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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force **Date:** February 2018

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604222F / <i>Nuclear Weapons Support</i>							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	0.000	3.009	4.468	0.000	4.468	5.957	16.376	11.429	6.546	Continuing	Continuing
654236: <i>Engineering Analysis</i>	-	0.000	3.009	2.979	0.000	2.979	3.972	4.466	4.479	4.560	Continuing	Continuing
655708: <i>Nuclear Weapons Support</i>	-	0.000	0.000	1.489	0.000	1.489	1.985	11.910	6.950	1.986	Continuing	Continuing

Note

This program, BA 5, PE 0604222F, project 655708, Weapon Storage Facility Material Handling Systems, is a new start.

A. Mission Description and Budget Item Justification

The Air Force Nuclear Weapons Center, Kirtland AFB, NM, is the executing agency for this program. The Air Force is tasked with maintaining and providing technical expertise on all AF nuclear weapons and weapon systems and with developing and maintaining counter-chemical, biological, radiological, and nuclear (C-CBRN) capabilities. This program provides resources for technical and programmatic activities which includes performing independent analyses on all AF nuclear weapons systems activities including weapons development and sustainment; interoperability; compatibility; safety, security, and reliability; Air Force legacy nuclear stockpile management/retirement; nuclear certification and nuclear certification management.

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 elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force				Date: February 2018	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)		PE 0604222F I Nuclear Weapons Support			
B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	3.009	3.001	0.000	3.001
Current President's Budget	0.000	3.009	4.468	0.000	4.468
Total Adjustments	0.000	0.000	1.467	0.000	1.467
• 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	0.000	0.000			
• Other Adjustments	0.000	0.000	1.467	0.000	1.467
Change Summary Explanation					
FY19 increase of \$1.5M for Weapon Storage Facility Material Handling System					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 654236 / Engineering Analysis			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
654236: Engineering Analysis	-	0.000	3.009	2.979	0.000	2.979	3.972	4.466	4.479	4.560	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Air Force Nuclear Weapons Center, Kirtland AFB, NM, is the executing agency for this program. The Air Force is tasked with maintaining and providing technical expertise on all AF nuclear weapons and weapon systems and with developing and maintaining counter-chemical, biological, radiological, and nuclear (C-CBRN) capabilities. This program provides resources for technical and programmatic activities which includes performing independent analyses on all AF nuclear weapons systems activities including weapons development and sustainment; interoperability; compatibility; safety, security, and reliability; Air Force legacy nuclear stockpile management/retirement; nuclear certification and nuclear certification management.

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.

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

	FY 2017	FY 2018	FY 2019
Title: Engineering Analysis	0.000	3.009	2.979
Description: Provide the technical oversight of all Air Force (AF) nuclear weapons, delivery systems, and support systems. Provide the engineering and technical management expertise required in critical areas of nuclear weapons safety, security, reliability, operations, modernization, testing, certification, and counter proliferation.			
FY 2018 Plans: Analyze and document nuclear weapons issues related to risk assessment, data collection, model development, model validation, weapon effectiveness and nuclear stockpile planning and requirements assessment.			
FY 2019 Plans: Efforts in FY19 will continue to analyze and document nuclear weapons issues related to risk assessment, data collection, model development, model validation, weapon effectiveness, and nuclear stockpile planning and requirements assessment.			
FY 2018 to FY 2019 Increase/Decrease Statement: Funding decreased in accordance with FY18 PB plan.			
Accomplishments/Planned Programs Subtotals	0.000	3.009	2.979

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018	
Appropriation/Budget Activity 3600 / 5				R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 654236 / Engineering Analysis			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2019</u>	<u>FY 2019</u>	<u>FY 2019</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Complete</u>	<u>Total Cost</u>
• RDTE 07 64222F/674237: EMP Certification	-	27.579	-	-	-	-	-	-	-	0.000	27.579
Remarks											
D. Acquisition Strategy											
Cost Plus Award Fee (CPAF) and Military Interdepartmental Purchase Request (MIPR) will be used to obtain technical analyses and technical support for safety, operations, and counter proliferation assessments. Supporting activities are contracted separately using contract strategies deemed most appropriate to the effort. All contracts will be openly competed.											
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 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 654236 / Engineering Analysis					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
FFRDC	MIPR	TBD : Kirtland AFB, NM	-	-		0.700	Mar 2018	0.700	Oct 2018	-		0.700	Continuing	Continuing	-
SBIR	TBD	TBD : Kirtland AFB, NM	-	-		0.500	Mar 2018	0.500	Oct 2018	-		0.500	Continuing	Continuing	-
Subtotal			-	-		1.200		1.200		-		1.200	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
FFRDC	MIPR	SNL : Kirtland AFB, NM	-	-		0.500	Mar 2018	0.500	Mar 2019	-		0.500	Continuing	Continuing	-
Subtotal			-	-		0.500		0.500		-		0.500	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
UARC	Reqn	JHU : Kirtland AFB, NM	-	-		0.809	Mar 2018	0.779	Mar 2019	-		0.779	Continuing	Continuing	-
Subtotal			-	-		0.809		0.779		-		0.779	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
A&AS	TBD	TBD : Kirtland AFB, NM	-	-		0.500	Mar 2018	0.500	Mar 2019	-		0.500	Continuing	Continuing	-
Subtotal			-	-		0.500		0.500		-		0.500	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force										Date: February 2018					
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support					Project (Number/Name) 654236 / Engineering Analysis					
		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			-	-		3.009		2.979		-		2.979	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force

