

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	59.736	71.843	158.477	-	158.477	198.491	191.406	153.410	138.210	Continuing	Continuing
655037: <i>Support Equipment</i>	41.057	71.843	72.410	-	72.410	76.035	48.269	17.185	1.658	Continuing	Continuing
657006: <i>ICBM EMD: Fuze Support</i>	-	-	42.114	-	42.114	73.374	105.511	134.036	136.552	Continuing	Continuing
655081: <i>ICBM Crypto</i>	18.679	-	43.953	-	43.953	49.082	37.626	2.189	-	Continuing	Continuing

Note

In FY12, Project Number 655037, Support Equipment, includes the Single Integrated Operation Plan Targeting Application Computer System new start effort.

In FY12, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products.

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.432M in FY12 from the Support Equipment Programs.

A. Mission Description and Budget Item Justification

Intercontinental Ballistic Missile (ICBM) Engineering and Manufacturing Development (EMD) efforts will ensure the extension of the operational life of the Minuteman III ICBM weapon system through 2030.

The Support Equipment program designs, develops, and tests replacement of obsolete/non-serviceable weapon system support equipment. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, and the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS).

The ICBM Cryptography Upgrade Increment II program expands on the ICBM Cryptography Upgrade Increment I program to incorporate remote key/code change and irreversible transformation of launch/enable codes increasing nuclear weapons security during annual code change cycles.

ICBM Fuze Support will continue studies and development planning leading to a development effort for Mk21 and Mk12A replacement fuzes. Development effort will make maximum use of technologies, parts and components developed under the Navy Mk5 fuze program.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
----------------------------------------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------

B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	60.010	71.843	66.776	-	66.776
Current President's Budget	59.736	71.843	158.477	-	158.477
Total Adjustments	-0.274	-	91.701	-	91.701
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.274	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	91.701	-	91.701

Change Summary Explanation

FY12 funding reflects a \$5.634M increase to project 655037 for the SIOP Targeting Application Computer System (STACS) new start program and to upgrade Minuteman Code System Media, a \$43.953M increase to project number 655081 for ICBM Crypto and a \$42.114M increase to project number 657006 for ICBM EMD: Fuze Support.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 655037: Support Equipment			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
655037: Support Equipment	41.057	71.843	72.410	-	72.410	76.035	48.269	17.185	1.658	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In FY12, Project Number 655037, Support Equipment, includes the Single Integrated Operation Plan Targeting Application Computer System new start effort.											
A. Mission Description and Budget Item Justification The Support Equipment program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.432M in FY12. The ongoing Support Equipment program replaces obsolete/unsupportable/non-serviceable weapon system support equipment necessary to extend the operational life of the Minuteman III (MM III) weapon system through 2030. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, and the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS). The production phase, MPAF funding is budgeted under MMIII Support Equipment Replacement, PE 0101213F. This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Electrical-Electronic Equipment Test Set (EEETS)							5.407	8.603	3.389	-	3.389
Description: Design and develop the EEETS necessary for production/pre-launch checkout of MOD 7 wafer required for the ongoing test launch program. The program will replace the current unsupportable test set which consists of a non-standard processor, proprietary software, and requires Digital-to-Analog Converter (DAC) cards no longer made (no suitable substitute).											
FY 2010 Accomplishments: Begin design, development, fabrication and testing of EEETS.											
FY 2011 Plans: Continue design, development, fabrication and testing of EEETS.											
FY 2012 Base Plans:											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD	PROJECT 655037: Support Equipment				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete design, development, fabrication and testing of EEETS.						
FY 2012 OCO Plans:						
Title: Reentry Field Support Equipment (RFSE)		18.111	38.089	37.809	-	37.809
Description: Design and develop the RFSE to replace the current reentry systems test set. The effort will increase the mean time between failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability through 2030 to meet DoE mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of MM III Reentry Systems						
FY 2010 Accomplishments: Begin design, development, fabrication and testing of RFSE. Begin Independent Validation and Verification (IV&V) for the RFSE.						
FY 2011 Plans: Continue design, development, fabrication and testing of RFSE. Continue IV&V for the RFSE.						
FY 2012 Base Plans: Continue design, development, fabrication and testing of RFSE. Continue IV&V for the RFSE. Complete Critical Design Review (CDR).						
FY 2012 OCO Plans:						
Title: Code System Media (CSM)		17.539	23.312	14.682	-	14.682
Description: The Minuteman CSM effort will develop software to support management of data flow and data products to keep the Minuteman III weapon system into operational mode. Current CSM processes utilize DC300 tape cartridges and 9-track tapes. Beginning in FY11, the National Security Agency (NSA) is no longer using DC300 tape cartridges and the shelf life expires in 2013 for the remaining 9-track tapes. The software will be modified to use CD-ROMs as the new media. Ensures capability through 2030 to load codes/software on MM ICBMs--critical to CY12 code change.						
FY 2010 Accomplishments: Begin design, development, fabrication and testing of CSM. Begin Nuclear Surety Cross Check Analysis (NSCCA) for the CSM.						
FY 2011 Plans:						

