May 5, 1997

MEMORANDUM TO: William F. Kane, Director
Spent Fuel Project Office, NMSS

FROM: Lawrence E. Kokajko, Senior Project Manager
Spent Fuel Licensing Section
Spent Fuel Project Office, NMSS

SUBJECT: FOURTH MEETING WITH THE U.S. DEPARTMENT OF ENERGY REGARDING SUBMITTAL OF CENTRAL INTERIM STORAGE TOPICAL SAFETY ANALYSIS REPORT

On April 29, 1997, the fourth (and final) pre-application meeting was held between representatives of the U.S. Department of Energy (DOE), its associated contractors, and the U.S. Nuclear Regulatory Commission to discuss a proposed submittal of a non-site-specific topical safety analysis report (TSAR) for a central interim storage facility (CISF). Attachment 1 is an attendance list. Attachment 2 is a copy of the slides presented by DOE. The meeting was noticed on March 26, 1997.

The DOE presentation included an overview of the TSAR objectives and chapter-by-chapter discussion of the CISF TSAR submittal (see Attachment 2 for specific information). Subsequent to the meeting, on May 1, 1997, the DOE submitted its CISF TSAR.

The staff noted some concerns regarding several items. Specifically, DOE has assumed that the CISF and the monitored retrievable storage (MRS) facility, as defined in 10 CFR Part 72, are identical for licensing purposes and license term (40 years). The staff noted that this was under review. The staff cautioned DOE about the interface requirements (design parameters) and licensing actions between the cask vendors and the DOE as the licensee of the proposed CISF. All parties agreed that recent legislative initiatives may impact the CISF program. The staff acknowledged the approach and DOE's effort. The staff looks forward to the CISF TSAR submittal.

Members of the public attended this meeting. No proprietary information was disseminated or discussed at this meeting. No regulatory decisions were requested or made.

Docket 72-21

Attachments: 1. Attendance List
2. DOE Slides

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ATTENDANCE LIST

Meeting Between U.S. Department of Energy and the
U.S. Nuclear Regulatory Commission Staff on the
Submittal of a TSAR for CISF*

April 29, 1997

Name	Affiliation
Lawrence E. Kokajko	NRC/SFPO
Eric J. Leeds	NRC/SFPO
Fritz Sturz	NRC/SFPO
Mark Delligatti	NRC/SFPO
Mike Raddatz	NRC/SFPO
David Tang	NRC/SFPO
Don Carlson	NRC/SFPO
Steve Hogsett	NRC/SFPO
Alan Howe	NRC/SFPO
Elaine Keegan	NRC/SFPO
Elise Heumann	NRC/SFPO
Howard Larson	NRC/ACNW
Dan Kane	DOE
Fred Rodgers	DOE/RC
Ram Murtay	DOE/RW-3
Christopher A. Kouts	DOE/RW-45
Prasanna Kumar	DOE/RW-45
Jafar Imam	DOE/RW-45
Jerry Parker	DOE/RW-45
Joe Stringer	Duke Engineering
Eileen Supko	Energy Resources International
Sidney Crawford	SAIC
Carl Di Bella	NWTRB
Donald Chung	NLLS LIS

*Note: Due to the large number of people attending this meeting, it is not known if everyone signed the attendance list.

ATTACHMENT 1

U.S. Department of Energy
Office of Civilian Radioactive Waste Management

NRC/DOE Meeting #4
Centralized Interim Storage Facility TSAR

April 29, 1997

ATTACHMENT 2

Agenda

- **Introduction** — **C. Kouts**
- **CISF & TSAR Overview** — **D. Kane**

Introduction

- **Proposed legislation continues to mandate aggressive schedules regarding interim storage for NRC/DOE**
- **Administration continues to support generic, non-specific work that can facilitate early waste acceptance**
- **CISF & DTS TSARs will help the implementation process and are consistent with Administration direction**

Objectives Behind CISF TSAR

- **Facilitate timely design and licensing of CISF once site is designated**
  - **Move interim storage design efforts off critical path of license application development**
    - » **Identify and resolve major design & regulatory issues prior to submittal of a license application**
    - » **Develop facility design and operating plans that can be referenced in a license application**
  - **Provide cask vendors with facility design and operating description**