Date: February 2018

Appropriation/Budget Activity
3600 / 5

R-1 Program Element (Number/Name)
PE 0604222F / Nuclear Weapons Support

Project (Number/Name)
654236 / Engineering Analysis

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
Engineering & Cyber security Analysis																												
Cyber security Vulnerability Assessments & Analysis																												
Documentation & Instruction Analysis & Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support	Project (Number/Name) 654236 / Engineering Analysis

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Engineering & Cyber security Analysis				
Cyber security Vulnerability Assessments & Analysis	2	2018	4	2023
Documentation & Instruction Analysis & Development	3	2018	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 655708 / Nuclear Weapons Support			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
655708: Nuclear Weapons Support	-	0.000	0.000	1.489	0.000	1.489	1.985	11.910	6.950	1.986	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
This program, BA 5, PE 0604222F, project 655708, Weapon Storage Facility Material Handling Systems, is a new start.												
A. Mission Description and Budget Item Justification												
New Weapon Storage Facilities (WSF) within AFGSC are adopting a new concept of operations by integrating maintenance and storage mission sets into one facility. To support mission generation requirements, facility support equipment and capabilities must be reviewed, modified or in extreme cases, re-developed in order to maintain operational readiness. Examples of equipment under review include but not limited to MB-4 & MHU-196/204. This review and potential modification of existing equipment ensures mission generation remains executable.												
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.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019	
Title: Weapon Storage Facility Material Handling Systems									-	0.000	1.489	
Description: Weapon Storage Facility Material Handling System Review												
FY 2018 Plans: N/A												
FY 2019 Plans: This effort initiates a review of material handling system equipment to accommodate new Weapon Storage Facilities (WSF) concept of operations by integrating maintenance and storage mission sets into one facility. Analysis will determine the ability of existing equipment capability to support mission generation requirements and facility support equipment. Analysis will determine whether modification or re-development of equipment is required.												
FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased due to FY19 new start.												
Accomplishments/Planned Programs Subtotals									-	0.000	1.489	

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018	
Appropriation/Budget Activity 3600 / 5				R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 655708 / Nuclear Weapons Support			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u> <u>Base</u>	<u>FY 2019</u> <u>OCO</u>	<u>FY 2019</u> <u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 64222F/674237: EMP Certification	-	27.579	-	-	-	-	-	-	-	0.000	27.579
Remarks											
D. Acquisition Strategy											
The acquisition strategy focuses on determining if the existing equipment can be modified or if a re-development effort is required. Once the analysis determines which course of action is required the appropriate acquisition strategy will be defined.											
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 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604222F / Nuclear Weapons Support				Project (Number/Name) 655708 / Nuclear Weapons Support					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Facility Support Equipment Analysis	MIPR	Not specified. : TBD	-	-		-		0.969		-		0.969	Continuing	Continuing	-
Subtotal			-	-		-		0.969		-		0.969	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Contractor Support	C/CPAF	Not specified. : TBD	-	-		-		0.500		-		0.500	Continuing	Continuing	-
Government Services	MIPR	Not specified. : TBD	-	-		-		0.020		-		0.020	Continuing	Continuing	-
Subtotal			-	-		-		0.520		-		0.520	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		0.000		1.489		-		1.489	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force										Date: February 2018									
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)									
3600 / 5					PE 0604222F / Nuclear Weapons Support					655708 / Nuclear Weapons Support									

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
WSF - Facility Support Equipment																												
Market Research																												
Facility Support Equipment Modification/ Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force	Date: February 2018
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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604222F / <i>Nuclear Weapons Support</i>	Project (Number/Name) 655708 / <i>Nuclear Weapons Support</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>WSF - Facility Support Equipment</i>				
Market Research	2	2019	1	2020
Facility Support Equipment Modification/Development	2	2020	4	2023