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PE NUMBER: 0604851F
 PE TITLE: ICBM - EMD

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2005
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604851F ICBM - EMD
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Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	153.623	90.880	32.415	0.000	0.000	0.000	0.000	0.000	0.000	480.794
133B Rapid Execution & Combat Targeting (REACT)	21.025	16.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	68.136
4371 Safety Enhanced Reentry Vehicle (SERV) Program	63.783	52.903	26.564	0.000	0.000	0.000	0.000	0.000	0.000	231.183
4788 PSRE Life Extension Program	9.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	69.057
4823 ECS Replacement Program	13.491	16.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	37.044
5007 GPS Metric Tracking Capability	11.639	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.660
5037 Support Equipment	15.471	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.124
5080 ICBM Security	19.123	5.616	5.851	0.000	0.000	0.000	0.000	0.000	0.000	30.590

(U) A. Mission Description and Budget Item Justification

ICBM modernization efforts will ensure the extension of the operational life of the Minuteman III Intercontinental Ballistic Missile (ICBM) weapon system through 2020.

The Rapid Execution and Combat Targeting (REACT) Program designs and develops the modifications to the weapon system control consoles to correct launch readiness deficiencies.

The Safety Enhanced Reentry Vehicle (SERV) Program designs, develops, and tests the modifications necessary to adapt the Minuteman III Reentry System to accommodate the MK 21 Reentry Vehicle.

The Propulsion System Rocket Engine (PSRE) Life Extension Program (LEP) designs and develops the components necessary to refurbish the Minuteman III post-boost vehicle to correct age-related degradations.

The Environmental Control System (ECS) Replacement Program designs and develops the modifications necessary to refurbish, update, and/or replace components of the current Minuteman III ECS in the Launch Facilities (LFs) and Missile Alert Facilities (MAFs).

The Global Positioning System (GPS) Metric Tracking Capability Program designs and develops the modifications to the Minuteman III Range Instrumentation/Safety Wafer needed to use GPS for obtaining real-time position data to meet test range safety requirements.

The ICBM Support Equipment project designs and develops items used to maintain/modernize the Minuteman III weapons systems base, depot, launch control, and missile test capabilities.

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The ICBM Security Program designs and develops the components necessary to counter emerging threats and vulnerabilities identified in the Security Review Document.

All of these modernization programs are designed to keep the Minuteman III weapon system at its required availability and reliability levels through 2020.

This program is in Budget Activity 05 because the projects are being developed for the Air Force but have not received production approval.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	172.713	91.687	32.245	0.000
(U) Current PBR/President's Budget	153.623	90.880	32.415	0.000
(U) Total Adjustments	-19.090	-0.807		
(U) Congressional Program Reductions	0.000	0.000		
Congressional Rescissions	0.000	-0.807		
Congressional Increases				
Reprogrammings	-10.280			
SBIR/STTR Transfer	-8.810			
(U) <u>Significant Program Changes:</u>				
None in FY05, None in FY06				

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT NUMBER AND TITLE 133B Rapid Execution & Combat Targeting (REACT)		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
133B Rapid Execution & Combat Targeting (REACT)	21.025	16.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	68.136
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Rapid Execution and Combat Targeting (REACT) Service Life Extension Program (SLEP) will modify the 50 Minuteman (MM) III Launch Control Centers (LCCs), Weapon System Control Consoles (WSCC) and the 19 other trainer and test facilities that support the MM III Weapon System. Hardware changes include upgrading the Embedded Memory Array Dynamic (EMAD) Card, replacing the Visual Display Units (VDU), and replacing the Head Disk Assembly (HDA) with current technology. The Console Operation Program (COP) software will be modified to correct identified deficiencies currently deployed to the warfighter and will be independently tested to provide Nuclear Surety Cross Check Analysis (NSCCA).

This document is for the RDT&E phase of REACT. The production phase is budgeted under (old and new) Modification # 3413, PE 0101213F.

FY05 was the last year for development funding.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue development of COP software, HDA hardware, VDU hardware and EMAD hardware. Complete development of VDU, EMAD in 2004 and HDA in 2005	17.179	13.564		
(U) Continue NSCCA on COP software, complete in 2005	3.369	2.193		
(U) Provide other government support	0.477	0.344		
(U) Total Cost	21.025	16.101	0.000	0.000

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2004</u> <u>Actual</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) Other APPN Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, REACT, Mod #3413) (BA-03, P-011) BP21	13.060	13.853	0.119	0.000	0.000	0.000	0.000	0.000	0.000	39.235

NOTE: Procurement data above is only for items being procured as a result of the current RDT&E effort, not total procurement from REACT Program inception.

(U) D. Acquisition Strategy

A Cost Plus Award Fee (CPAF) contract addendum was added to the ICBM Prime Integration Contract in the 3QFY02 for everything but the Nuclear Safety Cross Check

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133B Rapid Execution & Combat Targeting (REACT)

Analysis (NSCCA) effort which was contracted for separately under a CPAF contract.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE					
05 System Development and Demonstration (SDD)				0604851F ICBM - EMD						133B Rapid Execution & Combat Targeting (REACT)					
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>	
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman, Clearfield, UT	27.841	17.179	Jan-04	13.564	Jan-05	0.000		0.000		0.000	58.584		
Subtotal Product Development			27.841	17.179		13.564		0.000		0.000		0.000	58.584	0.000	
Remarks:															
(U) <u>Support</u> NSCCA	CPAF	Logicon (Northrop Grumman), San Pedro, CA	2.494	3.369	Jan-04	2.193	Jan-05	0.000		0.000		0.000	8.056		
SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, UT	0.675	0.477	N/A	0.344	N/A					0.000	1.496		
Subtotal Support			3.169	3.846		2.537		0.000		0.000		0.000	9.552	0.000	
Remarks:															
(U) <u>Test & Evaluation</u> None						0.000		0.000		0.000			0.000		
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) Total Cost			31.010	21.025		16.101		0.000		0.000		0.000	68.136	0.000	

