rule, implementation schedules, and applicability to NEI 96-07
- Part 72.48 rule becomes effective 18 months after issuance of the 50.59 rule
- Part 72.48 implementation April 2001 (est)



10 CFR 72.48 Application

- NEI 96-07 Rev 1 "Guidelines for 10CFR50.59 Evaluations" submitted
- 50.59 guidance maybe applied to dry storage as discussed in section 1.4 of NEI 96-07
- SFPO to issue a separate RG addressing application of NEI 96-07 to 72.48



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10 CFR 72.48 Application

- Appendix B of NEI 96-07 will address specific applications for 72.48
- Appendix B will be incorporated as a supplement to NEI 96-07
- NEI ITF will seek SFPO approval of Appendix B
- Schedule for Appendix B completion is separate due to differing rule implementation time frames



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10 CFR 72.48 Application

- NEI/NRC 50.59 Workshop, Clearwater FL, April 10-11, 2000
- NEI 72.48 Implementation Workshop focus - license, vendor, and fabricator applications
- Fall 2000



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**NEI 72.48 ITF NEI 96-07
Recommendations**

- Figure 1 10 CRF 50.59 Process (flowchart) modified for 72.48 process, Figure B.1 (general/site specific applications)
- Section 4.2 Screening, and Section 4.3 Evaluation Process should be cross referenced to appropriate Part 72 regulations



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**NEI 72.48 ITF NEI 96-07
Recommendations**

- Criteria 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.4, 4.3.5, 4.3.6, have applicability toward the 72.48 process
- Criteria 4.3.7 "does the activity result in design basis limit for a fission product barrier being exceeded or altered?" does not apply to dry storage, a new section will need to be developed.
- Criteria 4.3.8 does apply, Part 72 examples should be provided.



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Staff 72.48 Comments NEI 96-07

- NEI 72.48 Implementation ITF reviewed comments relating 72.48
- Agreed to revise NEI 96-07 to include staff comments 1-3
- ITF will evaluate item 4 - numerical factors for "minimal increases" to assure that 10% or a factor of two applies to 72.48



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NEI 72.48 Implementation ITF

- The ITF is scheduled to meet at NEI offices March 1, 2000
- Evaluate
 - Implementation Guidance
 - Screening Criteria
 - Evaluation Process
 - Documentation and Reporting



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Part 71 Changes, Tests, and Experiments

- NRC Rulemaking plan EDO 5/00
- Proposed Rulemaking plan EDO 9/00
- Final Rule EDO ~~12/01~~
TBD



