PE NUMBER: 0604851F PE TITLE: ICBM - EMD

	RDT&E BUDGET ITEM	I JUSTI	FICATI	ON SH	EET (R	-2 Exhi	bit)		DATE	June 2001		
=	T ACTIVITY Engineering and Manufacturing De	evelopme	ent		UMBER AND 14851F	O TITLE CBM - E	MD					
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
	Total Program Element (PE) Cost	36,096	18,157	81,086	109,545	86,033	48,966	19,892	0	Continuing	TBD	
133B	Rapid Execution & Combat Targeting (REACT)	0	0	5,255	20,711	15,767	14,063	0	0	0	55,796	
4210	Propulsion Replacement Program (PRP)	27,919	0	0	0	0	0	0	0	0	328,325	
4371	Safety Enhanced Reentry Vehicle (SERV) Program	0	0	52,406	64,332	56,231	34,903	19,892	0	0	227,764	
4788	PSRE Life Extension Program	8,177	18,157	19,425	12,481	0	0	0	0	0	58,240	
4823	ECS Replacement Program	0	0	0	12,021	14,035	0	0	0	0	26,056	
5007	GPS Metric Tracking Capability	0	0	4,000	0	0	0	0	0	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	3	3	3	0	0	0	0	9	

FY01: Notification of Completion for the Propulsion Replacement Program, BPAC 654210, provided with FY01 President's Budget Submission. FY02:

- Rapid Execution & Combat Targeting (REACT), BPAC 65133B, previously identified as a new start in the FY01 President's Budget Submission
- Safety Enhanced Reentry Vehicle (SERV) Program, BPAC 654371
- -- SERV is a new start initiated with this President's Budget Submission.
- -- RDT&E articles identified support the SERV Program. See Program Exhibit R-2A for details.
- Global Positioning System (GPS) Metric Tracking Program, BPAC 655007, is a new start initiated with this President's Budget Submission. FY03 FY07:

This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

Page 1 of 24 Pages

Exhibit R-2 (PE 0604851F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

05 - Engineering and Manufacturing Development

0604851F ICBM - EMD

(U) A. Mission Description

ICBM modernization efforts will extend the operational life of the Minuteman ICBM weapon system. Rapid Execution and Combat Targeting (REACT), which will begin its System Development and Demonstration (SDD) effort in FY02, will correct REACT security alarm management system and launch readiness deficiencies. The Safety Enhanced Reentry Vehicle (SERV) Program, which enters SDD in FY02, will design, develop, and test the modifications necessary to adapt the Minuteman III Reentry System to accommodate the Mk 21 Reentry Vehicle. The Global Positioning System (GPS) Metric Tracking Capability Program will design and develop the modifications to the Minuteman III Range Safety Wafer to use GPS for obtaining real-time flight data on the Minuteman performance to meet range safety and flight test objectives. The Environmental Control System (ECS) Replacement Program, which enters SDD in FY03, will refurbish, update, and/or replace components of the Minuteman ECS in the Launch Facilities (LFs) and Missile Alert Facilities (MAFs). The Propulsion System Rocket Engine (PSRE) Life Extension Program (LEP), which entered Engineering Manufacturing and Development (EMD) in FY00, refurbishes the Minuteman post-boost vehicle (PBV) to correct age-related degradations. The Propulsion Replacement Program (PRP), which completed EMD in FY00, remanufactures all three Minuteman solid fuel stages to correct age-related degradations.

Requirements for maintaining the Minuteman Weapon System are defined and validated in current defense planning guidance documentation. All of these modernization programs are designed to keep the Minuteman Weapon System at least at its required availability and reliability levels.

(U) B. Budget Activity Justification

This program is in Budget Activity 05 - Engineering and Manufacturing Development because the projects are being developed for the Air Force but have not received production approval. Program control is exercised at the project level.

(U) C. Program Change Summary (\$ in Thousands)

		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	38,235	18,325	43,659	956,932
(U)	Appropriated Value	38,804	18,325		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-302	-128		
	b. Small Business Innovative Research	-1,410			
	c. Omnibus or Other Above Threshold Reprogram	-8			
	d. Below Threshold Reprogram	-836			
	e. Rescissions	-152	-40		
(U)	Adjustments to Budget Years Since FY 2001 PBR			37,427	
(U)	Current Budget Submit/FY 2002 PBR	36,096	18,157	81,086	TBD

Page 2 of 24 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) BUDGET ACTIVITY 05 - Engineering and Manufacturing Development DATE June 2001 0604851F ICBM - EMD

- (U) C. Program Change Summary (\$ in Thousands) Continued
- (U) <u>Significant Program Changes:</u>

FY02:

- Safety Enhanced Reentry Vehicle (SERV) Program is a new start initiated with this President's Budget Submission.
- Global Positioning System (GPS) Metric Tracking Program is a new start initiated with this President's Budget Submission.
- Start of the Environmental Control System (ECS) Replacement Program was delayed from FY02 to FY03.
- Funding increase to support new starts identified above.