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD	PROJECT 655037: Support Equipment				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue design, development, fabrication and testing of CSM. Continue NSCCA for the CSM. FY 2012 Base Plans: Continue design, development, fabrication and testing of CSM software and hardware. Continue NSCCA for the CSM. Complete CDR. FY 2012 OCO Plans:						
Title: Payload Transporter Tractor and Trailer (PT3) Description: Design and develop the capabilities necessary to replace the current PT3, mitigating emerging threat technologies and methods. The new Weapons Transporter design increases safety and security during transport activities and improves maintenance operations. FY 2010 Accomplishments: FY 2011 Plans: Begin design, development, fabrication and testing of replacement PT3. FY 2012 Base Plans: Continue design, development, fabrication and testing of replacement PT3. FY 2012 OCO Plans:		-	0.790	8.325	-	8.325
Title: Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator Description: Design and develop the replacement for the Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator due to obsolescence and unsupportability for repair. This program will address the replacement of Test Support Equipment (TSE) with a modern, sustainable common platform and standard interfaces. FY 2010 Accomplishments: FY 2011 Plans: Begin design, development, fabrication and testing of HAC/RMPE message generator. FY 2012 Base Plans:		-	1.049	0.996	-	0.996

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 655037: Support Equipment				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete design, development, fabrication and testing of HAC/RMPE message generator. Complete PDR.												
FY 2012 OCO Plans:												
Title: Single Integrated Operational Plan (SIOP) Targeting Applications Computer System (STACS)								-	-	7.209	-	7.209
Description: Design and develop a replacement computer for the STACS. The program will enable output to compact disc media and update/replace unsupportable/obsolete hardware and software.												
FY 2010 Accomplishments:												
FY 2011 Plans:												
FY 2012 Base Plans:												
Begin design and development activities. Complete PDR.												
FY 2012 OCO Plans:												
Accomplishments/Planned Programs Subtotals								41.057	71.843	72.410	-	72.410
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost	
• MPAF: PE 0101213F, Minuteman Squadrons, MM III Support Equipment Replacement	50.532	58.438	65.913	0.000	65.913	56.506	82.449	140.097	26.289	Continuing	Continuing	
D. Acquisition Strategy												
The support equipment replacement programs will be Cost Plus Incentive Fee (CPIF) contract addendums added to the ICBM Prime Integration Contract (IPIC) for everything but the NSCCA and IV&V efforts, which will be contracted for separately under a Cost Plus Award Fee (CPAF) Contract.												
E. Performance Metrics												
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.												

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 655037: Support Equipment					
Product Development (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
ICBM Prime Integration Contract	SS/CPIF	Northrop Grumman Mission Systems:Clearfield, UT	38.981	67.349	Oct 2010	65.968	Oct 2011	-		65.968	130.976	303.274	TBD	
Subtotal			38.981	67.349		65.968		-		65.968	130.976	303.274		
Support (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
NSCCA	SS/CPAF	NGIT:Mclean, VA	0.713	1.065	Oct 2010	1.676	Oct 2011	-		1.676	2.165	5.619	TBD	
Subtotal			0.713	1.065		1.676		-		1.676	2.165	5.619		
Test and Evaluation (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Independent Validation and Verification	SS/CPAF	Northrop Grumman IT:Mclean, VA	0.149	0.518	Oct 2010	0.766	Oct 2011	-		0.766	0.676	2.109	TBD	
Subtotal			0.149	0.518		0.766		-		0.766	0.676	2.109		
Management Services (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SPO/Other Program Support	Various	ICBM Program Office:Hill AFB, UT	1.214	2.911	Oct 2010	4.000	Oct 2011	-		4.000	0.000	8.125	0.000	
Subtotal			1.214	2.911		4.000		-		4.000	0.000	8.125	0.000	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>			PROJECT 655037: <i>Support Equipment</i>					
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	41.057	71.843		72.410		-		72.410	133.817	319.127	
Remarks											