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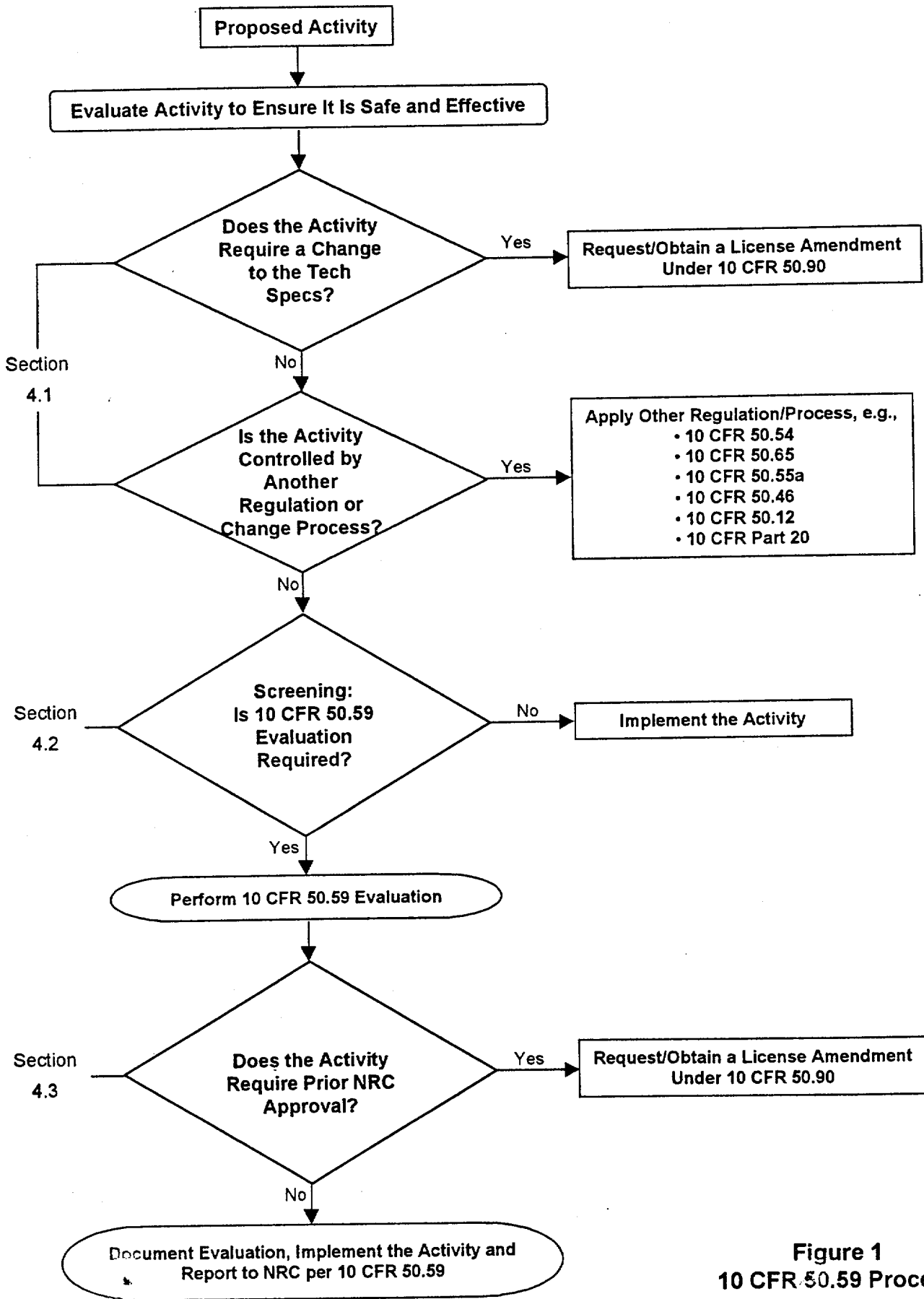


