Mars Science Laboratory Mission

2007 NASA Occupational Health Conference
HP Break-out session

July 24, 2007

PRE-DECISIONAL INFORMATION: For Planning and Discussion Purposes Only

Multi-Mission RTG

RTG Activity Differences

GPHS-RTG (F-2)			
Isotope	Mass (g)	Spec. Activity	Activity (Ci)
^{238}Pu	7,694	17.12 Ci/g	131,721
^{239}Pu	1,426	0.062 Ci/g	88
^{240}Pu	199.9	0.227 Ci/g	45
^{241}Pu	20.2	103 Ci/g	2,081
^{242}Pu	11.8	0.004 Ci/g	0.04
TOTAL	9,352	14.32 Ci/g	133,930

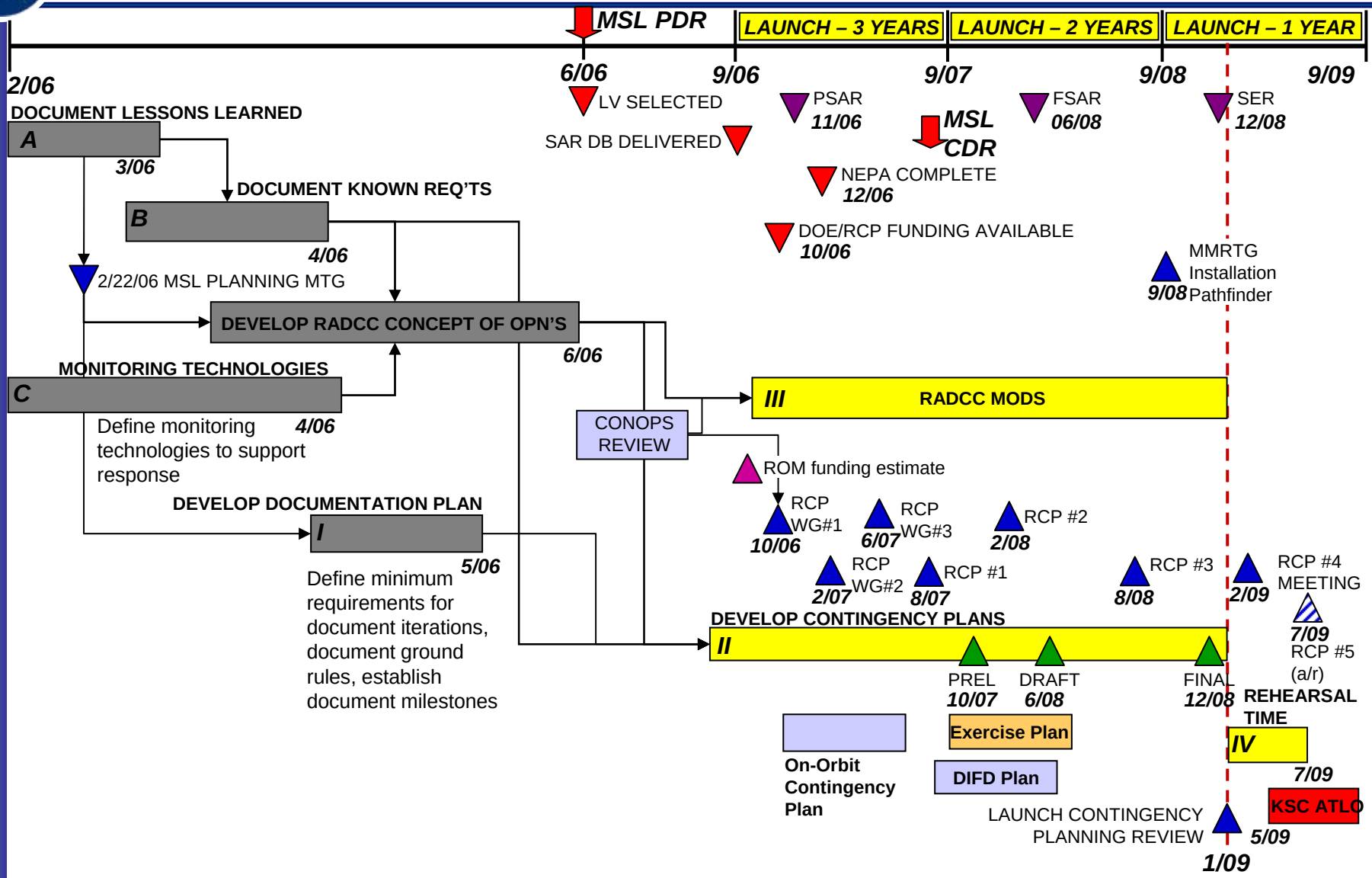
MMRTG			
Isotope	Mass (g)	Spec. Activity	Activity (Ci)
^{238}Pu	3,420	17.12 Ci/g	58,550
^{239}Pu	634	0.062 Ci/g	39
^{240}Pu	89	0.227 Ci/g	20
^{241}Pu	9	103 Ci/g	927
^{242}Pu	5	0.004 Ci/g	<< 1
TOTAL	4,844	14.32 Ci/g	59,537

Radiation Field Differences

GPHS-RTG (F-2) [mrem/hr]			
Distance (in)	Neutron	Photon	Total
24	94.6	25	119.6
36	56.9	14	70.9
48	38.8	9	47.8
60	28.5	6	34.5

MMRTG [mrem/hr]			
Distance (in)	Neutron	Photon	Total
24	61.5	10.5	72
36	27.9	4.7	32.6
48	15.8	2.7	18.5
60	10.1	1.7	11.8

High-Level Radiological Contingency Planning Schedule



Mars Science Laboratory Mission

	PROJECTED PERSONNEL and SOURCE															
	DOE HP	DOE REAC/ TS	DOE Inst. Support	CHS HPO	NASA Center HP	AFRAT HP	AFTAC HP	SGS HP	EPA HP	CHS EH	KSC EMT	PAFB BEE	SGS Fire	CHS MED	Comment	Row Totals
RADMON-1	1			1					1							3
RADMON-1A	1			1												2
RADMON-2						1				1						2
RADMON-3						1				1						2
RADMON-4						1				1						2
RADMON-5						1				1						2
RADMON-6						1				1						2
RADMON-7	1						1									2
RADMON-8	1									1						2
PDECON-1				2	1						2					5
PDECON-2				1	1						2					4
MDECON		1		1				1						5		8
AIRMON													6		personnel located at various fire stations	6
ECAM-1			1													1
ECAM-2			1													1
ECAM-3			1													1
MOVER-1			1	1												2
MOVER-2			1	1												2
COURIER-1												1				1
COURIER-2												1				1
RADBASE	1			1						2						4
Backup/ Replacement Personnel						1	1			4						6
Column Totals	5	1	5	9	2	6	2	1	1	12	4	2	6	5		61

DOE - Department of Energy
REACT/TS - Radiation Emergency Assistance Center/Training Site
CHS - Comprehensive Health Services Contractor
AFRAT - Air Force Radiation Assessment Team
AFTAC - Air Force Technical Applications Center
SGS - Space Gateway Support Contractor
EPA - Environmental Protection Agency

KSC - Kennedy Space Center
EMT - Emergency Medical Technician
PAFB - Patrick Air Force Base
BEE - Bioenvironmental Engineering Group
JPL - Jet Propulsion Laboratory
SSE - System Safety Engineer (Spacecraft)