Exhibit R-4, RDT&E Schedule Profile

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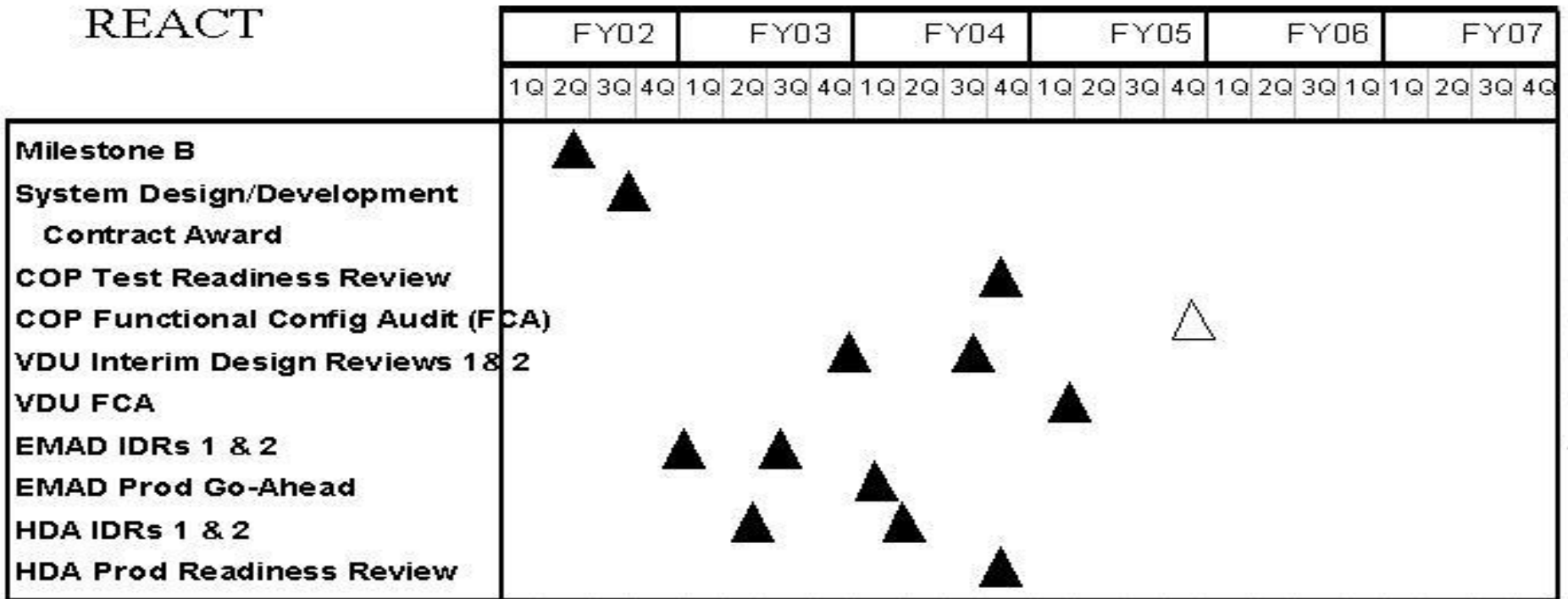
PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

133B Rapid Execution & Combat Targeting (REACT)

REACT



COP = Console Operations Program
 EMAD = Embedded Memory Array Dynamic
 HDA = Head Disk Assembly
 VDU = Visual Display Unit

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(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Video Display Unit (VDU) Interim Design Review (IDR) 2	3Q			
(U) Console Operations Program (COP) Test Readiness Review (TRR)	4Q			
(U) Visual Display Unit Functional Configuration Audit (FCA)		1Q		
(U) COP Functional Configuration Audit (FCA)		4Q		
(U) Head Disk Assembly (HDA) IDR 2	1Q			
(U) HDA Production Readiness Review (PRR)	4Q			

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT NUMBER AND TITLE 4371 Safety Enhanced Reentry Vehicle (SERV) Program		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4371 Safety Enhanced Reentry Vehicle (SERV) Program	63.783	52.903	26.564	0.000	0.000	0.000	0.000	0.000	0.000	231.183
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The SERV program will modify the Minuteman III (MMIII) Reentry System (RS) to accept the Peacekeeper MK21 warhead, thus keeping the newest and safest warhead in the inventory. The MK21 will be deployed on MM III prior to the phase out of the MK12 warhead which is being driven by the pending decertification of this warhead by the Department of Energy (DOE). The SERV will modify the RS to accommodate differences in electrical and mechanical interfaces, system software, support equipment, and trainers along with nuclear surety and human intent certification. Test articles will be developed to support development and qualification testing, flight testing, systems integration, and weapon system-level testing. This document is for the RDT&E phase of SERV. The production phase is budgeted under Modification # 5911, PE 0101213F.