FY02 - FY07: Funding adjustments the result of restructuring the REACT Program and the addition of funding for the SERV Program. See specific R-2A Exhibits for details.

Total Cost: Total cost summary reflects the deletion of RDT&E funding for the Guidance Replacement Program which completed Engineering and Manufacturing Development (EMD) in FY99 and is no longer reported in the RDT&E Budget Item Justification.

Page 3 of 24 Pages Exhibit R-2 (PE 0604851F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit) DATE Ju											
	et ACTIVITY Engineering and Manufacturing De	ent		UMBER AND 14851F			PROJECT 133B					
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
133B	Rapid Execution & Combat Targeting (REACT)	0	0	5,255	20,711	15,767	14,063	0	0	0	55,796	

FY02: Identified as a new start in the FY01 President's Budget Submission.

FY03 - FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) A. Mission Description

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 and the 19 other trainer and test facilities which support the MM weapon system. REACT is extremely software dependent, and all the replacement hardware and its associated software must be integrated and tested to ensure complete system capability.

Hardware and software changes include modernizing and/or upgrading the Head Disk Assembly (HDA), the Visual Display Unit (VDU), the Embedded Memory Array Dynamic (EMAD) Card, and the REACT Console Operations Programs (COPs). Specifically, RDT&E funding will be used to design, develop, test, and qualify the new EMAD card as well as the software used to correct the identified deficiencies.

(U) FY 2000 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) FY 2001 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) FY 2002 (\$ in Thousands)

(U) \$4,098 Design, develop, test and qualify the new EMAD Card.

(U) \$1,000 Software Development (U) \$157 Other Program Costs

(U) \$5.255 Total

Project 133B Page 4 of 24 Pages Exhibit R-2A (PE 0604851F)

	RDT&E BUD	GET IT	EM JUS	TIFICAT	ION SH	EET (R-	2A Exhil	oit)]	June 2	001
	GET ACTIVITY - Engineering and Manu	facturing	g Develop	ment		NUMBER AND 04851F		/ID			PROJECT 133B
(U)	B. Project Change SummaryNew start identifieded in the IThe System Development and		_			ncorporate d	evelopment e	efforts previo	usly projecte	ed as MPAF.	
(U)	C. Other Program Funding Su	•	in Thousand								
		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	<u>FY 2007</u>	Cost to	<u>Total Cost</u>
(U)	Other APPN	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	Complete	
(U)	Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, REACT, Mod #3413) (BA-03, P-012)			14,051	15,243	15,269	7,196	125			51,884
(U)	D. Acquisition Strategy A Cost Plus Award Fee (CPAF)	modificatio	n to the ICBI	M Prime Inte	gration Cont	ract with effo	ort to begin in	ı Jan 02 is pla	anned.		
(U)	E. Schedule Profile										
						FY 2000		<u>FY 2</u>			2002
(U) (U) (U) (U)	SDD Contract Award EMAD Critical Design Review EMAD Test Readiness Review * - Completed Event X - Planned Event				1 2	2 3	4 1	2	3 4	1 2 X	3 4 X X
F	Project 133B				Page 5 of	24 Pages				Exhibit R-2A (P	E 0604851F)

	RDT&E PROC	GRAM ELE	MENT/P	ROJECT C	OST BI	REAKDO	WN (R-3))	DATE	June 2001	1
	GET ACTIVITY Engineering and Ma	nufacturing	Developr	ment		ER AND TITLE 51F ICBM ·	- EMD				PROJECT 133B
(U) (U) (U)	A. Project Cost Breakdown Design, Develop, Test, and C Software Development						FY 2	2000	<u>FY 200</u>	<u>)1</u>	<u>FY 2002</u> 4,098 1,000
(U) (U)	Other Program Costs Total										157 5,255
(U)	B. Budget Acquisition History	ory and Plannin	g Informatio	on (\$ in Thousand	<u>ls</u>)						
(U)	Performing Organizations: Contractor or Government	Contract Method/Type	Award or	<u>Performing</u>	<u>Project</u>						
	Performing Activity Product Development Organi	or Funding Vehicle	Obligation Date	Activity EAC	Office EAC	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	<u>Total</u> <u>Program</u>
	TRW Support and Management Or	C/CPAF	Jan 02	TBD	46,839				5,098	41,741	46,839
	NSCCA Other Government Costs Test and Evaluation Organiza	SS/CPAF TBD ations	Feb 03 Oct 02	TBD TBD	7,545 1,412				157	7,545 1,255	7,545 1,412
(U)	Government Furnished Pro	Contract Method/Type	Award or								
	Item Description Product Development Proper None Support and Management Pro None Test and Evaluation Property None	operty	Obligation Date	Delivery Date		Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	<u>Total</u> <u>Program</u>
Р	roject 133B			Pag	e 6 of 24 Pa	ges			Exhib	it R-3 (PE 06	604851F)

