

Elias

Task	Title	MWs	FY02					FY03																	
			F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O		
0	Program Initiation Meeting	8	-- (2/28)																						
1	Terrorist Events Initiated by Aircraft																								
1.1	Large Jetliner Crash into an ISFSI (Hi-Storm cask)																								
1.1A	Mechanical Analysis																								
1.1Ai	Large Plane Crash into Field of Casks (ZAPOTEC)	4	---->																						
1.1Aii	Detailed PRONTO Models																								
	Hi-Storm Cask	2	-->																						
	Engine	3	-->																						
	Landing Gear	1	->																						
	Central Wing Structure	2	->																						
1.1Aiii	Detailed PRONTO or ZAPOTEC Cask Collision Calculations																								
	Engine + Hi-Storm	2	->																						
	Landing Gear + Hi-Storm	2	->																						
	Central Wing Structure + Hi-Storm	2	->																						
1.1Aiv	ZAPOTEC Center Fuel Tank Analysis																								
	Model of Center Fuel Tank + Fuel	1	->																						
	Center Fuel Tank + Fuel + Hi-Storm Cask Collision Calculation	2	->																						
1.1Avi	Analysis of Canister Performance	2	->																						
1.1B	Thermal Analysis		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O		
1.1Bi	Estimation of Amount of Fuel in Fireball and Pool Fire	2	->																						
1.1Bii	Analysis of Canister Failure Temperature (JAS 3D)	2	->																						
1.1Biii	Time to Rod Burst Rupture (VULCAN, correlations, and/or COYOTE)																								
	Undamaged Cask/Canister (w and wo storage overpack)																								
	Construct Hi-Storm Cask/Canister Thermal Model	3	-->																						
	Run Model	3	-->																						
	Damaged Cask/Canister: time dependence of rod failure																								
	Engine Collision																								
	Modify Cask Model	4	---->																						
	Run Modified Model	2	->																						
	Landing Gear Collision																								
	Modify Cask Model	3	-->																						
	Run Modified Model	2	->																						
	Center Fuel Tank Collision																								
	Modify Cask Model	3	-->																						
	Run Modified Model	2	->																						
1.1C	Rod-to-Hi-Storm cask source term: NUREG/CR-6672 methodology	4	----->																						
1.1D	Fission Product Transport through Hi-Storm cask (MELCOR)		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O		
1.1Di	Undamaged Cask/Canister (100 % rod failure)	1	->																						
1.1Dii	Damaged Cask/Canister (less than 100% rod failure)																								
	Engine Scenario	5	----->																						
	Landing Gear Scenario	3	-->																						
	Center Fuel Tank Scenario	5	----->																						

**Official Use Only**

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			F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O			
1.1E	Consequence Calculations (MACCS)	4																								
1.1F	Final Report	6																								
1.1G	Computer Code Demonstration Meeting	9																								
	Task 0 + Task 1.1 Total MWs	94																								
	Task 0 + Task 1.1 \$K @ \$6.3 K/MW	592																								
1.2	Planes/ Scenarios		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O			
1.2Ai	Survey-of- what could be used	6																								
1.2Aii	Crash Scenarios Characteristics	1																								
1.2Aiii	Representative Scenarios	3																								
1.2Aiv	Justification for neglected features	2																								
1.2Av	Proposed Modeling Methods	1																								
1.2Avi	NRC Review Meeting	2																								
1.2Avii	Modeling	2																								
1.2Bi	Hi-Storm cask CTH calcs	8																								
	PRONTO calcs	3																								
1.2Bii	Fission Product Release to Cask Interior	6																								
1.2Biii	Fission Product Transport (MELCOR)	4																								
1.2Biv	Radiological consequences (MACCS)	2																								
1.2C	Hi-Storm Cask Small Plane Crash Report	4																								
	Task 1.2 Total MWs	44																								
	Task 1.2 \$K @ \$6.3 K/MW	277																								
1.3	Simplified ANSYS/LS-DYNA Large Plane Model		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O			
1.3A	Model Development																									
1.3Ai	Definition of Model Characteristics	3																								
1.3Aii	Identification of Modeling Methods	4																								
1.3Aiii	NRC Review Meeting	3																								
1.3B	Model Coding and Validation																									
1.3Bi	Develop Simplified Finite Element Model	8																								
1.3Bii	Model Testing	2																								
1.3Biii	Model Validation	8																								
1.3C	Report	2																								
	Task 1.3 Total MWs	30																								
	Task 1.3 \$K @ \$6.3 K/MW	189																								
1.4	Large Jetliner Crash into a NAC-UMS Transportation Rail Cask		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O			
1.4A	Mechanical Analysis																									
	Detailed PRONTO Cask Collision Calculations																									
1.4Ai	Engine + NAC-UMS	2																								
1.4Ai	Landing Gear + NAC-UMS	2																								
1.4Ai	Central Wing Structure + NAC-UMS	2																								
1.4Aii	ZAPOTEC Center Fuel Tank + NAC-UMS Collision Calculation	2																								
1.4Aiii	Analysis of Canister Performance	2																								