This program is in Budget Activity 05 because it is being developed for the Air Force but has not yet received full production approval.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue design of the MM III airborne vehicle equipment (AVE) hardware and software needed for the MK21 RV	21.969	13.685	6.311	
(U) Continue development of the MM III command and launch equipment software needed for the MK21 RV	7.295	7.350	0.000	
(U) Continue NSCCA on SERV software	7.127	5.620	0.000	
(U) Continue design of the MM III support equipment needed for the MK21 RV	14.324	1.691	0.000	
(U) Continue system test and evaluation for all newly designed/developed hardware/software	10.286	12.181	5.220	
(U) Continue development of trainers/training needed for employing the MK21 RV on the MM III	2.482	2.971	1.451	
(U) Conduct initial flight testing	0.000	9.205	13.282	
(U) Provide other government support	0.300	0.200	0.300	
(U) Total Cost	63.783	52.903	26.564	0.000

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN Missile Procurement - AF										
(U) (PE 0101213F, Minuteman Squadrons, MM III)	20.286	55.135	60.530	67.304	64.882	48.300	0.000	0.000	0.000	316.437

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4371 Safety Enhanced Reentry
Vehicle (SERV) Program**(U) C. Other Program Funding Summary (\$ in Millions)**

Modifications, Safety
Enhanced Reentry Vehicle,
Mod #5911) (BA-03, P-012)

(U) D. Acquisition Strategy

A Cost Plus Incentive Fee with Award Fee (CPIF/AF) contract addendum was added to the ICBM Prime Integration Contractor (IPIC) for everything but the Nuclear Safety Cross Check Analysis (NSCCA) effort which was contracted for separately under a CPAF contract.

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(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPIF/AF	Northrop Grumman, Clearfield, UT	77.405	56.356	Jan-04	37.878	Dec-04	17.417	Jan-06	0.000		0.000	189.056	
Subtotal Product Development			77.405	56.356		37.878		17.417		0.000		0.000	189.056	0.000
Remarks:														
(U) <u>Support</u> NSCCA	CPAF	Logicon, San Pedro, CA	8.978	7.127	Jan-04	5.620	Jan-05	0.000	N/A	0.000		0.000	21.725	
SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, UT	1.550	0.300		0.200	N/A	0.300	N/A			0.000	2.350	
Subtotal Support			10.528	7.427		5.820		0.300		0.000		0.000	24.075	0.000
Remarks:														
(U) <u>Test & Evaluation</u> Vandenberg AFB	Project Order	Air Force test team at Vandenberg AFB CA (AFOTEC, A FSPC, 576th Flight Test Sq, DOE)		0.000	0	9.205	N/A	8.847	N/A	0.000		0.000	18.052	
None				0.000	0.000	9.205		8.847		0.000		0.000	18.052	0.000
Subtotal Test & Evaluation			0.000	0.000		9.205		8.847		0.000		0.000	18.052	0.000
Remarks:														
(U) <u>Management</u>				0.000	0.000	0.000		0.000		0.000		0.000	0.000	0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			87.933	63.783		52.903		26.564		0.000		0.000	231.183	0.000