	RDT&E PROGRAM ELEMENT/PROJE	CT COST BREAKDO	DATE June 2001				
	GET ACTIVITY - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM	<u> </u>	F	PROJECT		
05 -	Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002 5,098 157 5,255	Budget to Complete 41,741 8,800 50,541	Tota Program 46,839 8,957
P	Project 133B	Page 7 of 24 Pages			Exhib	it R-3 (PE 06	04851F)

		ι	JNCLAS	SIFIED								
RDT&E BUDGET ITEM	JUSTIF	ICATIO	N SHE	ET (R-	2A Exh	ibit)		DATE	June 2	2001		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development PE NUMBER AND TITLE 0604851F ICBM - EMD 4210												
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost		
4210 Propulsion Replacement Program (PRP)	27,919	0	0	0	0	0	0	0	0	328,325		
 Notice of Completion provided with FY01 President's I FY03 - FY07: This administration has not addressed FY03 change. (U) A. Mission Description The Propulsion Replacement Program (PRP) remand support Minuteman life extension. Any of the 	Y 2003-200° nanufactures	7 requirements all three so	olid fuel sta	ges to corre	ect age-relat	ed degradat	ions, maint	ain existing	weapon sys	stem reliability,		

RDT&E efforts identified replacement materials that are no longer available or which have become environmentally unacceptable, reduce life cycle costs, and identify corrections to age-related degradations. Only changes that could be demonstrated in an appropriate timeframe to ensure Minuteman propulsion system continues to meet existing performance specifications while remaining viable and supportable were incorporated.

cause catastrophic motor failure and, in turn, mission failure. RDT&E efforts will identify replacement materials that are no longer available or which have become environmentally unacceptable, reduce life cycle costs, and identify corrections to age-related degradations. The project entered Engineering and Manufacturing

EV 2000 (\$ in Thousands)

Development in FY94 and finished in FY00.

No Activity - EMD Completed in FY00.

(U)	FY 2000 (\$ in Thousa	inds)
(U)	\$14,042	Completed component reuse and materials replacement studies, continue stage design and development to include refurbishment. Completed
		fabrication, tooling, and waste disposal for qualification motor testing.
(U)	\$12,257	Completed integration of program activities such as system engineering, program management, range support, AEDC testing, and booster
		disassembly/assembly and transportation.
(U)	\$1,620	Completed software modification.
(U)	\$27,919	Total
(U)	FY 2001 (\$ in Thousa	nds)
(U)	I I ZOOI (# III IIIOusa	ilus j

(U) \$0 Total

\$0

(U)

Project 4210 Exhibit R-2A (PE 0604851F) Page 8 of 24 Pages

	RDT&E BUI	DGET IT	EM JUS	TIFICAT	ION SH	EET (R-	2A Exhi	bit)		DATE Ju r	ne 2001	
	GET ACTIVITY • Engineering and Man	ufacturing	g Develop	oment		NUMBER AND 04851F I		/ID				OJECT 210
(U)	A. Mission Description Cont	inued										
(U) (U) (U)	FY 2002 (\$ in Thousands) \$0 No Act \$0 Total	ivity - EMD (Completed in	FY00.								
(U)	B. Project Change Summary No significant changes.	7										
(U)	C. Other Program Funding S	Summary (\$ i	in Thousand	<u>ls</u>)								
(II)	Other A DDN	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	-	<u>Total Cost</u>
(U) (U)	Other APPN Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, MM III Propulsion Replacement Program, Mod #5053) (BA-03, P-012)	90,120	138,155	276,418	262,081	269,102	264,470	282,359	291,243	301,602		2,175,550
(U)	D. Acquisition StrategyPlanned acquisition will consuclear certification analysis taAll PRP contracts, with the expression of the contracts of the contract of the contracts of the contract of th	sks; and inde	pendent softv	ware certifica	ation.	-						motors;
(U)	E. Schedule Profile											
						FY 2000 2 3	4 1	<u>FY 2</u>	001 3 4	1	FY 2002 2 3	4
(U) (U)	PROGRAM MILESTONESMilestone III DecisionFirst Year Low Rate Initial PSecond Year LRIP Contract	`	RIP) Contract	t Award	1 2	- 0	4 I	2	3 4 X		2 3	4
LP	roject 4210				Page 9 of	24 Pages				Exhibit R-2	A (PE 060	4851F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										June 2	001	
	GET ACTIVITY - Engineering and Manufacturing Development				ICBM	- EMD						PRO. 421	
(U)	E. Schedule Profile Continued	1	<u>FY</u> 2	2000 3	4	1	<u>FY</u> 2	2001 3	4	1	<u>FY</u> 2	2002 3	4
(U) (U)	Full Rate Production (FRP) Contract Award T&E MILESTONESCombined DT&E/IOT&E Flight TestDedicated IOT&E Flight Test * - Completed Event X - Planned Event	*	2	*	4		2	3	4	1 X		J	†
F	Project 4210	Page	10 of 24	Pages					[Exhibit I	R-2A (P	E 06048	351F)

