

June 16, 2009

MEMORANDUM TO: Nader Mamish, Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: Chris Staab, Project Manager /RA/
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF JUNE 11, 2009, TELECONFERENCE WITH DOE-
NNSA, REGARDING A PROPOSED REVISION TO CERTIFICATE OF
COMPLIANCE 0361 FOR MODEL NO. PAT-1 TRANSPORTATION
PACKAGE

Background. On June 11, 2009, a teleconference was held between staff and DOE-NNSA, at the request of DOE-NNSA to discuss a proposed revision to the Certificate of Compliance for the PAT-1 transportation package. The PAT-1 is currently certified for air transportation of 2 kg of powdered Plutonium Oxide. The applicant is seeking to certify the PAT-1 for air transport of a smaller quantity of plutonium metals. The applicant intends to submit the proposed application by October 1, 2009. No regulatory decisions were made at the meeting. The list of meeting attendees is Enclosure 1. An agenda provided by TN is Enclosure 2. Presentation slides are Enclosure 3.

Discussion. The discussion addressed the items identified in the agenda.

- PAT-1 Review History. The applicant discussed new needs for air transport of small quantities of plutonium metal to support critical security programs. The applicant discussed the current PAT-1 design and provided historical information concerning the applicant's desire to use PAT-1 for air transportation of plutonium metals. Based on a series of meetings dating back to May 2006, and staff questions, the applicant will propose a eutectics prevention barrier fabricated from a titanium alloy with supporting structural analysis.
- Structural Analysis Overview. The applicant will propose a 4.6 lb eutectic prevention barrier with contents. The containment vessel design will remain unchanged. The applicant will propose allowing plutonium metals up to 831 grams. The applicant will demonstrate regulatory compliance by analysis using the tearing parameter which the applicant states has been used successfully for several years at Sandia National Laboratories to simulate ductile failure. The applicant stated under this type of analysis in no case does the impact of the proposed contents under hypothetical accident conditions induce ductile tearing of the eutectic barrier and regulatory compliance is demonstrated.

- Staff Comments.
 - The applicant stated the PAT-1 meets all regulatory criteria for the same mass of plutonium oxide. Staff encouraged the applicant make a clear regulatory case in the application that all regulatory criteria are satisfied for the proposed mass of plutonium metal.
 - The applicant emphasized the Safety Analysis Report addendum contains 400 pages, which is much larger than the already existing Safety Analysis Report. Staff stated the clarity and quality of the presentation of the regulatory case will facilitate the review.
 - Staff queried whether time history plots will be provided. The applicant responded data does not exist for the proposed eutectic barrier. To the extent possible, staff suggested the applicant provide data from previous overpack testing to validate the new model of overpack with eutectic barrier installed.
 - To facilitate the review, staff requested reference material concerning the tearing parameter failure criterion.
 - Staff suggested the applicant provide discussion concerning model uncertainties in the upcoming application.

TAC No. L24346

- Enclosures:
1. Attendees
 2. Agenda
 3. Presentation Materials

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 Filename: G:/SFST/Staab/NNSA/Meeting Summary.doc
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OFC	SFST	E	SFST		SFST	
NAME	CStaab		MDeBose		EBenner	
DATE	6/15/2009		6/15/2009		6/16/2009	

C=Without attachment/enclosure E=With attachment/enclosure N=No copy **OFFICIAL RECORD COPY**

TELECONFERENCE PARTICIPANTS
Conducted by the Nuclear Regulatory Commission
and DOE-NNSA to Discuss a Proposed PAT-1 Certification Revision
June 11, 2009

Gordon Bjorkman	NRC/SFST
Jeremy Smith	NRC/SFST
Chris Staab	NRC/SFST
Kim Hardin (part time)	NRC/SFST
Geoff Hornseth	NRC/SFST
Bob Tripathi	NRC/SFST
David Tang	NRC/SFST
Maximo Barela	DOE-NNSA
Ahmad Al-Daouk	DOE-NNSA
Paul Mann	DOE-NNSA
Mike Caviness	LANL
Dave Harding	SNL
Mike Hessheimer	SNL
John Maenchen	SNL
Marianne Walck	SNL
Richard Yoshimura	SNL
Jim Tollison	SAIC

AGENDA
Teleconference Between the Nuclear Regulatory Commission
and DOE-NNSA to Discuss a Proposed PAT-1 Certification Revision
June 11, 2009

- Introductions
- PAT-1 Review History
- Structural Analysis Overview
- Concluding Remarks