

July 2, 2002

MEMORANDUM TO: Ashok C. Thadani, Director
Office of Nuclear Regulatory Research

FROM: Martin J. Virgilio, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: USER NEED MEMORANDUM FOR UPGRADING THE MELCOR
AND MACCS (OR ANOTHER COMPUTER CODE) TO AID IN
CASK SAFEGUARDS ANALYSIS

The Office of Nuclear Material Safety and Safeguards (NMSS) is requesting the Office of Nuclear Regulatory Research (RES) assistance to the Spent Fuel Project Office (SFPO) in upgrading and implementing the MELCOR code to conduct thermal and source term assessments, as well as offsite consequence assessments (e.g., MACCS computer code) for spent fuel dry storage and transportation casks. These calculations are needed to determine the response of casks to terrorist events.

In response to the terrorist attacks of September 11, 2001, SFPO has been examining the vulnerability and consequences of cask sabotage events. The staff has determined that the MELCOR code, currently utilized by RES in the storage cask probable risk assessment and severe reactor accidents, may be an effective tool, with appropriate upgrades, to perform thermal and source term calculations for casks subjected to sabotage events. Of importance to SFPO is MELCOR's ability to evaluate the quantity, radionuclide particle size distribution, temperatures, and energy of the source terms. The output from MELCOR would then be used as input to a radiological consequence model, such as MACCS, to assess both near distance and long distance consequences. Of importance to SFPO is MACCS's (or other codes) ability to quantify deposition of particles, radiological exposure and consequences from the cask to several hundred meters and beyond, and estimate the cleanup costs for various locations, such as urban, rural, and farm land.

The schedule for this assistance needs to be consistent with our Vulnerability Assessment Program.

If you have any questions related to our needs, please contact Mr. Jack Guttmann, Chief, Technical Review Section B, SFPO.

July 2, 2002

MEMORANDUM TO: Ashok C. Thadani, Director
Office of Nuclear Regulatory Research

FROM: Martin J. Virgilio, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: USER NEED MEMORANDUM FOR UPGRADING THE MELCOR
AND MACCS (OR ANOTHER COMPUTER CODE) TO AID IN
CASK SAFEGUARDS ANALYSIS

The Office of Nuclear Material Safety and Safeguards is requesting the Office of Nuclear Regulatory Research (RES) assistance to the Spent Fuel Project Office (SFPO) in upgrading and implementing the MELCOR code to conduct thermal and source term assessments, as well as offsite consequence assessments (e.g., MACCS computer code) for spent fuel dry storage and transportation casks. These calculations are needed to determine the response of casks to terrorist events.

In response to the terrorist attacks of September 11, 2001, SFPO has been examining the vulnerability and consequences of cask sabotage events. The staff has determined that the MELCOR code, currently utilized by RES in the storage cask probable risk assessment and severe reactor accidents, may be an effective tool, with appropriate upgrades, to perform thermal and source term calculations for casks subjected to sabotage events. Of importance to SFPO is MELCOR's ability to evaluate the quantity, radionuclide particle size distribution, temperatures, and energy of the source terms. The output from MELCOR would then be used as input to a radiological consequence model, such as MACCS, to assess both near distance and long distance consequences. Of importance to SFPO is MACCS's (or other codes) ability to quantify deposition of particles, radiological exposure and consequences from the cask to several hundred meters and beyond, and estimate the cleanup costs for various locations, such as urban, rural, and farm land.

The schedule for this assistance needs to be consistent with our Vulnerability Assessment Program.

If you have any questions related to our needs, please contact Mr. Jack Guttman, Chief, Technical Review Section B, SFPO.

DISTRIBUTION:

NRC File Center NMSS r/f SFPO r/f PUBLIC

C:\ORPCheckout\FileNET\ML021840008.wpd ML021840008

OFC:	SFPO	DD:SFPO	D:SFPO	D:NMSS				
NAME:	JGuttman;jh	MWHodges	EWBrach	MJVirgilio				
DATE:	6/ 26/02	6/26 /02	6/ 27 /02	7/ 01 /02				

--	--	--	--	--	--	--

C = COVER E = COVER & ENCLOSURE N = NO COPY OFFICIAL RECORD COPY
 ROUTING AND TRANSMITTAL SLIP

Date: July 3, 2002

NAME	INITIALS	DATE
J. Guttman		
W. Hodges		
E. W. Brach		
M. J. Virgilio		

ACTION: _____ APPROVAL: _____ FOR YOUR INFO: _____
 NOTE & RETURN: _____ PREPARE REPLY: _____ COORDINATION: _____

EDO/NMSS TICKET NO(s):
 DUE TO DIVISION:
 DUE TO NMSS:
 DUE TO EDO:

MEMORANDUM TO: Ashok C. Thadani, Director RES
 FROM: Martin J. Virgilio, Director NMSS
 SUBJECT: USER NEED MEMORANDUM FOR UPGRADING THE MELCOR
 AND MACCS (OR ANOTHER COMPUTER CODE) TO AID IN
 CASK SAFEGUARDS ANALYSIS

REMARKS:

ORIGINATOR: J. Guttman PHONE: 301-415-8510
 SECRETARY: J. Hennigan PHONE: 301-415-8551
