

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604222F Nuclear Weapons Support
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4,445	4,963	8,489	9,175	11,805	12,145	12,806	12,988	Continuing	Continuing
4236 Engineering Analysis	676	690	4,298	5,250	7,640	7,725	8,244	8,273	Continuing	Continuing
5708 Nuclear Weapons Support	3,769	4,273	4,191	3,925	4,165	4,420	4,562	4,715	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Provides funds for maintaining core USAF nuclear weapon system expertise. Includes in-house technical capabilities, contractual efforts, supplies and equipment, travel and salaries of the USAF Nuclear Weapons Integration Division and the USAF Nuclear Weapons and Counterproliferation Agency civilian and military nuclear weapon and counterproliferation specialists at Kirtland Air Force Base. Provides technical and programmatic guidance for continued and improved weapons capability, interoperability, safety, surety, security, development, stockpile management and retirement, and counterproliferation assessments. Customers are: DoD (Air Force, Navy, Nuclear CINCs, Joint Staff, OSD and Defense Threat Reduction Agency [DTRA]), DOE and NATO. Supports US Strategic Command and Air Combat Command Required Operational Capability 16-71 (Peacekeeper), 12-76 (Air Launched Cruise Missile), 6-76 (B61 Strategic Bomb), 6-69 (B83 Modern Strategic Bomb), and SAC System Operational Requirements Document 13-82-III (Advanced Cruise Missile). Air Force representative for development and implementation of the Joint DoD-DOE Surety Plan, DOE Stockpile Stewardship Plan, DoD/DOE Long Range Planning Assessment and the DoD/DOE Annual Certification. These plans document nuclear weapon issues which benefit from the application of risk assessment, data collection, model development and effectiveness analysis. This work is tied to the DOE nuclear weapons development process independent of the DoD acquisition system. Weapons are continuously undergoing some form of RDT&E to assure safety, reliability and operational readiness as the DoD restructures the nation's nuclear stockpile. Therefore, USAF platforms require continuing engineering development and analysis to ensure compatibility and safety of nuclear systems. Counterproliferation efforts include identifying, evaluating and assessing current and projected counterproliferation systems operating in joint environments. Funding this element is essential to maintaining current safety and reliability levels in the US nuclear stockpile as well as assessing current and future USAF counterproliferation needs.

(U) B. Budget Activity Justification: The USAF Nuclear Weapons Integration Division and the USAF Nuclear Weapons and Counterproliferation Agency are responsible for all USAF nuclear weapons program management, development, systems engineering, nuclear surety engineering, engineering analyses and weapons support procedure changes. These efforts place this project in RDT&E research category/budget activity 5, Engineering and Manufacturing Development.

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(U) C. <u>Program Change Summary (\$ in Thousands)</u>					
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget FY 1999 PB	4,456	4,977	5,391	5,605	Cont
(U) Appropriated Value	4,782	4,977			
(U) Adjustments to Appropriated Value					
a. Congressional General Reductions	-157	-14			
b. SBIR	-99				
c. Omnibus or Other Above Threshold Reprogram	-81				
d. Below Threshold Reprogramming (BTR)					
(U) Adjustments to Budget Years Since FY 1999 PB			3,098	3,570	
(U) Current Budget Submit/FY 2000 PB	4,445	4,963	8,489	9,175	Cont