CISF TSAR

- **DOE submitted letter of intent to submit TSAR to the SFPO on June 4, 1996.**
- **Four pre-submittal consultations held with NRC Staff**
  - **August 20, 1996: Non-site-specific approach; scope of TSAR, generic environmental parameters**
  - **November 20, 1996: Design approach; criteria; design basis events; nuclear analyses**

CISF TSAR (cont'd)

- February 19, 1997: Recovery from DBEs; occupational radiation exposures; conduct of operations
- April 29, 1997: Review content of TSAR and provide suggested evaluation findings

- CISF TSAR will be submitted on May 1, 1997
  - Transmittal letter will request SER by end of FY 1998

CISF & TSAR Overview

Dan Kane
Licensing Manager

CISF Design Approach

- Developed under approved QA program
- Facility based on expectation that NRC-approved dual-purpose technologies will be available
- "Clean" facility with no routine bare SNF handling
  - DTS can provide additional CISF flexibility & capability
- Non-site specific design that uses conservative environmental & design factors
  - 360 mph tornado
  - 0.75 g seismic loading

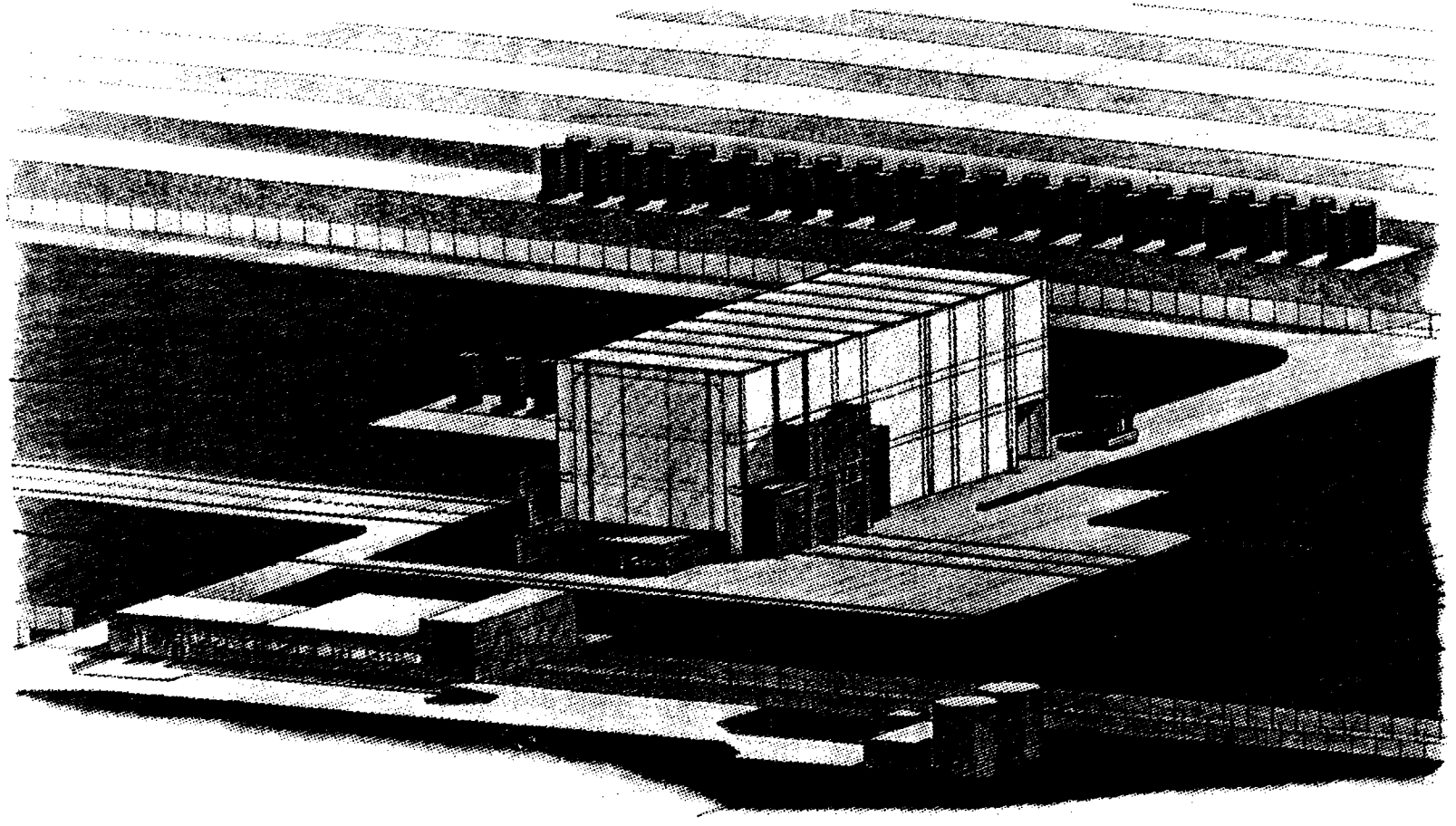
Cask Vendor Interface

- **Considered 5 vendor technologies to develop bounding CISF equipment design parameters**
  - **NAC STC**
  - **Holtec HISTAR-100**
  - **Sierra Nuclear TranStor**
  - **VECTRA MP-187 & NUHOMS**
  - **Westinghouse MPC System (large & small)**

Cask Vendor Interface (Cont'd)

- CISF design uses vendor supplied equipment
- CISF provides flexibility to accommodate future systems
- TSAR imposes additional design criteria on vendors that must be resolved in CISF license application
  - Site-specific design revision or cask vendor reanalysis/redesign

CISF



CISF TSAR

- **Format & content**
  - **Draft NUREG-1567**
  - **Regulatory Guide 3.48**
- **Similar to previous industry TSAR initiatives**
- **TSAR seeks NRC review & specific approvals for each chapter**
  - **Evaluation findings of NUREG-1567 generally applicable**