Exhibit R-4, RDT&E Schedule Profile

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0604851F ICBM - EMD

PROJECT NUMBER AND TITLE
4371 Safety Enhanced Reentry Vehicle (SERV) Program

Safety Enhanced Reentry Vehicle Program

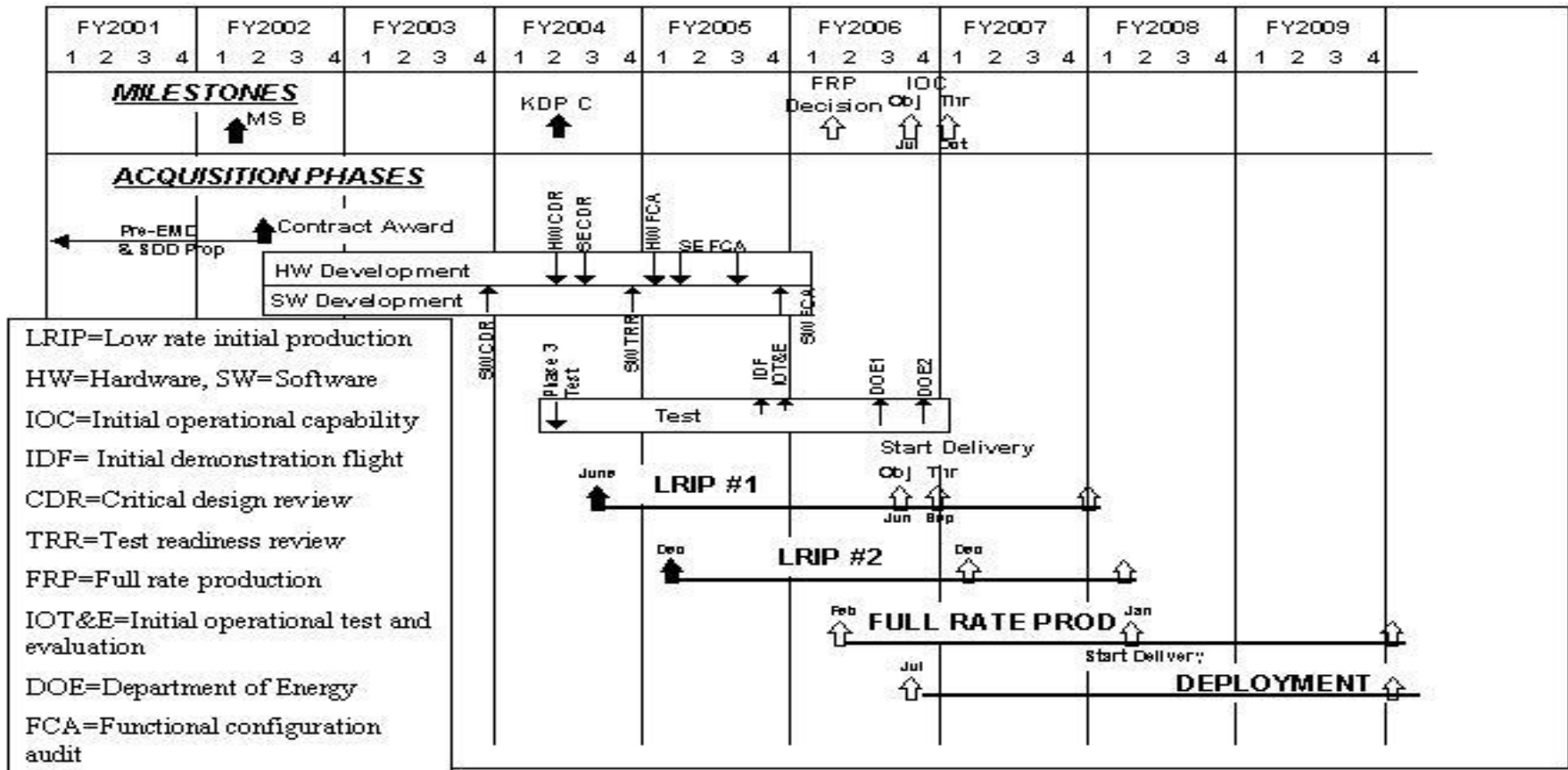


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PROJECT NUMBER AND TITLE

4371 Safety Enhanced Reentry Vehicle (SERV) Program

(U) **Schedule Profile**

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Support Equipment Critical Design Review (CDR)	2Q			
(U) Airborne Vehicle Equipment (AVE) CDR	2Q			
(U) Phase 3 Test Execution	2Q			
(U) Software Test Readiness Review (TRR)	4Q			
(U) AVE Functional Configuration Audit		1Q		
(U) Initial Demonstration Flight		3Q		
(U) Flight Test #2		4Q		
(U) Department of Energy Flight Test #1			3Q	
(U) Initial Operating Capability			4Q	

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT NUMBER AND TITLE 4788 PSRE Life Extension Program		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4788 PSRE Life Extension Program	9.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	69.057
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**
 The Propulsion System Rocket Engine (PSRE) Life Extension Program will refurbish the Minuteman (MM) III post-boost vehicle (PBV) propulsion system. This refurbishment will correct age-related degradations, reduce life cycle costs, and support MM III life extension while maintaining existing weapon system reliability. Deficiencies identified (e.g., relief valve aging, titanium pressure sensing (pressure chamber) PC tube cracking, and fuel flex line cracks) may cause system failure/loss of performance and, in turn, potential mission failure. Other deficiencies (e.g., staging connector aging and actuator motor performance) will impact weapon system availability in addition to reducing system performance.
 RDT&E efforts will identify replacement materials for those no longer available or which have become environmentally unacceptable. The program will then design/develop components and manufacturing processes necessary to correct the identified deficiencies. This document is for the RDT&E phase of PSRE Life Extension Program. The production phase is budgeted under modification # 5768, PE 0101213F.
 FY04 was the last year for development funding.
 This program is in Budget Activity 05 because it is being developed for the Air Force but has not yet received full production approval.

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>				
(U) Completed dynamics test firings results, Functional Configuration Audit and Production Readiness Review	4.727			
(U) Completed various activities: technician labor activities to include disassembly/reassembly of PSRE and selected subsystems: maintenance and repair of program unique depot support equipment, special test equipment, and program office support	4.124			
(U) Finished other government support	0.240			
(U) Total Cost	9.091	0.000	0.000	0.000

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, PSRE Life Extension, Mod #5768)	13.247	13.598	19.110	19.720	25.640	27.130	25.483	28.002	0.000	171.930

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4788 PSRE Life Extension Program**(U) C. Other Program Funding Summary (\$ in Millions)**

(BA-03, P-011)

(U) D. Acquisition Strategy

The PSRE Life Extension Program is being conducted under the ICBM Prime Integration Contractor (IPIC) and a joint refurbishment effort with the government depot.

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(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman, Clearfield, UT	43.619	4.727	Jan-04	0.000		0.000		0.000		0.000	48.346	
Subtotal Product Development Remarks:			43.619	4.727		0.000		0.000		0.000		0.000	48.346	0.000
(U) <u>Support</u> SPO/Other Program Support	WR	ICBM SPO and Depot, Hill AFB, UT	14.347	4.364	N/A	0.000		0.000		0.000		0.000	18.711	
Subtotal Support Remarks:			14.347	4.364		0.000		0.000		0.000		0.000	18.711	0.000
(U) <u>Test & Evaluation</u> White Sands Test Facility (WSTF)	Project Order	US Army, White Sands, NM	2.000	0.000	N/A	0.000		0.000		0.000		0.000	2.000	
Subtotal Test & Evaluation Remarks:			2.000	0.000		0.000		0.000		0.000		0.000	2.000	0.000
(U) <u>Management</u> Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) Total Cost			59.966	9.091		0.000		0.000		0.000		0.000	69.057	0.000

Exhibit R-4, RDT&E Schedule Profile

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PROJECT NUMBER AND TITLE

4788 PSRE Life Extension Program

Propulsion System Rocket Engine

TASK	FY02				FY03				FY04				FY05				FY06				FY07				FY08				FY09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contract Award (1Q00)																																
PDR (4Q00)																																
CDR (1Q02)													▲																			
Qual 1 and 2 Test Firings (3QFY04)													▲	▲																		
PRR/FCA (3QFY04, 1QFY05)													▲		▲																	
PCA 1QFY05															▲																	
Production																																

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Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2005

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

4788 PSRE Life Extension Program

(U) Schedule Profile

- (U) Low Rate Production Decision
- (U) Qualification Test Fire #1
- (U) Qualification Test Fire #2
- (U) Production Readiness Review
- (U) Functional Configuration Audit
- (U) Physical Configuration Audit

FY 2004

FY 2005

FY 2006

FY 2007

2Q

3Q

3Q

3Q

1Q

1Q

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT NUMBER AND TITLE 4823 ECS Replacement Program		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4823 ECS Replacement Program	13.491	16.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	37.044
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Minuteman III Environmental Control System (ECS) Replacement Program will replace the failing 1960's ECS equipment. The existing ECS is adversely affecting weapon system availability as well as driving increased support costs due to high failure rates, non-availability of replacement parts, and a lack of diagnostic capabilities. This program will replace the existing ECS equipment in MM III Launch Facilities (LFs), Missile Alert Facilities (MAFs), and test and trainer sites with modern equipment to extend the life of ECS to 2020. This document is for the RDT&E phase of ECS. The production phase is budgeted under Modification #5739, PE 0101213F.

