

164K-Develop a model of

6/2/2002

Storage Casks							
Rail Casks							
Truck Casks							
Activity	Event	Cost	Activity	Event	Cost	Activity	Event
Air Plane Crash	SNL	425	0	Plane Crashing into SFBI			
Air Plane Crash	SNL	250	0	Small plane with crashing into SFBI			
Simplified Model		80					
Simplified Model		75					
Recreation							
Rail (Volpe Model)	TBD / SFPO	85		plane crashing into Rail carrying rail cask			
Truck	TBD / SFPO	85		plane crashing into truck carrying truck cask			
West Holstead							
Definition							
			1				
			2				
			3				
			4				
			5				
			6				
			7				
			8				
			9				
			10				
VOLPE Rail Car Structural Model	Volpe	80					
Cask Structural Model Development	SNL	0	0	HIST-K (1)	MP-117 (3)		
Rail	SNL	50	0	TN-FET one time use DOE West Valley	MP-117 (3)	NAC-STR (2)	
	SNL	50	0	TN-REC one time use DOE West Valley	MP-117 (3)	NAC-STR (2)	IF-300
	SFPO	0	0	TS-DS			
Truck	SNL	50	0	NAC-LAT - TRAIL (1)			
	SNL	50	0	NAC-STR (2)	GE 200 (1)		
	SNL	50	0	NAC-LAT (1)	ALI-12 (2)		
	SNL	50	0	-GA-4 (2)			
Ship	SNL	50	0	MS-CAM - Structural Model (1)			
	SNL	50	0	NAC-UMS - Structural Model (3)			
	SNL	50	0	MS-CAMS - Structural Model (2)			
	SNL	50	0	TN-LS - Structural Model (4)			

EX 2

Portions EX 2

E/26

**TERRORIST EVENTS -- JUNE 2002 DELIVERIES**

- [1] Develop detailed analytic model of large aircraft crashing into ISFSI (Analyses to follow)
- [2] Initiate Development of a simplified model of a large aircraft. Validate simplified model with detailed model ([1] above).
- [3] Identify dry storage cask terrorist events - following the Commission's approved threat (Analyses to follow).
- [4] Identify dry transportation cask terrorist events - following the Commission's approved threat (Analyses to follow).
- [5] Develop draft guidelines for source term analyses related to terrorist event assessment (To be updated following research results from international cooperative programs (long term) *April, 2002*)
- [6] Initiate development of structural and thermal models of transportation and storage casks for generic assessment (Analyses to follow).
- [7] Identify need for follow-on analyses on non-spent fuel radionuclide sources.
- [8] Identify potential terrorist events related to trains (with input from DOT).
- [9] Develop a table of weapons versus consequences when fired upon storage casks (as known to date)

*defense potential*  
**(10)** *Vulnerabilities* —

**TERRORIST EVENTS -- SFPO      End-**  
**December 2002 Deliverables**

- 1 SNL report on large aircraft crashing into ISFSI (Sept. 2002)
- 2 SNL report on small aircraft with <sup>EX2</sup> crashing into ISFSI (Nov. 2002)
- 3 Update Guidance on Analytic Methods and Assumptions
- 4 Develop Truck and Rail Structural Models for Terrorist Analyses
- 5 Identify Additional Sabotage Scenarios to be Analyzed (If needed)
- 6

Portion EX2

**Terrorist Events -- SFPO End of September, 2003  
Deliverables**

1 Small plane with ( ) crashing into ISFSI

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

10 Need for full-scale testing (?)

11 Commission Paper on Recommendations



Portions Ex 2

## Vulnerability of Spent Fuel Storage Facilities

During FY 2003 through FY-2005, NMSS will continue to assess the vulnerability of

- a. Vulnerability of ISFSIs and individual dry storage casks to air crashes
- b. Vulnerability of dry storage casks to
- c. Changes to regulations and guidance to provide additional security measures to protect ISFSIs and individual dry storage casks.
- d. Review of licensee changes to physical security plans or cask designs made in response to changes in physical security regulations.

) Ex 2

Basis: In FY 2002, in response to the events of September 11, 2001, the NRC initiated a systematic reassessment of existing and proposed spent fuel storage facilities and dry storage casks to determine their vulnerability to potential sabotage and terrorist events. The reassessment involves the use of complex analytic methods and data collection to model the expected consequences from potential sabotage and terrorist events, and to develop protective measures where needed.

### Uncertainty:

- a. Medium - The scope and level of analysis required will depend on development of a Design Basis Threat (DBT) for ISFSIs.
- b. High - Potential statutory changes defining a DBT may require additional

## Vulnerability of Transport of Spent Nuclear Fuel

During FY 2003 through FY-2005, NMSS will continue to assess the vulnerability of spent fuel transport casks to potential sabotage and terrorist events. The effort will involve analytical analysis and data gathering, response to Congressional and Public concerns, and rulemaking should changes in the current regulations be deemed necessary. Specific issues to be addressed include, but are not limited to the following:

- a. Vulnerability of spent fuel transport casks to air, highway, and rail crashes
- b. Vulnerability of spent fuel transport casks to , that could be acquired by potential terrorists.
- c. Changes to regulations and guidance to provide additional security measures to protect spent fuel transport casks.
- d. Review of licensee changes to physical security plans or cask designs made in response to changes in physical security regulations.

Ex 2

Portions Ex 2