December 10, 2004

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary **/RA/**

SUBJECT: STAFF REQUIREMENTS - SECY-04-0135 - DEMONSTRATION TEST PLAN FOR FULL-SCALE SPENT NUCLEAR FUEL RAIL TRANSPORTATION CASK TESTING UNDER THE PACKAGE PERFORMANCE STUDY

The Commission has approved proceeding with the Package Performance Study as modified in the following paragraphs. There have been significant developments since the staff submitted SECY-04-0135 for Commission consideration. The most notable has been the completion of drop testing in Germany using casks representing two different rail cask designs for spent fuel transport. These tests could provide appropriate data to reaffirm aspects of our existing regulatory approach without the NRC replicating these tests.

The NRC should conduct an integral demonstration test (a test that involves the system as a whole and not a test of individual components) as one means of increasing public confidence on the viability of existing spent fuel transportation casks. Although it would be helpful to have financial support from DOE for this test, the NRC should fund at least one test of a rail spent fuel transportation cask regardless of what financial support is received from DOE.

The demonstration test should be conducted at reasonable cost when funds are available and should involve a single rail spent fuel transportation cask. The test should be constructed to represent a viable transportation accident, not necessarily the worst case scenario or a hypothetical accident requiring multiple events to occur simultaneously. Specifically, the test should consist of a simulated rail crossing with a train traveling at an appropriate speed colliding at a ninety degree angle with a transportation cask on its rail carrier car in a normal transportation configuration. The necessary instrumentation and video cameras should be used to document the impact and resulting cask condition. The purpose of this test is to demonstrate the robustness of the cask design and overall transportation system. The test will consist only of the collision and the natural results of that collision. No separate fire testing or immersion testing will be conducted on the cask. For effective utilization of resources, the testing should be done at an existing facility, such as the train testing facility in Pueblo, Colorado.

The timing of the demonstration test will be established when our appropriations are determined by Congress. The staff should prepare an information paper outlining the details and projected costs of the proposed demonstration test as described above. Given the current budget limitations, this paper should be submitted within 90 days after the NRC appropriations are finally determined by Congress and before initiating any action to implement the test.

An equivalent demonstration test on a truck spent fuel transportation cask may be considered at an appropriate time in the future pending the results of the rail transportation test, DOE's selection of a specific truck transportation cask design, and DOE's willingness to financially support such a test.

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
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