



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

December 1, 2010

MEMORANDUM TO:           ACRS Members

FROM:                       Christopher L. Brown, Senior Staff Engineer */RA/*  
Reactor Safety Branch A, ACRS

SUBJECT:                   CERTIFICATION OF THE MINUTES OF THE ACRS RADIATION  
PROTECTION & NUCLEAR MATERIALS SUBCOMMITTEE  
MEETING, OCTOBER 22, 2010, ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on 11/19/2010 as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc w/o Attachment:   E. Hackett  
                                  C. Santos



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

MEMORANDUM TO: Christopher L. Brown, Senior Staff Engineer  
Reactor Safety Branch A, ACRS

FROM: Michael T. Ryan, Chairman  
Radiation Protection & Nuclear Materials Subcommittee

SUBJECT: CERTIFICATION OF MINUTES OF THE ACRS RADIATION  
PROTECTION & NUCLEAR MATERIALS SUBCOMMITTEE  
MEETING, OCTOBER 22, 2010, ROCKVILLE, MARYLAND

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting on October 22, 2010, are an accurate record of the proceedings for that meeting.

certified via electronic mail

/RA/

11/19/2010

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Michael T. Ryan, Chairman  
Radiation Protection & Nuclear  
Materials Subcommittee

Date

**Certified on: November 17, 2010**  
**Certified by: Michael T. Ryan**

**NUREG-1927 Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System  
Licenses and Certificates of Compliance**

October 22, 2010

**INTRODUCTION:**

The Advisory Committee on Reactor Safeguards (ACRS) Subcommittee on Radiation Protection & Nuclear Materials met in Room T-2B3 at the Headquarters of the U.S. Nuclear Regulatory Commission (NRC), located at 11545 Rockville Pike, Rockville, Maryland, on October 22, 2010. The Subcommittee was briefed by representatives of NRC's Division of Spent Fuel Storage and Transportation (SFST). The topic included license renewal process for spent fuel casks.

NUREG-1927 is a standard review plan (SRP) which provides guidance to the staff to ensure that the applicant assesses the structures, systems, and components (SSCs) determined to be within the scope of renewal; identifies aging effects requiring management; and provides appropriate analyses of all SSCs with a time-dependent operating life.

The Chairman for this ACRS Subcommittee was Dr. Michael T. Ryan. Mr. Christopher L. Brown was the cognizant ACRS staff engineer on this topic and served as the Designated Federal Official for this meeting. The entire meeting was open to public attendance. The Subcommittee received no written comments or requests for time to make oral statements from any members of the public concerning the subject of this meeting. This meeting convened at approximately 1:30 p.m. and ended at approximately 3:45 p.m.

The detailed agenda identifying the specific presentation topics comprising this meeting can be found in Attachment 1. The presentation materials can be found in the transcript. Both during and following the scheduled presentations, the speakers responded to specific questions and comments from the ACRS Subcommittee members. The scope of the questions, comments, and answers thereto, and the speaker's responses thereto, have been captured in the verbatim meeting transcript.

ACRS Subcommittee meeting transcripts can be found at the following NRC Internet website location: <http://www.nrc.gov/reading-rm/doc-collections/acrs/tr/subcommittee/>.

**ATTENDEES**

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**ACRS**

M. Ryan, Subcommittee Chairman	S. Armijo, Member	D. Bley, Member
J. Sieber, Member	S. Abdel-Khalik	

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**NRC Staff**

R. Lorson

M. Waters

R. Parkhill

Ata. Istar

G. Hornseth

D. Huang

R. Einziger

B. Tripathi

**SCHEDULED PRESENTATIONS**

The published meeting agenda for this Subcommittee meeting called for the discussion of approximately 3 topics.

***Opening Remarks by the Subcommittee Chair***

Subcommittee Chairman Ryan made the opening remarks. The purpose of this meeting is to receive a briefing from the staff in the Division of Spent Fuel Storage and Transportation staff on the SRP for Renewal of Spent Fuel Dry Cask Storage System (DCSS) Licenses and Certificates of Compliance (COC), NUREG-1927. No formal document existed for the staff to conduct a license renewal for a dry cask storage system at an Independent Spent Fuel Storage Installation (ISFSI). The staff developed a SRP for renewal applications. The Commission instructed the staff to develop this SRP after the final rule amending § 72.42 by extending the term allowed for specific ISFSI licenses from not to exceed 20 years to not to exceed 40 years.