FY05 was the last year for development funding.

This program is in Budget Activity 05 because it is being developed for the Air Force but has not yet received production approval.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Provide other government support	0.698	0.556		
(U) Continued design/development, qualification and testing of ECS components	6.500			
(U) Designed and fabricated test components	4.201			
(U) Continued identification and compilation of system data requirements	2.092			
(U) Complete design and development of ECS components		2.375		
(U) Complete test and evaluation of ECS components		11.795		
(U) Complete diagnostics and retest efforts		1.534		
(U) Total Cost	13.491	16.260	0.000	0.000

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, Environmental Control System Modification, Mod #5739) (BA-03, P-011)	0.000	0.000	30.208	62.850	62.579	62.456	61.802	5.031	0.000	284.926

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

4823 ECS Replacement Program

(U) **D. Acquisition Strategy**

The ECS Replacement Program is being conducted under the ICBM Prime Integration Contractor (IPIC). The effort will be completed on a Cost Plus Award Fee (CPAF) contract.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

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BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT NUMBER AND TITLE			
05 System Development and Demonstration (SDD)				0604851F ICBM - EMD							4823 ECS Replacement Program			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman, Clearfield, UT	6.693	12.802	Jan-04	15.704	Jan-05	0.000		0.000		0.000	35.199	
Subtotal Product Development Remarks:			6.693	12.802		15.704		0.000		0.000		0.000	35.199	0.000
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, UT	0.600	0.689	N/A	0.556	N/A	0.000		0.000		0.000	1.845	
Subtotal Support Remarks:			0.600	0.689		0.556		0.000		0.000		0.000	1.845	0.000
(U) <u>Test & Evaluation</u> None None			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) <u>Management</u> Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
(U) Total Cost			7.293	13.491		16.260		0.000		0.000		0.000	37.044	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

4823 ECS Replacement Program

ICBM Environmental Control System

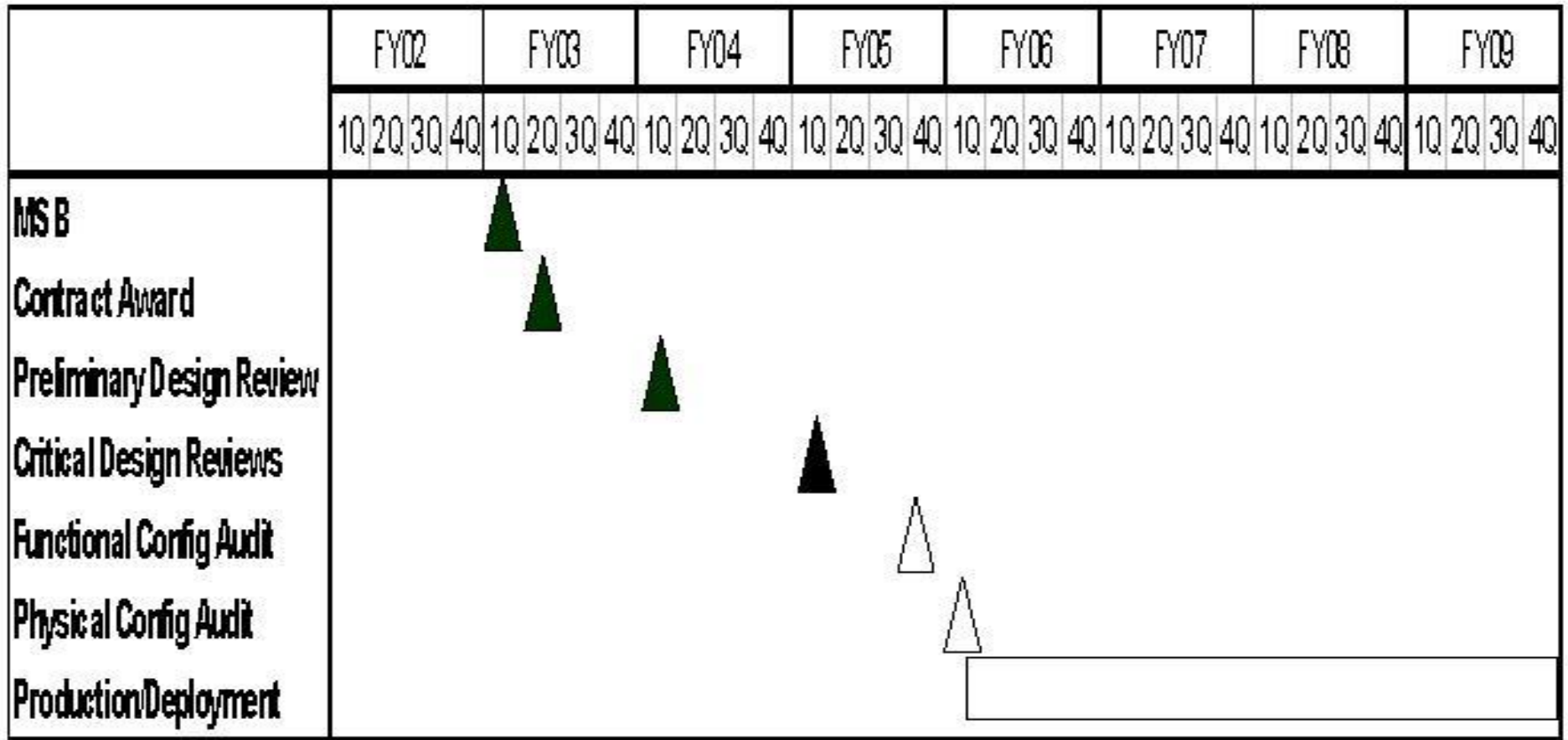


Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT NUMBER AND TITLE 4823 ECS Replacement Program
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	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Schedule Profile				
(U) Preliminary Design Review	1Q			
(U) Critical Design Review		1Q		
(U) Functional Configuration Audit		4Q		
(U) Physical Configuration Audit			1Q	