Chapter 1 - Introduction and General Description

- **TSAR**
  - Purpose / scope of facility
  - Capacity - 40,000 MTU
  - 40 year license
  - High level operations description
  - Materials to be stored (reference vendor SARs)
  - Purpose of submittal (SER)

Chapter 1 - Introduction and General Description (cont)

- **Findings**
  - **Request in concert with guidance contained in Section A.1.4.2 of Draft NUREG-1567**
  - **Commitment to use only NRC approved dual-purpose cask systems for fuels as specified in vendor analyses is acceptable**
  - **While the submittal is not a license application, the applicant has provided adequate information to support a 40-year service life with only routine maintenance**

Chapter 2 - Site Characteristics

- **TSAR**
  - **Generic site meteorology & seismology**
- **Findings**
  - **Generic site characteristics are appropriate**
  - **NRC guidance documents and industry codes & standards used are appropriate (e.g., design tornado)**

Chapter 3 - Principal Design Criteria

- **TSAR**
  - Classification of SSCs
  - Design criteria for QA 1 and other SSCs
  - Design criteria imposed on cask vendors
- **Findings**
  - SSCs important to safety adequately identified
  - QA classification system acceptable
  - CISF principal design criteria are acceptable

Chapter 4 - Operating Systems

- **TSAR**
  - Facility layout and general arrangements
  - Spent fuel handling systems
  - Other systems
  - Fire hazards analysis
  - Security systems
- **Findings**
  - Evaluation findings of Draft NUREG-1567

Chapter 5 - Operating Procedures

- **TSAR**
  - Normal operating procedures
  - Detailed flow sheets
  - Description of preliminary hazards assessment to identify events for safety analysis
- **Findings**
  - Evaluation findings of Draft NUREG-1567 applicable
  - The TSAR presents a systematic approach for identifying off-normal & accident events that is comprehensive, and provides reasonable assurance that all events are identified and appropriately considered

