May 5, 2004

COMMISSION VOTING RECORD

DECISION ITEM: SECY-04-0029

TITLE: OPTIONS FOR FULL-SCALE SPENT NUCLEAR FUEL TRANSPORTATION CASK TESTING UNDER THE PACKAGE PERFORMANCE STUDY

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of May 5, 2004.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

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Annette L. Vietti-Cook
Secretary of the Commission

Attachments:
1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
OGC
EDO
PDR

VOTING SUMMARY - SECY-04-0029

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. DIAZ	X				X	3/18/04
COMR. McGAFFIGAN	X				X	4/6/04
COMR. MERRIFIELD	X				X	3/11/04

COMMENT RESOLUTION

In their vote sheets, all Commissioners approved the staff's recommendation and provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on May 5, 2004.

Commissioner Comments on SECY-04-0029

Chairman Diaz

While I recognize the difficulty of developing a variety of spent fuel transportation cask testing options for the Commission's consideration, I disapprove the four described in the paper. The paper makes a somewhat artificial distinction between the "regulatory" and "demonstration" tests. Instead, I propose a hybrid approach to include conduct of a focused, reasonable, and confirmatory test on a full-scale NRC-certified rail cask, to demonstrate the inherent safety in spent fuel cask design. Data collection should focus on the key parameters that will increase confidence in package performance, and validate key analytical methods, assumptions and models that serve as the basis for NRC regulations and regulatory reviews of transportation cask applications. The key technical issue to be confirmed is the validity of the scaling methodology used for the one-quarter scale regulatory modeling by measuring selected parameters during an instrumented test. As such, the designed test might be a hybrid of the regulatory and demonstration tests described in the paper. The staff should develop a hybrid test, that demonstrates the inherent safety of rail casks as well as the scaling methodology, by validating selected parameters in a technically feasible and credible manner. The staff should provide a proposed test to the Commission with a breakdown of the total cost and scheduling milestones before proceeding.

I also agree with Commissioner Merrifield that the study may be expanded in the future, following Commission approval, to include testing of a truck cask, if DOE selects a truck cask design and provides sufficient funding to support the testing. Finally, once the Commission provides direction to the staff on this testing, it is not necessary to conduct additional tests on other certified spent fuel transportation casks because the tested cask should be representative of those currently in use and used for the foreseeable future.

Commissioner McGaffigan

I approve Option 2 augmented with a regulatory test of a truck cask, which would make the total program cost approximately $63.1 million, according to Attachment 2 of the Commission paper. Thus, I am supporting both regulatory and demonstration tests of both a rail cask and a truck cask. In the case of the regulatory test of a rail cask, I would support the additional element of a 200-meter submersion test mentioned by the staff in Attachment 1.

I understand the staff"s concerns regarding the testing of the General Atomics GA-4 truck cask. I also have carefully considered Commissioner Merrifield's and the Chairman's votes. However, in light of recent Department of Energy statements that while its preferred transportation option is rail, all early (perhaps for as long a six years) shipments to a potential Yucca Mountain repository might be by truck, I think we have little choice but to conduct both regulatory and demonstration tests on the General Atomics cask. The staff should discern from DOE when they believe truck casks will be available for testing. In my view the NRC cost for the truck casks should be the cost of a typical production cask, not the cost of the first prototype cask with research and development overhead built in. Otherwise NRC will be subsidizing DOE's truck cask acquisition program. NRC's Package Performance Study (PPS) truck cask

tests will basically be paced by DOE's ability to provide the casks to NRC[1]. NRC's PPS rail cask tests can be more easily scheduled because we will be testing production series casks.

The variation on Option 2 that I am advocating is admittedly expensive, but the cost is a small fraction of the overall cost of the repository program. Moreover, the cost can likely be spread over a longer time period than depicted in Attachment 2 (fiscal years 2004-2009), keeping costs in any one year in the $10-$14 million range. This is because it is highly unlikely that DOE will have a license to receive and possess spent fuel and high-level waste by the currently announced year, 2010, as I have previously noted. DOE first focused on a 2010 opening of the repository in 1989. The 2010 date was then predicated on a year 2000 submittal of a construction authorization, followed by a four year hearing, a four year construction period for surface facilities and a two year second hearing on the license amendment to receive and possess high-level waste and spent fuel. Today DOE hopes to submit a construction authorization request on December 30, 2004, hopes for a three year hearing, hopes for a brief construction period, and hopes for essentially no second hearing because all contentions will have been litigated in the first hearing. All of those hopes are unlikely to be realized. First shipments are more likely to be in the 2012-2016 time frame, if NRC grants the construction authorization and license amendment. Even then, truck casks are still likely to be required for some fraction of shipments to the potential repository, as DOE recognizes and the Nuclear Waste Technical Review Board (NWTRB) recently highlighted. The need for truck cask tests to be part of the PPS would not be eliminated.