	RDT&E PRO	GRAM ELE	MENT/P	ROJECT C	DATE June 2001						
	GET ACTIVITY • Engineering and Ma	anufacturing	Developm	nent		ER AND TITLE	- EMD				PROJECT 4210
(U)	A. Project Cost Breakdow	vn (\$ in Thousan	ds)								
(U)	Technology Insertion							2000 ,042	FY 200	<u>)1</u>	FY 2002
(U)	Software							,620			
(U)	Other Program Costs							,020 ,257			
(U)	Total							,919			
(U)	B. Budget Acquisition His	tory and Plannir	ng Information	n (\$ in Thousan	ds)			,			
(U)	Performing Organizations	S:	-								
(-)	Contractor or	<u>Contract</u>									
	Government	Method/Type	Award or	Performing	Project						
	Performing	or Funding	<u>Obligation</u>	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 2000	FY 2000	FY 2001	FY 2002	Complete	
	Product Development Orga	<u>nizations</u>									
	Thiokol	SS/CPAF	Aug 94	55,875	55,875	55,875					55,875
	Aerojet	SS/CPAF	Jul 94	50,738	50,738	50,738					50,738
	CSD	SS/CPAF	Jul 94	68,508	68,508	68,508					68,508
	Thiokol	C/CPAF	Feb 97	2,262	2,262	2,262					2,262
	Boeing-North American	C/CPAF	Oct 96	1,887	1,887	1,887					1,887
	Logicon	C/CPAF	Oct 96	2,869	2,869	2,749	120				2,869
	GTE	C/CPAF	Oct 96	1,618	1,618	1,588	30				1,618
	TRW (Prime)	C/CPAF	Dec 97	101,682	101,682	86,116	15,566				101,682
	Support and Management C										
	TRW (SETA)	SS/CPAF	Oct 94	20,857	20,857	20,857					20,857
	Program Integration	Various	As Req'd	N/A	N/A	2,500	105				2,605
	Other	Various	As Req'd	N/A	N/A	600	227				827
Þ	roject 4210			Dogo	e 11 of 24 Pa	nges			Evhih	it R-3 (PE 0	1604851 5 \

	RDT&E PR	OGRAM ELE	MENT/P	ROJECT	COST B	REAKDO	WN (R-3))	DATE	June 2001	
	GET ACTIVITY - Engineering and	Manufacturing	Developr	nent		ER AND TITLE 51F ICBM ·	- EMD				PROJECT 1210
(U)	Performing Organization Test and Evaluation Organization AEDC Vandenberg AFB Wright Labs Phillips Lab	·	As Req'd Nov 99 As Req'd As Req'd	N/A N/A N/A N/A	N/A N/A N/A N/A	5,640 968 37 81	2,275 9,596				7,915 10,564 37 81
(U)	Item Description Product Development Product Development Product Development Product None Support and Management None Test and Evaluation Product Development Product	Contract Method/Type or Funding Vehicle roperty at Property	Award or Obligation Date	<u>Delivery</u> <u>Date</u>		Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	<u>Total</u> <u>Program</u>
	None Subtotals Subtotal Product Develo Subtotal Support and Ma Subtotal Test and Evalua Total Project	pment anagement				Total Prior to FY 2000 269,723 23,957 6,726 300,406	Budget FY 2000 15,716 332 11,871 27,919	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program 285,439 24,289 18,597 328,325
Р	Project 4210			Pag	e 12 of 24 Pa	ages			Exhib	it R-3 (PE 06	604851F)