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</i>

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 5: *Development & Demonstration (SDD)*

R-1 ITEM NOMENCLATURE

PE 0604851F: *ICBM - EMD*

PROJECT

655037: *Support Equipment*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Reentry Field Support Equipment (RFSE) development contract award	3	2010	3	2010
Electrical-Electronic Equipment Test Set (EEETS) development contract award	4	2010	4	2010
CSM development contract award	4	2010	4	2010
RFSE Preliminary Design Review (PDR)	2	2011	2	2011
Payload Transporter III (PT III) Tractor Trailer requirement definition contract award	3	2011	3	2011
CSM PDR	3	2011	3	2011
HAC/RMPE Msg Gen contract award	4	2011	4	2011
EEETS Functional Configuration Audit.Physical Configuration Audit	1	2012	1	2012
SIOP Targeting Applications Computer System (STACS) contract award	2	2012	2	2012
RFSE and CSM Critical Design Review (CDR)	2	2012	2	2012
HAC/RMPE Msg Gen PDR	3	2012	3	2012
STACS PDR	3	2012	3	2012
PT III PDR	4	2012	4	2012
STACS and HAC/RMPE CDRs	1	2013	1	2013
EEETS contract completion	2	2013	2	2013
STACS Technology Readiness Review (TRR)	3	2013	3	2013

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 657006: ICBM EMD: Fuze Support			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
657006: ICBM EMD: Fuze Support	-	-	42.114	-	42.114	73.374	105.511	134.036	136.552	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In FY12, the fuze efforts in project number 657006 ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support to consolidate service activities as they progress towards deployable products.											
A. Mission Description and Budget Item Justification The ICBM Fuze Modernization program will replace the Mk21 fuze to meet warfighter requirements and maintain current capability. The program will also develop a new Mk12A fuze capability to match the W78 Warhead Life Extension Program (LEP) driven by the need to meet Nuclear Weapons Stockpile Plan and Requirements Planning Document providing direction on the number and mix of nuclear weapons available for employment. The Air Force ICBM Fuze Modernization Program will work in conjunction with the National Nuclear Security Administration (NNSA), the Navy, and United Kingdom (UK) Ministry of Defense (MoD) to capitalize on the extensive fuze work done to date by the Navy and NNSA, and make maximum use of Joint technologies, parts, components, development and production capabilities. The ICBM Fuze Modernization Program will also address the needed/associated Minuteman III Weapon System modifications, system testing, support equipment, data, training, and fielding efforts required to support the new Mk21 fuze and the new Mk12A fuze associated with the W78 warhead LEP. This program is in Budget Activity 5, System Development and Demonstration (SDD) because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Developmental Planning							-	-	10.100	-	10.100
Description: Developmental planning, requirements definition, contract and acquisition strategy.											
FY 2010 Accomplishments: Reflected in PE 0604222F											
FY 2011 Plans: Reflected in PE 0604222F											
FY 2012 Base Plans: Prepare for Milestone-B. Prepare and release Request for Proposal. Prepare for source selection for EMD contract.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD	PROJECT 657006: ICBM EMD: Fuze Support				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Develop government Preliminary Design Review.						
FY 2012 OCO Plans: None						
Title: System Engineering Description: Coordinate development efforts of W78 Life Extension Program (LEP) and Mk12A arming and fuzing. Synchronize DoD arming and fuzing and DoE warhead requirements. Study and assess weapon system cost/schedule/performance impacts. FY 2010 Accomplishments: Reflected in PE 0604222F FY 2011 Plans: Reflected in PE 0604222F FY 2012 Base Plans: Continue to evaluate AF-USN-UK performance requirements, physical characteristics, logistical and operation concepts, and physical environments with the goal of developing common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Continue to identify potential concepts and technologies and evaluate Technology Readiness Level/ Manufacturing Readiness Level (TRL/MRL). Continue development and validation of modeling and simulation to assess weapon system impacts. Continue to assess cost/schedule/performance impacts to Minuteman III weapon system. Support Developmental Planning activities. Develop engineering design models to evaluate hardware fuze and weapon system interface and performance. Examine nuclear surety themes as directed by NSPD-28. FY 2012 OCO Plans: None		-	-	12.500	-	12.500
Title: Hardware Development Description: Preliminary design of joint technology, components, and parts.		-	-	19.514	-	19.514