I want to conclude by commending the NRC staff for the effort they have made to give the Commission options for the PPS. They have clearly gone the extra mile in gathering thousands of public comments on the draft proposals, both in written form and through public workshops around the country, and in resolving those comments. They have presented the Commission with four possible options and each of us has chosen variations on those options. The final result of the Commission's deliberations is yet to be determined. But I should note that I am disturbed that some State of Nevada officials have already announced that they will seek to have Congress rewrite the PPS test protocol, regardless of our final decision. They will insist on tests that go far beyond our already conservative regulations. They will insist, for example, that the casks be tested without impact limiters, as if those impact limiters are not an integral part of the cask designs. They will even claim that their test program will cost less than the NRC's program, a claim that Congress should examine skeptically. The State of Nevada certainly has a right to petition Congress on this matter, but Congress should know that both the NRC staff and the Commission itself have carefully deliberated on these matters, as Congress intended when it created an independent safety regulator in 1974. I would hope that our decisions will not be easily discarded.

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[1] The use of truck casks for early shipment to a potential Yucca Mountain repository likely means that such early shipments will not come from decommissioned reactor sites. Such sites have placed their spent fuel in large (100 ton plus) casks, which hold tens of assemblies and are best suited for rail transport. With spent fuel pools having generally been demolished as part of decommissioning the reactor facilities, it would be extremely difficult (and pose safety and cost challenges) to offload such spent fuel into smaller legal weight truck casks, holding only a small number of assemblies each.

Commissioner Merrifield

I approve implementation of the Package Performance Study as described in the following paragraphs.

If a high-level radioactive waste disposal facility is licensed, whether it be at Yucca Mountain or any other location, one end result would be a large number of shipments of high-level radioactive waste and spent fuel. Everyone involved wants to ensure the transportation occurs in a safe manner. Although the NRC's regulatory processes are designed to ensure safety, the general public is concerned because the NRC does not require full scale testing of the transportation casks. While I firmly believe in the adequacy of our existing review process, I believe it is important for public assurance to conduct some type of full scale testing of an appropriate representative transportation cask or casks to demonstrate the robustness of transportation casks that will pass the certification process.

The staff, to their credit, have conducted a number of public meetings to define an appropriate testing protocol for the Package Performance Study. Those stakeholders with the technical capability to fully appreciate the forces associated with testing to regulatory requirements believe that testing to regulatory requirements is all that is necessary. However, many members of the general public have problems conceiving that the regulatory criteria actually is more challenging to the cask than subjecting the package to a crash under more "realistic" transportation conditions (referred to as a demonstration test as opposed to a regulatory test). Basically, an analytical process that employs sophisticated, yet predictable computer models comes across to the public as technical jargon. However, a physical crash under normal transportation circumstances is something the public can physically see. In an attempt to resolve and respond to all the stakeholder comments, staff has proposed a number of different options, including regulatory testing and demonstration testing.

The question now becomes how many casks should be tested and by what means. It can easily be argued that at least one cask from each transportation mode (i.e., rail or truck) should be tested. A certified rail transportation cask exists which has been manufactured, and there is a reasonable possibility that DOE may use this rail cask for some shipments. Although there is an existing certified truck transportation cask, it has never been manufactured; and it is not necessarily reasonable to assume that DOE will choose this particular transportation cask for truck shipments to the repository. If NRC is to conduct such testing, it should be done on casks reasonable likely to be used for the high-level waste repository.

In order to provide additional assurance to the general public, I believe NRC should fund a demonstration test of the existing certified rail transportation design. Since we are highly confident that our licensing process as well as previous bench scale testing of the cask designs adequately satisfies our regulatory requirements, I do not believe it is warranted to spend tens of millions of dollars to conduct the regulatory testing option provided by the staff. If possible, DOE should commit some funding to support this demonstration test. Nevertheless, the NRC should fund a rail cask demonstration test whether or not DOE is able to commit funds to this study. In addition, if DOE chooses a truck transportation cask design and is willing to provide sufficient funding to support a demonstration test on this additional cask, then the staff can also commit to conducting this additional testing. Given the fact that the DOE is a few years away from selecting and obtaining a prototype of a truck transport cask, the staff should not expend any resources on a demonstration test for a truck cask until the Commission has been provided with greater certainty about the truck cask design.