	RDT&E BUDGET ITEN	I JUSTIF	ICATIO	N SHE	ET (R-	2A Exh	ibit)		DATE	June :	2001
	GET ACTIVITY • Engineering and Manufacturing D	evelopmo	ent		UMBER AND 14851F		MD				PROJECT 4371
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4371	Safety Enhanced Reentry Vehicle (SERV) Program	0	0	52,406	64,332	56,231	34,903	19,892	0	0	227,764
FY0	2: New start identified in this budget submission.		l			I	l.	ļ.			
FY0: chan	3 - FY07: This administration has not addressed l	FY 2003-200	7 requireme	ents. All FY	7 2003-200°	7 budget est	timates incl	uded in this	book are n	otional only	and subject to
	The Minuteman (MM) III Weapon System is p provide nuclear deterrence. Recent development capability to transition Mk 21 Reentry Vehicles modify the MM III Weapon System to accept Melectrical and mechanical interfaces, system soft and qualification testing, systems integration are	nts concerning (RV) from the Ak 21 RVs. The Etware, suppo	g nuclear w he Peacekee These modit rt equipmer	eapons safe eper Weapo fications ind at, and train	ety and force on System to clude chang ers. Test ar	e structure of MM III. The sto the M ticles will be	changes dri The Safety I M III Reent	ven by strat Enhanced R try System (egic arms r eentry Veh (RS) to acco	eductions re icle (SERV) ommodate d	equire the or program will lifferences in
(U) (U) (U)	FY 2000 (\$ in Thousands) \$0 No Activity - SDD Begin \$0 Total	ns in FY02									
(U) (U) (U)	FY 2001 (\$ in Thousands) \$0 No Activity - SDD Begin \$0 Total	ns in FY02									
(U) (U) (U) (U) (U)	FY 2002 (\$ in Thousands) \$13,726 Perform Minuteman III 6 \$17,438 Perform Minuteman III 6 \$7,994 Perform Minuteman III 8 \$12,935 Perform System Test and Minuteman III Weapon 8 \$313 Perform Trainers/Trainin	Command & Support Equiple Evaluation, System.	Launch Equent designment designme	nipment Sof on for the in preplanning	tware desig corporating and analys	n for the in Mk 21 RV	corporating	Mk 21 RV			

Exhibit R-2A (PE 0604851F)

Project 4371

	RDT&E BUI	OGET ITI	EM JUS	TIFICAT	ION SH	EET (R-	2A Exhi	bit)		DATE	June 2	2001	
	GET ACTIVITY Engineering and Man	ufacturing	g Develop	ment		NUMBER AND 04851F	OTITLE CBM - EN	ИD				PRO 437	JECT '1
(U)	A. Mission Description Cont	inued											
(U) (U)	FY 2002 (\$ in Thousands) Cor \$52,406 Total	ntinued											
(U)	B. Project Change Summary New Start initiated with this bu		ion. Progran	n begins in I	FY02.								
	C. Other Program Funding S Other APPN	Summary (\$ i FY 2000 Actual	n Thousand FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	<u>Cos</u> <u>Com</u> j	st to olete	T	otal Cost
· /	Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, Safety Enhanced Reentry Vehicle, Mod #5911) (BA-03, P-012)					21,900	47,900	25,900	29,060	23,	592		148,352
(U)	D. Acquisition Strategy Studies, analyses, hardware and Prime Integration Contractor, (which will be contracted for sep	IPIC) with the	-		• •			-					
(U)	E. Schedule Profile					FY 2000 2 3	4 1	<u>FY 2</u>			<u>FY</u>	<u>2002</u>	4
(U) (U) (U) (U)	Complete Pre-EMD (Started Set System Functional Review Milestone B Contract AwardSystem Deve * - Completed Event X - Planned Event	. ,	emonstration	ı (SDD)	1 2	2 3	4 1	2	3 4 2	<u> </u>	2	3	4
Р	roject 4371				Page 14 of	f 24 Pages				Exhibit I	R-2A (P	E 06048	351F)