Figure 1
10 CFR 50.59 Process

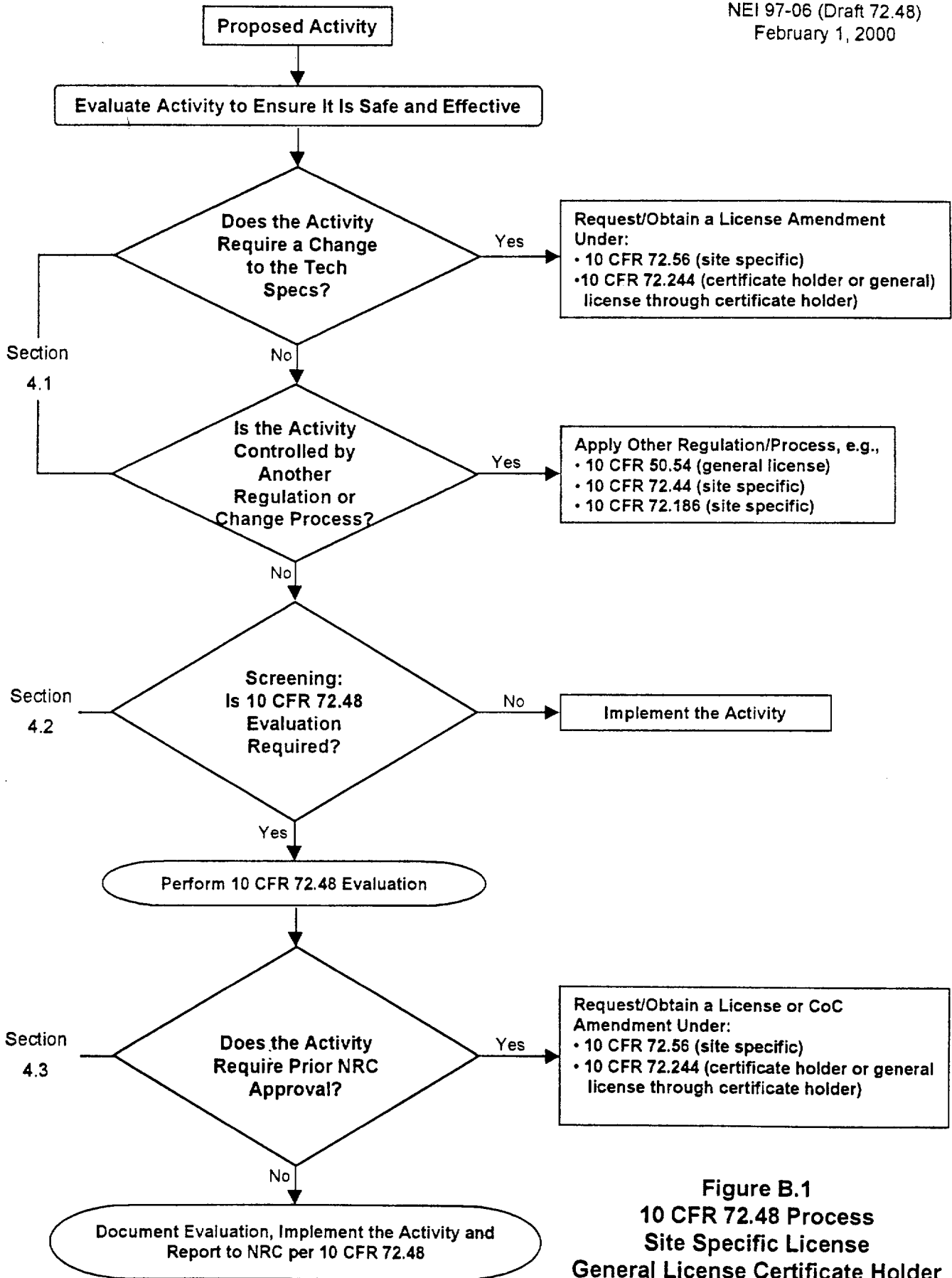


Figure B.1
10 CFR 72.48 Process
Site Specific License
General License Certificate Holder

Attachment 10
NRC Support for Implementing
10 CFR 72.48

10 CFR 72.48 SFPO ACTION ITEMS

→REVISE FIVE EXISTING REGULATORY GUIDES TO REFLECT REVISION TO 10 CFR 72.248 (PERIODIC FSAR UPDATES) AND MISCELLANEOUS ADMINISTRATIVE CHANGES

SCREEN FIVE EXISTING RGS FOR REQUIRED UPDATES AND REVISIONS

ADD FSAR RELATED LANGUAGE TO APPROPRIATE RGS.