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force							DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>			PROJECT 657006: <i>ICBM EMD: Fuze Support</i>					
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2010 Accomplishments:</i> Reflected in PE 0604222F <i>FY 2011 Plans:</i> Reflected in PE 0604222F <i>FY 2012 Base Plans:</i> Develop joint parts, components and technology for application to Mk21 and Mk12A/W78 LEP arming and fuzing. Examine nuclear surety themes as directed by NSPD-28. Provide development hardware for assessment through in the loop testing. <i>FY 2012 OCO Plans:</i> None											
Accomplishments/Planned Programs Subtotals							-	-	42.114	-	42.114
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0101213: MPAF: <i>Missile Procurement - AF, Minuteman Squadrons, Modification</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.648	14.000	Continuing	Continuing
• PE 0604222F: RDT&E: <i>Nuclear Weapons Support, 654236 Engineering Analysis, Joint Fuze</i>	8.703	9.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
D. Acquisition Strategy											
Pre-Acquisition program development requires contracts to support the program office in risk reduction, cost estimates, engineering manufacturing design (EMD) acquisition and contract strategies, requests for proposal, source selection, systems engineering, and program planning. Program office will also continue fuze studies and analysis of weapon systems impacts, and support to the W78 Life Extension Program. Development contractor will be determined and awarded either directly or competitively as appropriate. Weapon System support and integration contractors will be awarded either as directed source or competitively as appropriate. EMD contract award is planned for FY2013.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD	PROJECT 657006: ICBM EMD: Fuze Support
----------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------	--------------------------------------------------

Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Preliminary Design Development	TBD	TBD:TBD,	-	-		19.000	Feb 2012	-		19.000	Continuing	Continuing	TBD
Subtotal			-	-		19.000		-		19.000			

Remarks
Prior to FY12, Fuze effort was funded in PE 0604222F thus no FY10 or FY11 funding existed in PE 0604851F, 657006 - ICBM EMD: Fuze Support.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Minuteman Systems Engineering	C/CPFF	Northrop Grumman Systems Corporation, IPIC:Clearfield, UT	-	-		9.250	Apr 2012	-		9.250	Continuing	Continuing	TBD
Acquisition Support	C/CPFF	Booz Allen Hamilton, SURVIAC:Clearfield, UT	-	-		2.000	Jun 2012	-		2.000	Continuing	Continuing	TBD
Acquisition Planning	C/CPAF	TBD:TBD,	-	-		4.364	Jan 2012	-		4.364	43.636	48.000	48.000
Subtotal			-	-		15.614		-		15.614			

Remarks
Prior to FY12, Fuze effort was funded in PE 0604222F thus no FY10 or FY11 funding existed in PE 0604851F, 657006 - ICBM EMD: Fuze Support.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Test	TBD	TBD:TBD,	-	-		0.500	Dec 2011	-		0.500	Continuing	Continuing	TBD
Test Planning	C/CPFF	Northrop Grumman Systems Corporation, IPIC:Clearfield, UT	-	-		1.000	Nov 2011	-		1.000	Continuing	Continuing	TBD
Subtotal			-	-		1.500		-		1.500			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>					PROJECT 657006: <i>ICBM EMD: Fuze Support</i>				

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Prior to FY12, Fuze effort was funded in PE 0604222F thus no FY10 or FY11 funding existed in PE 0604851F, 657006 - ICBM EMD: Fuze Support.													

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cost Estimation	C/TBD	Tecolote Research, Inc:Santa Barbara, CA	-	-		0.100	Nov 2011	-		0.100	0.000	0.100	0.000
Cost and Financial Management	C/CPFF	TBD:TBD,	-	-		1.400	Jan 2012	-		1.400	4.600	6.000	6.000
SPO/Other Program Support	TBD	Hill AFB:Clearfield, UT	-	-		4.500		-		4.500	0.000	4.500	0.000
Subtotal			-	-		6.000		-		6.000	4.600	10.600	6.000
Remarks Prior to FY12, Fuze effort was funded in PE 0604222F thus no FY10 or FY11 funding existed in PE 0604851F, 657006 - ICBM EMD: Fuze Support.													

