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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force	Date: February 2019
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0604222F / <i>Nuclear Weapons Support</i>
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	26.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.672
674237: <i>EMP Certification</i>	-	26.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.672

A. Mission Description and Budget Item Justification

This program executes and provides technical and programmatic support to the testing, evaluation, and mitigation of effects of nuclear weapon employment that impact Air Force systems with initial emphasis on existing nuclear weapons, their delivery systems, and associated communications systems. It includes facilities and equipment required to perform testing, risk assessments, survivability/vulnerability studies, and effectiveness evaluation of various mitigation strategies. It includes modeling and simulation efforts for systems of systems analysis where assessments are not possible through testing alone. This program will recommend upgrades to existing/fielded systems as well as informing requirements for future (modernization/recapitalization) systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver nuclear weapon support capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605833F Acquisition Workforce - Nuclear Systems.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	27.579	0.000	0.000	0.000	0.000
Current President's Budget	26.672	0.000	0.000	0.000	0.000
Total Adjustments	-0.907	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.907	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

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<u>Change Summary Explanation</u> No Significant Changes		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 674237 / EMP Certification			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
674237: EMP Certification	-	26.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.672
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program executes and provides technical and programmatic support to the testing, evaluation, and mitigation of effects of nuclear weapon employment that impact Air Force systems with initial emphasis on existing nuclear weapons, their delivery systems, and associated communications systems. It includes facilities and equipment required to perform testing, risk assessments, survivability/vulnerability studies, and effectiveness evaluation of various mitigation strategies. It includes modeling and simulation efforts for systems of systems analysis where assessments are not possible through testing alone. This program will recommend upgrades to existing/fielded systems as well as informing requirements for future (modernization/recapitalization) systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2018	FY 2019	FY 2020
Title: Electronic Magnetic Pulse (EMP)	26.672	0.000	-
Description: Provide technical and programmatic support required to test, evaluate, and mitigate Electromagnetic Pulse (EMP) impacts across all Air Force systems with initial emphasis on existing nuclear weapons, their delivery systems, and associated communications systems			
FY 2019 Plans: N/A			
FY 2019 to FY 2020 Increase/Decrease Statement: This effort is a one year (FY18) program and there is no subsequent activity.			
Accomplishments/Planned Programs Subtotals	26.672	0.000	-

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

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTE 05 64222F/654236: Engineering Analysis	2.910	2.979	2.421	-	2.421	4.466	5.410	5.107	4.420	Continuing	Continuing
• RDTE 05 64222F/655708: Weapon Storage Facility Material Handling System	0.000	1.489	1.985	-	1.985	11.910	6.950	1.986	2.022	Continuing	Continuing

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support	Project (Number/Name) 674237 / EMP Certification
D. Acquisition Strategy FY2018 Funds will be provided to the Navy (NWC) at Patuxent River, OC-ALC Compass Rose at Tinker AFB and Test Facilities at Hill AFB to provide support to facilities and equipment that perform required testing, assessments, studies and evaluation of AF aircraft/systems.		
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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 674237 / EMP Certification					
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NWC, Pax River	MIPR	US Navy : Patuxent River, MD	-	0.889	Dec 2018	-		-		-		-	0.000	0.889	-
NWC Pax River	MIPR	US Navy : Patuxent River, MD	-	7.300	Feb 2019	-		-		-		-	0.000	7.300	-
Compass Rose	PO	Air Force : Tinker AFB, OK	-	12.200	Jul 2018	-		-		-		-	0.000	12.200	-
Hill Test Facility	Various	Air Force : Hill AFB, UT	-	6.217	Jul 2019	-		-		-		-	0.000	6.217	-
Subtotal			-	26.606		-		-		-		-	0.000	26.606	N/A
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support (PMA)	TBD	Various : Various	-	0.066	May 2019	-		-		-		-	0.000	0.066	-
Subtotal			-	0.066		-		-		-		-	0.000	0.066	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	26.672		0.000		-		-		-	0.000	26.672	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force										Date: February 2019			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
3600 / 7					PE 0604222F / Nuclear Weapons Support					674237 / EMP Certification			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
EMP Certification																												
Acceptances and Awards																												
Final Reports																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604222F / <i>Nuclear Weapons Support</i>	Project (Number/Name) 674237 / <i>EMP Certification</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>EMP Certification</i>				
Acceptances and Awards	4	2018	4	2019
Final Reports	1	2019	1	2021