COORDINATE CRGR REVIEW

SEEK PUBLIC COMMENTS IF REQUIRED

COORDINATE CRGR REVIEW AND APPROVAL

ISSUE REVISED RGS BY FOURTH QUARTER 2000

→ DEVELOP NEW INSPECTION PROCEDURES

60857: INSPECTING 72.48 EVALUATIONS

SIMILAR TO NRR 37001

GENERAL INFORMATION: ^{WHAT?} "WHAT", NOT "HOW"

PERIODIC SAMPLE (EVERY TWO YEARS)

10 CFR 72.48 SFPO ACTION ITEMS (CONT)

60857 INSPECTING 72.48 EVALUATIONS

**SCHEDULE: ISSUE TO REGIONS FOR COMMENT BY THIRD QUARTER 2000
ISSUE IN FINAL BY FOURTH QUARTER 2000**

PART 9900: INSPECTION GUIDANCER ON 72.48 EVALUATIONS

EMULATE NRRs PPROCEDURE

**SCHEDULE: ISSUE TO REGIONS BY FOURTH QUARTER 2000 FOR COMMENT
ISSUE IN FINAL BY FIRST QUARTER 2001**

→TRAINING: SUPPORT NRR REGIONAL TRAINING WITH 72.48 DIFFERENCES DISCUSSIONS

SCHEDULE: TBD

→ISSUE NEW 72.48 REGULATORY GUIDE

PROVIDE IMPLEMENTATION GUIDANCE ENDORSING NEI 96-07 APPENDIX

ADDRESS TIMELINESS FOR INDEPENDENT REVIEW OF 72.48 EVALUATIONS

SCHEDULE: NOT LATER THAN 04/01

10 CFR 72.48 SFPO ACTION ITEMS (CONT)

OBSERVATIONS:

1. NRR SLIPPAGE IN 50.59 IMPLEMENTATION SCHEDULE HAS BEEN IDENTIFIED

2. 72.48 REGULATORY GUIDANCE CAN NOT SLIP PAST THE 04/01 DATE

3. 72.48 GUIDANCE IN NEI 96-07 APPENDIX NEEDS TO BE ENDORSABLE WITHOUT EXCEPTIONS TO FACILITATE SFPO MEETING THE 04/01 DATE

number of TS which are also covered by existing regulations may be additional candidates for relocation into the SAR. For STS issues still under evaluation, NRC requested additional clarification. NRC staff proposed that certain fuel specifications be removed from the STS based on adequate justification and information being added to the SAR. Viewgraphs for the discussion are in Attachment 6. NEI agreed to consider the proposal and to provide supplementary information on a number of additional programmatic descriptions it believed could be included in the SAR instead of in the STS. One program identified by NEI for possible relocation, loading and unloading, was discussed in detail. A draft generic program description is included as Attachment 7. NEI agreed to provide NRC with a list of STS items that it proposes be removed from the TS because they are already required by other existing regulations. NRC staff recommended continued interactions with NEI to resolve STS content issues and requested that NEI submit a revised STS package by Fall 2000.

Concerning the third topic, NRC and NEI discussed planned actions to support effective implementation of the revision to 10 CFR 72.48. NEI discussed its progress in developing an appendix to NEI 96-07 (Attachment 8) as specific guidance for 10 CFR 72.48. Viewgraphs used by NEI are included as Attachment 9. NRC discussed plans to issue a number of regulatory guides (RGs) addressing SAR updating, inspection procedures for reviewing 10 CFR 72.48 evaluations, and a RG endorsing the appendix to NEI 96-07. NRC talking points are included as Attachment 10. Workshops and training will be conducted for industry and NRC inspection staff. NRC and NEI schedules currently support a final NRC RG on 10 CFR 72.48 to be effective on April 5, 2001, the date that the 10 CFR 72.48 regulation becomes effective; however, close coordination will be needed to ensure that the date does not slip.

No proprietary information was disseminated or presented at this meeting. No regulatory decisions were requested or made.

Please contact me if you wish to further discuss these issues.

Attachments:

1. Attendance List
2. Agenda
3. Talking Points for Streamlining Certificate Amendments
4. No Significant Hazards Considerations
5. Standard Technical Specifications Issues
6. STS Fuel Specifications
7. Sample Unloading Program Description
8. NEI 96-07
9. NEI Support for Implementing 10 CFR 72.48
10. NRC Support for Implementing 10 CFR 72.48

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JK