***Introductory Statements***

Mr. Doug Weaver, SFST Deputy Director made an opening statement. Consistent with the published meeting agenda, Mr. Ata Istar, lead project manager, indicated that the scheduled presentations would cover the regulatory basis, the license renewal process, and a few public comments.

***SFST Presentation***

The SRP provides guidance to the staff in reviewing the effects of aging on storage casks or ISFSI sites. The SRP also assists potential applicants in identifying the primary elements to be included in a renewal application and measures necessary to ensure that the cask (a spent fuel waste package) or ISFSI can be operated during the renewal period without undue risk to the health and safety of the public.

To renew a specific license or a CoC, an applicant must submit a renewal application before the expiration of the license or the CoC, in accordance with the requirements of 10 CFR Part 72. The NRC may renew a specific license or a CoC for a term not to exceed 40 years. Both the license and the CoC renewal applications must contain revised technical requirements and operating conditions (fuel storage, surveillance and maintenance, and other requirements) for the ISFSI or dry cask storage system (DCSS) that address aging effects that could affect the safe storage of the spent fuel and must specify what the licensee of an ISFSI, is authorized to store.

General review areas include the following: 1) providing criticality control of spent fuel, 2) providing heat transfer, 3) directly or indirectly maintaining a pressure boundary, 4) providing radiation shielding, and 5) providing structural support, functional support, or both, to SSCs that are important to safety

Geoff Hornseth discussed storage cask designs and key renewal issues, such as, corrosion and thermal fatigue. He indicated that the staff's technical basis is derived from the following: 1) preliminary guidance developed from experience with power plant license renewal and 2) cask opening & examination. Mr. Hornseth stated that no degradation of cask interior was reported for the DCSS that contained low burn-up fuel cladding after 15 years of storage. Mr. Hornseth and Bob Einziger responded to questions concerning the technical basis and data contained in NUREG/CR-6745, "Dry Cask Storage Characterization Project - Phase 1; CASTOR V/21 Cask Opening and Examination," and NUREG/CR-6831, "Examination of Spent PWR fuel Rods after 15 years in dry Storage". Dr. Armijo requested to review the two documents.

Mr. Hornseth indicated that typical dry cask storage cask (most canisters are fabricated using stainless steel. Some older canisters have been fabricated using carbon steel. Carbon steel requires coatings for corrosion protection).

Mr. Istar discussed the scoping process, the aging management review, the time-limited aging analysis, and the aging management program. He mentioned that the license renewal application submitted by the applicant should contain an aging management review, a time-limited aging analysis, and aging management programs. Additional information related to the updated final safety analysis report and changes or additions to technical specifications should also be contained in the application.

Mr. Hornseth highlighted ongoing activities supporting aging management for DCSS performance. Dr. Armijo requested a copy of the NUREG on staff sponsored research related to coastal marine atmosphere effects.

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**Attachment 1**

**Advisory Committee on Reactor Safeguards**  
Meeting of the Subcommittee on Radiation Protection & Nuclear Materials  
Rockville, MD

**NUREG-1927**  
**Standard Review Plan**  
for  
**Renewal of Spent Fuel Dry Cask Storage System**  
**Licenses and Certificates of Compliance**

Friday, October 22, 2010

Cognizant Staff Engineer: Christopher L. Brown  
(301)-415-7111  
[Christopher.Brown@nrc.gov](mailto:Christopher.Brown@nrc.gov)

Item	Topic	Presenter(s)	Time
1	Opening Remarks and Objectives	Dr. Michael Ryan, ACRS	1:00 - 1:10 p.m.
2	Staff Opening Remarks	Ray Lorson, SFST	1:10 - 1:15 p.m.
3	Background/Regulatory Basis	Geoff Hornseth, SFST	1:15 – 2:00 p.m.
4	License Renewal Process	Ata Istar, SFST	2:00 – 3:00 p.m.
5	Break		3:00 – 3:15 p.m.
6	Public Comments	All	3:15 – 3:45 p.m.
7	Committee Discussion	Dr. Ryan, ACRS	3:45 – 4:15 p.m.
8	Adjourn		4:15 p.m.

NMSS/SFST Notes:

- During the meeting, 301-415-7360 should be used to contact anyone in the ACRS Office.
- Presentation time should not exceed 50 percent of the total time allocated for a given item. The remaining 50 percent of the time is reserved for discussion.
- Thirty five (35) hard copies (2 B&W slides per page) of each presentation or handout should be provided to the Designated Federal Official 30 minutes before the meeting.
- 10 full page colored copies for the ACRS members and the court reporter.