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT NUMBER AND TITLE 5007 GPS Metric Tracking Capability		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5007 GPS Metric Tracking Capability	11.639	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.660
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

The GPS Metric Tracking (GPS MT) program will develop a certified GPS tracking and range safety capability to replace the current C-Band transponder radar which is scheduled for retirement (FY05). This program will develop, modify, test and flight certify the necessary GPS hardware to be integrated onto the Mod 7 Flight Instrumentation package to support flight test operations of the Minuteman III weapon system. The GPS MT system will provide range operations with near instantaneous time/space position information and flight profile data required to safely conduct launch operations. This document is for the RDT&E phase of GPS MT. The production phase is budgeted under Modification #5799, PE 0101213F.

FY04 was the last year for development funding.

This program is in Budget Activity 05 because it is being developed for the Air Force but has not yet received production approval.

(U) **B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Completed design and development of GPS MT hardware and software and design related support equipment	9.574			
(U) Completed other government support	2.065			
(U) Total Cost	11.639	0.000	0.000	0.000

(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2004</u> <u>Actual</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) Other APPN Missile Procurement - AF (PE 11213F, Minuteman Squadrons, MM III Modifications, GPS Metric Tracking Program, Mod #5799) (BA-03, P-011)	2.981	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.772

(U) **D. Acquisition Strategy**

A Cost Plus Award Fee (CPAF) contract addendum was added to the ICBM Prime Integration Contract 3rd Qtr of FY02.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
05 System Development and Demonstration (SDD)	0604851F ICBM - EMD	5007 GPS Metric Tracking Capability

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman, Clearfield, UT	7.595	9.574	Jan-04	0.000		0.000		0.000		0.000	17.169	
Subtotal Product Development			7.595	9.574		0.000		0.000		0.000		0.000	17.169	0.000
Remarks:														
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, CA	0.710	0.065	N/A	0.000		0.000		0.000		0.000	0.775	
Subtotal Support			0.710	0.065		0.000		0.000		0.000		0.000	0.775	0.000
Remarks:														
(U) <u>Test & Evaluation</u> Vandenberg integration and launch	MIPR	USAF Vandenberg AFB CA (576th Test Sq)	0.716	2.000	N/A	0.000		0.000		0.000		0.000	2.716	
Subtotal Test & Evaluation			0.716	2.000		0.000		0.000		0.000		0.000	2.716	0.000
Remarks:														
(U) <u>Management</u>								0.000		0.000			0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			9.021	11.639		0.000		0.000		0.000		0.000	20.660	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

5007 GPS Metric Tracking Capability

GPS Metric

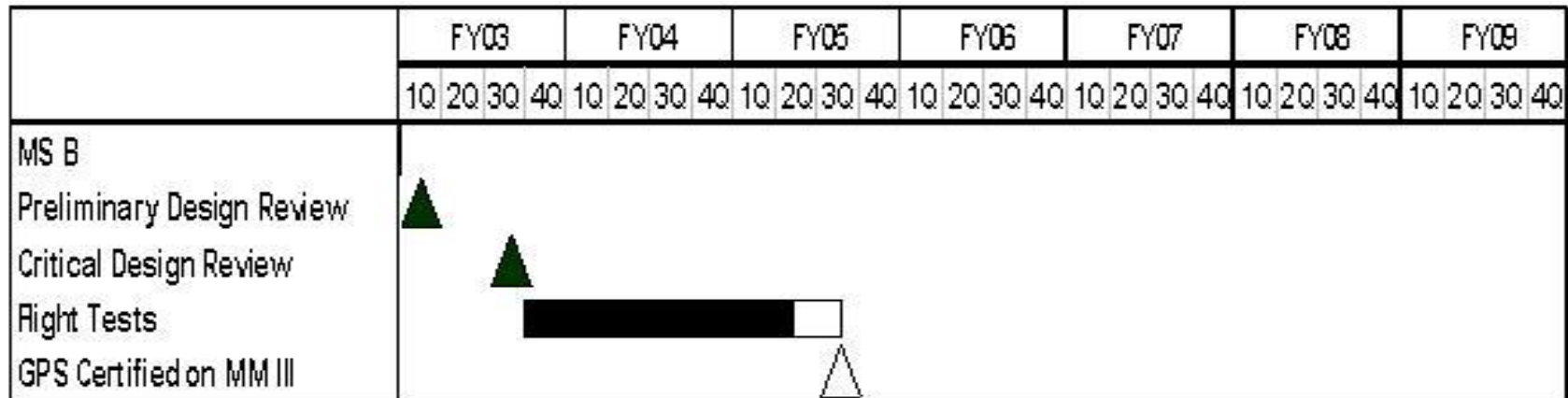


Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT NUMBER AND TITLE 5007 GPS Metric Tracking Capability
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	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Schedule Profile				
(U) Certification Flight Test #1	2Q			
(U) Certification Flight Test #2	3Q			
(U) Certification Flight Test #3	4Q			
(U) GPS Metric Certified on Minuteman III		3Q		