	RDT&E PROC	RAM ELE	MENT/P	ROJECT C	OST B	REAKDO	WN (R-3)		DATE	June 200)1
	GET ACTIVITY • Engineering and Mai	nufacturing	Developr	ment		ER AND TITLE S1F ICBM -	- EMD				PROJECT 4371
(U)	A. Project Cost Breakdown	n (\$ in Thousand	ds)				FY 2	2000	FY 200	01	FY 2002
(U) (U) (U) (U)	Component Design/Develop Support Equipment Design/I System Test and Evaluation Total								1 1 <u>2</u> 0.	<u>.</u>	31,477 7,994 12,935 52,406
(U)	B. Budget Acquisition History	ory and Plannin	g Informatio	on (\$ in Thousand	<u>ls</u>)						
(U)	Performing Organizations: Contractor or Government Performing Activity Product Development Organi TRW (Prime) Support and Management Or NSCCA/PATE Various Test and Evaluation Organization Vandenberg AFB	Contract Method/Type or Funding Vehicle izations C/CPAF rganizations SS/CPAF Various	Award or Obligation Date Jan 02 Jan 02 Nov 01 TBD	Performing Activity EAC TBD TBD TBD TBD	Project Office EAC 167,820 17,306 24,992 17,646	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002 41,580 5,488 5,338	Budget to Complete 126,240 11,818 19,654 17,646	Total Program 167,820 17,306 24,992 17,646
(U)	Item Description Product Development Proper None Support and Management Pro None	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	17,010	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	<u>Total</u>
P	roject 4371			Page	e 15 of 24 Pa	ges			Exhib	it R-3 (PE 0)604851F)

	RDT&E PROGRAM ELEMENT/PROJEC	CT COST BREAKDO	WN (R-3)		DATE	June 2001	
	GET ACTIVITY - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM -	- EMD				ROJECT 371
(U)	Government Furnished Property Continued: Test and Evaluation Property None Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002 41,580 10,826 52,406	Budget to Complete 126,240 31,472 17,646 175,358	Total Program 167,820 42,298 17,646 227,764
F	Project 4371	Page 16 of 24 Pages			Exhib	it R-3 (PE 06	04851F)

	RDT&E BUDGET ITEM	JUSTIF	ICATIO	N SHE	ET (R-	2A Exh	ibit)		DATE	June 2	2001
	T ACTIVITY E <mark>ngineering and Manufacturing De</mark>	ent	PE NUMBER AND TITLE 0604851F ICBM - EMD							PROJECT 4788	
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4788	PSRE Life Extension Program	8,177	18,157	19,425	12,481	0	0	0	0	0	58,240

FY03 - FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) A. Mission Description

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 (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.

(U) <u>FY 2000 (\$ in Thousands)</u>

(U) \$5,938 Began design/development of components requiring refurbishment or replacement.

(U) \$2,239 Began design/development of necessary support equipment.

(U) \$8,177 Total

(U) FY 2001 (\$ in Thousands)

(U) \$11,030 Continue component design/development of components requiring refurbishment or replacement.

(U) \$2,056 Continue support equipment design/development of necessary support equipment.

(U) \$5,071 Begin Test and Evaluation efforts.

(U) \$18,157 Total

The following net transactions are not reflected in the FY01 Program Total: BTR = -\$2,800K and SBIR = -\$1,154K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.

Project 4788 Page 17 of 24 Pages Exhibit R-2A (PE 0604851F)

	RDT&E B	JDGET IT	EM JUS	TIFICAT	TON SH	EET (R-	2A Exhi	bit)	D/	ATE June 2	2001
	GET ACTIVITY Engineering and Ma	anufacturing	g Develor	oment		NUMBER AND 04851F	OTITLE CBM - EN	ИD			PROJECT 4788
(U)	A. Mission Description C	<u>ontinued</u>									'
(U) (U)		mble Qualificat							•	bish two Qualifica	ation PSREs,
(U) (U) (U) (U)	\$2,001 Dev \$1,300 Con \$1,100 Perf \$6,781 Prov uniq othe	elop Emergency inue Equipment orm Dynamics a ide technician la	Response et Installation nd Qualification activities t equipment (fforts and begand Integratition Testing.	gin transportation into the Co	entrifuge and	Pendulum F	acility as we	ll as Facility C	Checkout Testing. Chance and repair of FE); program office	
(U)	\$19,425 Total	1									
(U)	B. Project Change Summ FY01: The following net tr priorities. Internal program	ansactions are no			_				K. Reprogran	nmings are to mee	t higher AF
(U)	C. Other Program Funding	g Summary (\$ FY 2000 Actual	in Thousand FY 2001 Estimate	<u>FY 2002</u> Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	<u>Cost to</u> <u>Complete</u>	Total Cost
(U) (U)	Other APPN Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, PSRE Life Extension, Mod #5768) (BA-03, P-012)				9,248	22,041	21,550	21,885	22,010	37,913	134,647
(U)	D. Acquisition Strategy The PSRE Life Extension P	rogram will be c	conducted un	der the ICBN	I Prime Integ	ration Contra	actor (IPIC) i	n partnership	with the Gov	ernment.	
(U)	E. Schedule Profile					FY 2000		<u>FY 2</u>	<u>001</u>	<u>FY</u>	2002
l _P	roject 4788				Page 18 of	24 Pages				Exhibit R-2A (P	E 0604851F)

