



POLICY ISSUE

July 12, 1989

(NEGATIVE CONSENT)

SECY-89-208

For:

The Commissioners

From:

Victor Stello, Jr.
Executive Director for Operations

Subject:

INTERIM REPORT - DRAFT CRITERIA FOR PACKAGE DROP AND
AIRCRAFT CRASH TESTS FOR PLUTONIUM AIR TRANSPORT (PAT)
PACKAGES

Purpose:

To inform the Commission of the staff's intent to forward
the Interim Report to the Power Reactor and Nuclear Fuel
Development Corporation (PNC) of Japan.

Background:

Section 5062 of Public Law 100-203 (Murkowski Amendment) requires testing of containers used to transport plutonium by aircraft from a foreign nation to another through U.S. airspace, and NRC certification to Congress that the containers are safe. The Commission was previously informed of the staff's interpretation of the requirements of Section 5062 (SECY-88-302 dated October 25, 1988). The Commission was also informed of the Agreement between the Nuclear Regulatory Commission (NRC) and PNC establishing a Testing and Administrative Program for Certifying Plutonium Air Transport Packages (SECY-88-329 dated December 1, 1988). The Program is funded by PNC in accordance with the Amendment. The Commission was also asked to approve staff's selection of the crash of Pacific Southwest Airlines (PSA) Flight 1771 as representing a worst actual aircraft accident for purposes of determining "worst case" testing conditions required by Section 5062 (SECY-88-344 dated December 15, 1988). On May 15, 1989, the Commission was briefed on the status of Phase One of the Testing and Administrative Program.

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In the subject Interim Report (Enclosure 1), the contractor, Lawrence Livermore National Laboratory (LLNL), summarizes the effort to date on Phase One, including a description of its investigation of the impact conditions experienced by PSA Flight 1771, and proposed criteria for package drop and aircraft crash tests. PNC requested that an interim report on draft package testing criteria be forwarded at this time to aid PNC in the selection of a shipment mode and in budget preparation related to the retransfer of plutonium from Europe to Japan. PNC also requested cost and schedule estimates for continuation of the Testing and Administrative Program (Enclosure 2).

Discussion:

The Interim Report identifies aircraft impact angle, velocity, and the hardness of the ground surface as the basic crash severity components. Based on the flight data recorder, ground radar-tracking data and eyewitness accounts, the contractor determined that the PSA Flight 1771 impact angle with respect to ground surface was 60° for the center of mass trajectory, and the velocity at impact was 630 mph. The contractor characterized the crash site surface hardness by conducting in-situ measurements and drilling core samples to determine surface geology, penetrability and other standard geological parameters.


The Interim Report draft package drop criteria are specified basically in terms of a cargo aircraft's maximum cruising altitude and the corresponding package impact velocity at sea-level, with hardness of the impact area equivalent to or harder than the PSA crash site. The aircraft impact-condition test criteria are specified as a minimum 60° aircraft impact angle, and 630 mph impact velocity with the same impact area hardness criterion as that for the drop test. The report also specifies criteria for the test aircraft, package loading arrangement, test range, remote control and flight-termination systems, measurements, etc. The draft acceptance criteria for the drop and aircraft crash tests are the same as those for Type B packages meeting hypothetical accident conditions, and are specified in 10 CFR 71 and in NRC's existing criteria for certification of plutonium air transport packages (NUREG-0360).

Conclusion: Staff believes the draft test criteria are sufficiently developed at this time for purposes of discussion with PNC.

Scheduling: PNC has requested that this report be forwarded to PNC on July 14, 1989, and that staff meet at PNC headquarters the week of July 31, 1989 for technical discussions on the report. The final report for Phase One activities is scheduled for completion by September 30, 1990.

Coordination: This paper has been coordinated with the Office of the General Counsel, and it has no legal objection.

Recommendation: As specified in the NRC/PNC Agreement Schedule, the staff intends to provide PNC with a copy of the Interim Report and cost/schedule estimates for continuation of the Program on July 14, 1989, unless the Commission directs otherwise.


Victor Stello, Jr.
Executive Director
for Operations

Enclosures: (Commissioners, SECY and OGC only)

1. Draft Criteria for Package Drop and Aircraft Crash Tests - An Interim Report
2. Cost and Schedule Estimates for NRC Activities Phases II, III and IV

SECY NOTE: In the absence of instructions to the contrary, SECY will notify the staff on Friday, July 14, 1989, that the Commission, by negative consent, assents to the action proposed in this paper.

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