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT NUMBER AND TITLE 5037 Support Equipment		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5037 Support Equipment	15.471	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.124
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The ICBM Support Equipment efforts will design and develop support equipment and various components required to sustain Minuteman III system reliability and maintainability and to also restore minimum maintenance and testing capabilities. Equipment to support the guidance system (Gyro Stabilized Platform {GSP} Fine Balance test set, GI-T1-B gyro drift test set, and guidance repair stations) will be designed and developed. The existing Reentry Vehicle Test Set Low Frequency Instrument Console (LFIC) emulator will also begin design. Lastly, Air Force Safety Board recommendations to protect against power surges in the Minuteman III Missile Alert Facility (MAF) and Launch Facility (LF) electrical systems will be implemented by adding protection to ground support equipment.

FY04 was the last year for development funding.

This program is in Budget Activity 05 because it is being developed for the Air Force but has not yet received production approval.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continued and complete design and development activities for the GSP Fine Balance and GI-T1-B test sets	10.348			
(U) Provided other government support	0.105			
(U) Designed, developed, and planned test and qualification for the guidance repair stations (instrument build).	2.868			
(U) Begin and complete design and development for Surge Protection equipment	1.400			
(U) Began design on Reentry Vehicle Test Set Low Frequency Instrument Console (LFIC)	0.750			
(U) Total Cost	15.471	0.000	0.000	0.000

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2004</u> Actual	<u>FY 2005</u> Estimate	<u>FY 2006</u> Estimate	<u>FY 2007</u> Estimate	<u>FY 2008</u> Estimate	<u>FY 2009</u> Estimate	<u>FY 2010</u> Estimate	<u>FY 2011</u> Estimate	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) Other APPN 3020 Funds, Missile Procurement-AF (PE 0101213F) , BP2100, Minuteman III Modifications, Minuteman Surge Protection, Mod # 5912 (BA-03, P-011)	1.802	3.828	4.822	4.841	2.886	0.000	0.000	0.000	0.000	18.179

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

5037 Support Equipment

(U) D. Acquisition Strategy

The Support Equipment Program is being conducted under the ICBM Prime Integration Contract (IPIC) via a Cost Plus Award Fee (CPAF) contract. The LFIC portion is a Cost Plus Fixed Fee.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT NUMBER AND TITLE				
05 System Development and Demonstration (SDD)				0604851F ICBM - EMD							5037 Support Equipment				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>	
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman Clearfield, UT	8.488	14.616	Jan-04	0.000	N/A	0.000		0.000		0.000	23.104		
LFIC	CPFF	Lockheed Martin, Valley Forge, PA	0.000	0.750	Apr-04	0.000		0.000		0.000		0.000	0.750		
Subtotal Product Development Remarks:			8.488	15.366		0.000		0.000		0.000		0.000	23.854	0.000	
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, UT	0.165	0.105	N/A	0.000	N/A	0.000		0.000		0.000	0.270		
Subtotal Support Remarks:			0.165	0.105		0.000		0.000		0.000		0.000	0.270	0.000	
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
(U) <u>Management</u> Subtotal Management Remarks:			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
(U) Total Cost			8.653	15.471		0.000		0.000		0.000		0.000	24.124	0.000	

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

5037 Support Equipment

ICBM Support Equipment

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	
Cont Award (Test Sets)	▲							
Cont Awards (other efforts)		▲▲						
Guid Repair Station PDR		▲						
GSP FB Test Set CDR		▲						
GI-T1-B Test Set CDR		▲						
Surge Protect CDR		▲						
Guid Repair Station CDR			△					
LFIC Emulator Completion				△				
Procurement		■						

PRD = Preliminary Design Review
 CDR = Critical Design Review
 GSP FB = Gyro Stabilized Platform Fine Balance
 LFIC = Low Frequency Instrument Console

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Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604851F ICBM - EMD

PROJECT NUMBER AND TITLE

5037 Support Equipment

(U) Schedule Profile

(U) Gyro Stabilized Platform Fine Balance test set Critical Design Review (CDR)

FY 2004

2Q

FY 2005

FY 2006

FY 2007

(U) GI-T1-B test set CDR

3Q

(U) Contract Award for, Surge Protect, and Guidance Repair

3Q

(U) Surge Protection CDR

4Q

(U) Guidance Repair Station Preliminary Design Review

4Q

(U) Guidance Repair Station CDR

2Q

(U) Award Low Frequency Instrument Console Emulator contract

3Q

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT NUMBER AND TITLE 5080 ICBM Security		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5080 ICBM Security	19.123	5.616	5.851	0.000	0.000	0.000	0.000	0.000	0.000	30.590
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The ICBM Security program will design and develop the features necessary to modernize launch facility (LF) security systems. Modernized ICBM security systems will mitigate emerging threat technologies and methods, and will address the potential vulnerabilities identified in Air Force security reviews.

This document is for the RDT&E phase of ICBM Security and is in Budget Activity 05. The Production portion of the program is under PE 0101213F.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Component design, development and evaluation	18.946	5.456	5.681	
(U) Provide other government support	0.177	0.160	0.170	
(U) Total Cost	19.123	5.616	5.851	0.000

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement AF, PE 0101213F, Minuteman Squadrons, MMIII Modifications, ICBM Security, Mod 5914 (BA-03, P-012)	0.596	47.954	40.924	76.078	71.528	66.294	53.559	26.997	6.420	390.350

(U) D. Acquisition Strategy

The Security effort will be managed under a CPAF contract with the ICBM Prime Integration Contractor (IPIC).