	RDT&E BUDGET ITEM JUSTIFICAT	ΓΙΟΝ	SHEE	ET (R	-2A E	xhibit)		DAT		lune 2	001	
	GET ACTIVITY - Engineering and Manufacturing Development				ID TITLE	- EMD			·			PRO. 478	
	E. Schedule Profile Continued			<u>2000</u>				<u> 2001</u>			<u>FY 2</u>		
(U) (U)	CONTRACT MILESTONESEMD Contract AwardProduction Decision	1	2	3	4	1	2	3	4	1	2	3	4 X
(U)	ENGINEERING MILESTONESPDRCDR T&E MILESTONES				*					X			
(U)	First Qualification Test Fire * - Completed Event X - Planned Event												X
F	Project 4788	Page	19 of 24	Pages					E	Exhibit F	R-2A (PI	E 06048	851F)

	RDT&E PROC	GRAM ELE	MENT/P	ROJECT C	OST B	REAKDO	WN (R-3)		DATE	June 200	1
	GET ACTIVITY Engineering and Ma	nufacturing	Developr	nent		ER AND TITLE 51F ICBM -	- EMD				PROJECT 4788
(U)	A. Project Cost Breakdown	n (\$ in Thousand	<u>ls</u>)				FY 2	2000	FY 200	01	FY 2002
(U)	Component Design/Develop	ment						938	11,03		17,025
(U)	Support Equipment Design/I							239	2,05	66	1,300
(U)	System Test and Evaluation	•							5,07		1,100
(U)	Total						8,	177	18,15	7	19,425
(U)	B. Budget Acquisition History	ory and Plannin	g Informatio	on (\$ in Thousand	<u>ls</u>)						
(U)	Performing Organizations:										
	Contractor or	Contract									
	Government	Method/Type	Award or	Performing	Project						
	Performing	or Funding	Obligation	<u>Activity</u>	Office	Total Prior	Budget	Budget	Budget	Budget to	<u>Total</u>
	Activity	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	to FY 2000	FY 2000	FY 2001	FY 2002	<u>Complete</u>	<u>Program</u>
	Product Development Organ										
	TRW (Prime)	C/CPAF	Oct 99	40,686	40,686		7,630	14,740	11,530	6,786	40,686
	Support and Management Or										
	SPO/OO-ALC Support	WR	Annual	N/A	15,836		547	3,417	6,781	5,091	15,836
	Test and Evaluation Organization										
	White Sands Test Facility	PO	As Req'd	1,718	1,718				1,114	604	1,718
	(WSTF)										
(U)	Government Furnished Pro										
		Contract Mathed/Type	Arriand on								
	Item	Method/Type or Funding	Award or Obligation	Delivery		Total Prior	Budget	Budget	Budget	Budget to	Total
	Description	Vehicle	<u>Date</u>	<u>Date</u>		to FY 2000	FY 2000	FY 2001	FY 2002	Complete	<u>Program</u>
	Product Development Proper	<u> </u>	Date	Date		10 1 1 2000	1 1 2000	1.1.2001	11 2002	Complete	<u>i iogialli</u>
	None	<u>. Ly</u>									
	Support and Management Pro	onerty									
	None	<u>opertj</u>									
P	roject 4788			Рапе	20 of 24 Pa	iges			Eyhih	it R-3 (PE 0	604851F)
Г	10,000 4700			rage	20 01 2 4 Fa	igus			LAHID	11.113 (1 L U	0070011)

	RDT&E PROGRAM ELEMENT/PROJE	CT COST BREAKDO	WN (R-3))	DATE	June 2001	
	GET ACTIVITY - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM -	- EMD				ROJECT 788
	Government Furnished Property Continued: Test and Evaluation Property None Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 2000	Budget FY 2000 7,630 547 8,177	Budget FY 2001 14,740 3,417 18,157	Budget FY 2002 11,530 6,781 1,114 19,425	Budget to Complete 6,786 5,091 604 12,481	Total Program 40,686 15,836 1,718 58,240
F	Project 4788	Page 21 of 24 Pages			Exhib	it R-3 (PE 06	04851F)

	RDT&E BUDGET ITEM	JUSTIF		ON SHE		2A Exh	ibit)		DATE	June :	 2001	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development 0604851F ICBM - EMD 5												
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5007	GPS Metric Tracking Capability	0	0	4,000	0	0	0	0	0	Continuing	TBD	
	This is a new start initiated with this President's 1-FY07: This administration has not addressed FY e.	C		ents. All FY	? 2003-200°	7 budget est	timates incl	uded in this	book are n	otional only	and subject to	
` ′	A. Mission Description As part of the ongoing Range Standardization and	d Automatic	on effort, th	e retiremen	t of radar-b	ased legacy	range instr	umentation	for tracking	g and contro	olling Minuteman	