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		42.114		-		42.114			
Remarks Prior to FY12, Fuze effort was funded in PE 0604222F thus no FY10 or FY11 funding existed in PE 0604851F, 657006 - ICBM EMD: Fuze Support.													

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MDD	1	2012	1	2012
Milestone A	4	2012	4	2012
Milestone B	1	2013	1	2013
EMD Contract Award	1	2013	1	2013
PDR Mk 21	1	2015	1	2015
PDR Mk 12A	1	2016	1	2016
CDR Mk 21	2	2016	2	2016

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 655081: ICBM Crypto			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
655081: ICBM Crypto	18.679	-	43.953	-	43.953	49.082	37.626	2.189	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
Increment II of the Inter-Continental Ballistic Missile Cryptography Upgrade program executes USSTRATCOM, Air Force Global Strike Command (AFGSC), and Nuclear Weapon Safety Center (NWSC) requirements by implementing the KS-60 capabilities of remote key/code change and irreversible transformation as mandated in the approved Capabilities Development Document (CDD) dated 4 Jan 05 and addresses Nuclear Weapon System Safety Group Operational Safety Review (NWSSG OSR) requirements 98-2, 00-1 and 02-2. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and reduce associated resource costs for 450 launch facilities (LF) and 45 launch control centers (LCC).											
The associated production funding for the program is in PE 0101213F MM III Modification.											
This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ICU II							18.679	-	43.953	-	43.953
Description: ICBM cryptography upgrade II completes the design and development and implements the KS-60 capabilities of remote key/code change and irreversible transformation.											
FY 2010 Accomplishments: Continue requirement definition, validation and risk mitigation for future design, develop & test of the software upgrades/changes to the Console Operating Program, Launch Facility hardware/software modification and Wing Code Processing System.											
FY 2011 Plans: Continue requirement definition, validation and risk mitigation for future design, develop & test of the software upgrades/changes to the Console Operating Program, Launch Facility hardware/software modification and Wing Code Processing System.											
FY 2012 Base Plans:											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force				DATE: February 2011							
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>		PROJECT 655081: <i>ICBM Crypto</i>							
B. Accomplishments/Planned Programs (\$ in Millions)											
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total						
Complete requirement definition, validation and risk mitigation for future design, develop & test of the software upgrades/changes to the Console Operating Program, Launch Facility hardware/software modification and Wing Code Processing System.											
<i>FY 2012 OCO Plans:</i>											
Accomplishments/Planned Programs Subtotals	18.679	-	43.953	-	43.953						
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101213F: <i>MPAF, Missile Procurement - AF, Minuteman Squadrons, Modification</i>	0.000	0.000	0.000	0.000	0.000	0.000	13.200	25.100	29.700	Continuing	Continuing
D. Acquisition Strategy											
Cost Plus Incentive Fee contract will be added to the ICBM Prime Integration Contractor (IPIC).											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604851F: ICBM - EMD				PROJECT 655081: ICBM Crypto						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
ICBM Prime Integration Contract	SS/CPIF	Northrop Grumman:Clearfield, UT	18.187	-		42.000	Mar 2012	-		42.000	Continuing	Continuing	TBD	
Subtotal			18.187	-		42.000		-		42.000				
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SPO/Other Program Support	Various	ICBM Program Office:Hill AFB, UT	0.492	-		0.353	Oct 2011	-		0.353	Continuing	Continuing	TBD	
Subtotal			0.492	-		0.353		-		0.353				
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Not specified.	Various	ICBM Program Officer:Hill AFB, UT	-	-		1.600	Oct 2011	-		1.600	Continuing	Continuing	TBD	
Subtotal			-	-		1.600		-		1.600				
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			18.679	-		43.953		-		43.953				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force						DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>			PROJECT 655081: <i>ICBM Crypto</i>			
	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks									

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655081: <i>ICBM Crypto</i>

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 5: *Development & Demonstration (SDD)*

R-1 ITEM NOMENCLATURE

PE 0604851F: *ICBM - EMD*

PROJECT

655081: *ICBM Crypto*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EMD Contract Award	2	2012	2	2012
Preliminary Design Review (PDR)	4	2012	4	2012
Critical Design Review (CDR)	2	2013	2	2013
Technology Readiness Review (TRR)	1	2014	1	2014

UNCLASSIFIED