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Exhibit R-3, RDT&E Project Cost Analysis

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February 2005

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE				
05 System Development and Demonstration (SDD)				0604851F ICBM - EMD						5080 ICBM Security				
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> ICBM Prime Integration Contract	CPAF	Northrop Grumman, Clearfield, UT	0.000	18.946	Jan-04	5.456	Jan-05	5.681	Jan-06	0.000		0.000	30.083	
Subtotal Product Development			0.000	18.946		5.456		5.681		0.000		0.000	30.083	0.000
Remarks:														
(U) <u>Support</u> SPO/Other Program Support	Various	ICBM Program Office, Hill AFB, UT	0.000	0.177	N/A	0.160	N/A	0.170	N/A	0.000		0.000	0.507	
Subtotal Support			0.000	0.177		0.160		0.170		0.000		0.000	0.507	0.000
Remarks:														
(U) <u>Test & Evaluation</u>														
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) <u>Management</u>														
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			0.000	19.123		5.616		5.851		0.000		0.000	30.590	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

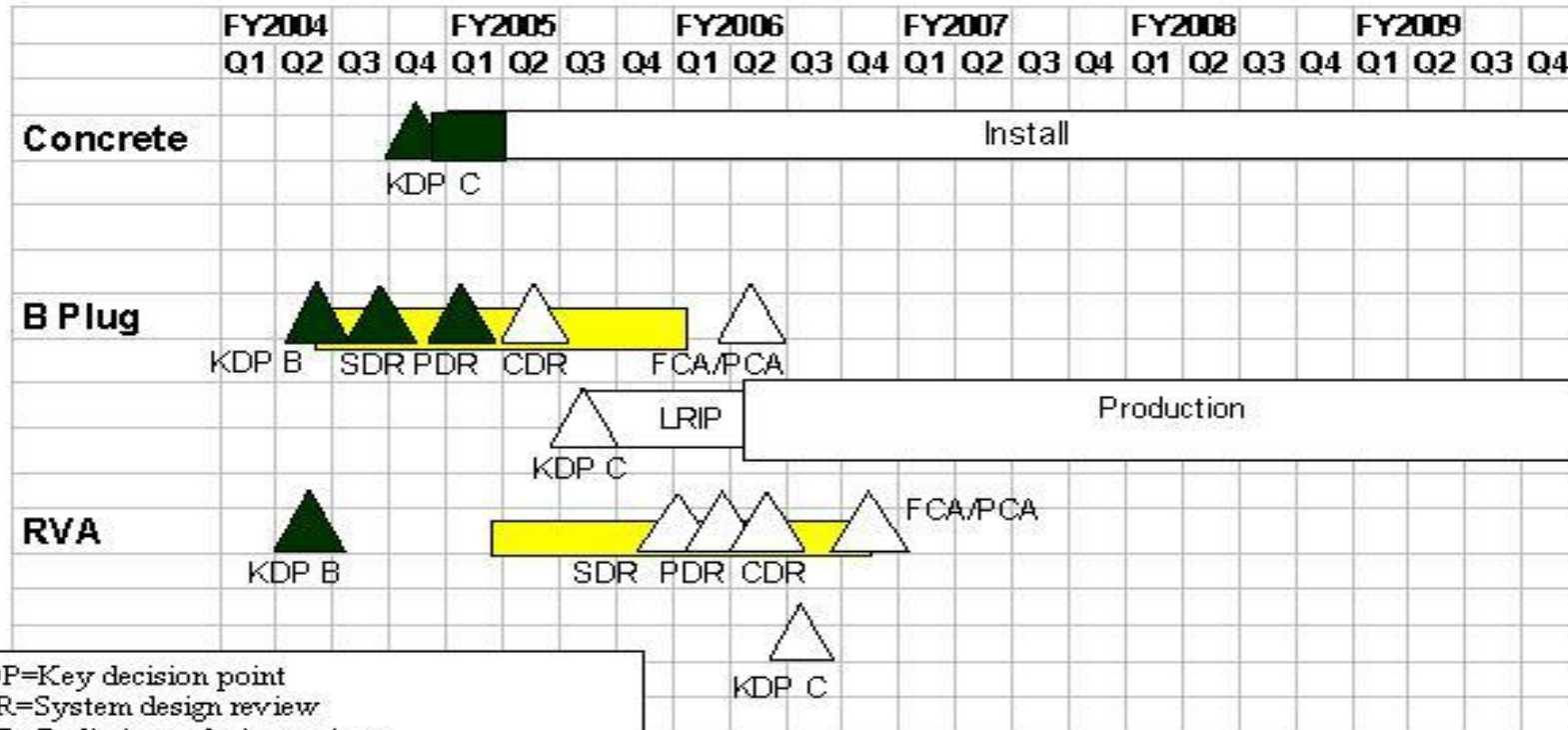
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BUDGET ACTIVITY
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604851F ICBM - EMD

PROJECT NUMBER AND TITLE
5080 ICBM Security

ICBM Security



KDP=Key decision point
 SDR=System design review
 PDR=Preliminary design review
 CDR=Critical design review
 FCA/PCA=Functional/Physical configuration audit
 LRIP=Low rate initial production
 RVA=Remote visual assessment

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2005
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT NUMBER AND TITLE 5080 ICBM Security
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	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Schedule Profile				
(U) Contract Award B-Plug	2Q			
(U) Contract Award Remote Visual Assessment (RVA)	2Q			
(U) Preliminary Design Review B Plug		1Q		
(U) Critical Design Review B Plug		2Q		
(U) Functional Configuration Audit B Plug			2Q	
(U) Preliminary Design RVA			1Q	
(U) Critical Design Review RVA			2Q	
(U) Functional Configuration Audit RVA			4Q	