As part of the ongoing Range Standardization and Automation effort, the retirement of radar-based legacy range instrumentation for tracking and controlling Minuteman force development evaluation (FDE) flights at the Western Range is planned to begin in FY07. The range will be transitioning to a Global Positioning System (GPS) based tracking system. Future procurement of the Minuteman Instrumentation Range Safety Wafers (aka Mod 7 Instrumentation Wafers) will incorporate a GPS translator. The current inventory of instrumentation wafers equipped with radar beacons will run out in second quarter of FY06. Therefore, the Western Range and the Minuteman weapon system must be made ready to support GPS range certification flights in FY04 to ensure that the GPS tracking system (both the ground and on-vehicle segments) is operational by FY06. This program will develop, modify, test and flight certify the necessary GPS hardware integrated in the Mod 7 Instrumentation Wafer to support flight test operations of the Minuteman weapon system from the Western Range using GPS. This metric tracking system will provide range operations with near instantaneous time/space position information and flight profile data required to safely conduct launch operations.

(U) FY 2000 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) FY 2001 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) FY 2002 (\$ in Thousands)

(U) \$3,800 Begin the design and development of the hardware needed to provide Minuteman with a GPS-based metric tracking capability

(U) \$200 Provide program office support.

(U) \$4.000 Total

Project 5007 Page 22 of 24 Pages Exhibit R-2A (PE 0604851F)

	RDT&E BUD	GET IT	EM JUS	TIFICAT	ION SH	EET (R-	2A Exhil	bit)	Di	ATE Ju r	ne 2001
	GET ACTIVITY - Engineering and Manu	ıfacturing	g Develop	ment		NUMBER AND 04851F	TITLE CBM - EN	/ID			РРОЈЕСТ 5007
(U)	B. Project Change Summary FY02: This is a new start identification.	fied with thi	s President's	Budget Subr	nission.						
	C. Other Program Funding St. Other APPN	FY 2000 Actual	in Thousand FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	
											TBD
(U)			O / 1								
(U)	D. Acquisition Strategy A Cost Plus Award Fee (CPAF)) modificatio	n to the ICB	M Prime Inte	gration Cont	ract with effo	ort to begin ir	n Jan 02 is pl	anned.		
(U)	E. Schedule Profile				1 2	FY 2000 2 3	4 1	<u>FY 2</u> 2	2 <u>001</u> 3 4	1	<u>FY 2002</u> 2 3 4
(U) (U)	Milestone B Contract Mod for System Devel Award PDR (TBD) CDR (TBD)	lopment & C	9 emonstration	n (SDD)						X	X
Р	Project 5007				Page 23 of	² 24 Pages				Exhibit R-2	A (PE 0604851F)

	RDT&E PROC	GRAM ELE	MENT/P	ROJECT C	OST B	REAKDO	WN (R-3))	DATE	June 200)1
	GET ACTIVITY Engineering and Ma	nufacturing	Developm	ent		ER AND TITLE 51F ICBM •	- EMD				PROJECT 5007
(U) (U) (U) (U)	A. Project Cost Breakdown Design/Development of Hard Program Office Support Total		<u>ls)</u>				FY	2000	FY 20	01	FY 2002 3,800 200 4,000
(U)	B. Budget Acquisition Histo	ory and Plannin	g Information	n (\$ in Thousand	ds)						1,000
(U)	Performing Organizations: Contractor or Government Performing Activity Product Development Organi TRW Support and Management Or Other Test and Evaluation Organiza Subtotals Subtotal Product Development Subtotal Support and Manage Subtotal Test and Evaluation Total Project	Contract Method/Type or Funding Vehicle izations C/CPAF ganizations TBD ations	Award or Obligation Date Jan 02 TBD	Performing Activity EAC TBD N/A	Project Office EAC TBD N/A	Total Prior to FY 2000 0 Total Prior to FY 2000 0 0 0	Budget FY 2000 0 0 Budget FY 2000 0 0	Budget FY 2001 0 0 Budget FY 2001 0 0	Budget FY 2002 3,800 200 Budget FY 2002 3,800 200 4,000	Budget to Complete Continuing Continuing Budget to Complete TBD TBD TBD	Program TBD TBD Total
Р	roject 5007			Page	e 24 of 24 Pa	iges			Exhil	oit R-3 (PE (0604851F)