Chapter 6 - Waste Confinement & Management

- **TSAR**
  - On-site waste sources (gaseous, liquid, solid)
  - Transfer facility HVAC system (ALARA)
  - Waste collection & treatment
  - Radiological impact of normal operations well below 10 CFR 72.104
- **Findings**
  - Evaluation findings of Draft NUREG-1567 applicable

Chapter 7 - Installation Design & Structural Evaluation

- **TSAR**
  - **Design, design criteria & analyses for transfer facility**
    - » **Reinforced concrete structures (QA 1)**
    - » **Transfer facility steel structures (QA 1)**
  - **Storage pads**
  - **Cask systems (Vendor SARs)**
  - **Other SSCs not important to safety**
- **Findings**
  - **Evaluation findings of Draft NUREG-1567 applicable**

Chapter 8 - Thermal Evaluation

- **TSAR**
  - **Facility design and operation ensures compliance with vendor cask thermal analyses - no degradation of thermal safety function**
- **Findings**
  - **If the thermal design & licensing criteria of NRC certified cask systems bound the generic site characteristics & operational limitations described in Chapter 3, then additional site-specific thermal analyses are not necessary**

Chapter 8 - Thermal Evaluation (Cont'd)

- **CISF design, operation, & administrative features are sufficient to ensure cask contents & SSCs ITS remain within their approved operating temperature ranges**

Chapter 9 - Radiation Protection Evaluation

- **TSAR**
  - ALARA considerations
  - Radiation protection design features
  - Radiation protection program
  - Dose assessments
- **Findings**
  - Evaluation findings of Draft NUREG-1567 applicable

Chapter 10 - Criticality Evaluation

- **TSAR**
  - Facility design and operation ensures compliance with vendor cask criticality analyses - no degradation of criticality safety function
- **Findings**
  - The CISF design, operations, administrative features & use of certified cask systems ensure that
    - » Materials will remain subcritical
    - » Cask criticality control safety functions will not degrade such that site-specific analyses are not necessary
    - » Certified cask system design & licensing bases are sufficient to address cask array issues without additional analyses

Chapter 11 - Confinement Evaluation

- **TSAR**
  - **Facility design and operation ensures vendor cask confinement features are adequately protected - no loss of confinement**
- **Findings**
  - **The proposed CISF design, operations, and administrative features are sufficient to preclude degradation of the vendor cask confinement features such that additional site-specific analyses are not necessary**

Chapter 12 - Accident Analyses

- **TSAR**
  - 9 off-normal and 13 accident events
  - Applicable to CISF and/or vendor systems
  - Loss of confinement is bounding (non-mechanistic)
- **Findings**
  - Evaluation findings of Draft NUREG-1567 applicable

Chapter 13 - Conduct of Operations

- **TSAR**
  - DOE & operating contractor organizational structures
  - Preoperational testing program
  - Systematic training program
  - Normal operations (procedures, record keeping, employee concerns program, modifications & 72.48)
  - Emergency planning

Chapter 13 - Conduct of Operations (Cont'd)

- **Findings**
  - **Evaluation findings of Draft NUREG-1567 applicable**
  - **Commitment to the proposed organizations and plans contained in the TSAR in a site-specific license application will satisfy regulatory requirements**

Chapter 14 - Technical Specifications

- **TSAR**
  - **Vendor/design-specific technical specifications**
  - **Technical specifications based upon CISF design and operations**
- **Findings**
  - **Evaluation findings of Draft NUREG-1567 applicable**

Chapter 15 - Quality Assurance

- **TSAR**
  - **References OCRWM QA Program**
  - **CISF QA Program will implement QARD requirements**
- **Findings**
  - **The OCRWM QA Program as defined in the QARD (DOE/RW-0333P) complies with the requirements of 10 CFR 72, Subpart G.**

Chapter 16 - Decommissioning

- **TSAR**
  - Overview of decommissioning process
  - Decommissioning plan & cost estimate not developed
- **Findings**
  - The CISF design and use of dual-purpose cask systems
    - » minimizes radioactive waste & contaminated equipment
    - » facilitates removal of waste for decommissioning
    - » maintains occupational & public exposures during decommissioning ALARA
  - The TSAR adequately addresses decommissioning record keeping