(U) **Significant Program Changes:** Changes in FY 2000 - 2001 reflect increase for Phase I Agent Defeat Weapon program and transfer of civilian positions for USAF Nuclear Weapons & Counterproliferation Agency, a new HQ USAF Field Operating Agency to PE 91212F and civilian pay/non-pay inflation. FY99: \$3,000 identified as source for SBIR.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 4236		
<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4236 Engineering Analysis	676	690	4,298	5,250	7,640	7,725	8,244	8,273	Continuing	Continuing
<p>(U) A. <u>Mission Description</u> Funds the engineering analysis performed on contract for all USAF nuclear weapons, delivery systems and counterproliferation counterforce efforts. Contractors provide technical expertise unavailable through organic resources in critical areas of nuclear weapons safety and security, nuclear operations and counterproliferation. Includes Agent Defeat Weapon (ADW) Phase I analysis and development activities beginning in FY 2000.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 190 Nuclear Aircraft System Support. Revised and verified nuclear weapons loading, delivery, warhead mate and demate technical orders; completed Explosives Ordnance Disposal (EOD) technical orders and emergency response procedures; supported US Strategic Command's nuclear safe escape effort and the nuclear hardness database; performed aircraft software analysis; developed WE1841 Test Set software and procedures for surveillance testing of the B-2A; provided EOD technical support to DoD/DOE agencies; provided technical expertise for continued nuclear weapons integration on US and non-US aircraft systems; and provided logistics analysis and EOD technical support to counterproliferation study. - (U) \$ 270 Nuclear Weapons Program Support. Provided technical expertise to support development programs including flight and special pull-down testing toward meeting full B61-11 certification, alterations to B61 stockpile weapons, upgrading B61 reliability, W87 life extension program, W62 Cost, Benefit, Risk Study, W78 Joint life extension study, B83 spin rocket motor development plans, installation of B83-1/ALT 752 (new radar/height of burst), joint AF/DOE development test planning, and W84 dormant storage assessment; documented and supported weapon program actions, agreements, and program status including over 40 Project Officer Group reports, Annual Certification Reports, and B53 retirement storage; updated Stockpile-To-Target Sequence (STS) documents for new weapon environments, inactive stockpile plans for all systems and W56 dismantlement/aeroshell reuse plans; produced two major Military Characteristics (MCs) requirements reports; and completed W80 Hedge and Yield analysis studies. - (U) \$ 100 Nuclear Weapons/System Assessments. Provided technical assessments and support on nuclear safety analyses and limited special studies. - (U) \$ 116 Counterproliferation Assessments. Provided technical support for the Agent Defeat Weapon (ADW) AoA Study (DoD Phase 0) including technical expertise in the evaluation of nuclear, thermal, chemical, emitter and conventional systems identified as possible Agent Defeat concepts; performed laboratory experiments to enhance the Empirical Lethality Models (ELM); provided weapon effectiveness assessments of conventional, nuclear, and advanced technology systems. Continued assessment of countermeasures, battle damage assessment (BDA), target characterization, and operational planning; continued efforts for Validation, Verification and Accreditation (VV&A) of ADW codes and models for incorporation in USAF target planning tools; and provided other service expertise in the definition and development of issues related to ADW and counterproliferation. 										
Project 4236			Page 3 of 16 Pages				Exhibit R-2A (PE 0604222F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	4236
<ul style="list-style-type: none"> - (U) \$ 676 Total (U) <u>FY 1999 (\$ in Thousands):</u> <ul style="list-style-type: none"> - (U) \$ 100 Nuclear Aircraft System Support. Revise and verify nuclear weapons loading, delivery, warhead mate and demate, and Explosive Ordnance Disposal (EOD) technical orders; provide EOD technical support to DoD/DOE agencies; provide support on the nuclear hardness database, perform aircraft software analysis; provide technical expertise for continued nuclear weapons integration on US and non-US aircraft systems; and provide logistics analysis and EOD technical support, as required. - (U) \$ 265 Nuclear Weapons Program Support. Provide technical expertise to support development, fielding and updates of nuclear MC and STS documents; document and support all weapons safety analyses, program actions, and agreements; conduct special studies on stockpile related matters; provide technical analyses to support life extension options for B83 and ICBM warheads, W80 6.2/6.2A Study, inactive stockpile issues, use control, long term storage, and dismantlement issues to weapon Lead Project Officers. - (U) \$ 75 Nuclear Weapons/System Assessments. Provide technical assessments and support on nuclear safety analyses and limited special studies. - (U) \$ 250 Counterproliferation Assessments. Continue 1998 technical support for the ADW AoA Study (DoD Phase 0) including technical expertise in the evaluation of nuclear, thermal, chemical, emitter and conventional systems identified as possible Agent Defeat concepts; enhance the ELM; complete VV&A of ADW codes and models for incorporation in USAF target planning tools; and support final Intelligence Support Plan (ISP) requirements of ADW alternatives. - (U) \$ 690 Total (U) <u>FY 2000 (\$ in Thousands):</u> <ul style="list-style-type: none"> - (U) \$ 200 Nuclear Aircraft System Support. Revise and verify nuclear weapons loading, delivery, warhead mate and demate, and Explosive Ordnance Disposal (EOD) technical orders; provide EOD technical support to DoD/DOE agencies; provide support on the nuclear hardness database, perform aircraft software analysis; provide technical expertise for continued nuclear weapons integration on US and non-US aircraft systems; and provide logistics analysis and EOD technical support, as required. - (U) \$ 300 Nuclear Weapons Program Support. Provide technical expertise to support development, fielding and updates of nuclear weapon MC and STS documents; document and support all weapons safety analyses, program actions, and agreements; conduct special studies on stockpile related matters; provide technical analysis to support life extension options for B83, B61, W80 and ICBM warheads, inactive stockpile issues, use control, long term storage, and dismantlement issues to weapon Lead Project Officers. - (U) \$ 100 Nuclear Weapons/System Assessments. Provide technical assessments and support on nuclear safety analyses and limited special studies.. - (U) \$ 276 Counterproliferation Assessments. Provide continued technical support for counterproliferation assessments and technical expertise in the areas of nuclear, advanced technology and conventional systems identified as possible counterforce technologies; battle damage assessment platforms; and target intelligence platforms. Support efforts in fusing mission planning, counterforce technologies and intelligence requirements for developing concepts of operations and operational requirements. Provide technical and programmatic support on counterproliferation matters to the Air Force Nuclear Weapons and Counterproliferation Agency (AFNWCA) and Headquarters USAF. 		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	4236
<ul style="list-style-type: none"> - (U) \$ 978 Technical support for transitioning the ADW Phase 0 approved recommendations to the Phase I effort. Includes development of the Operational Requirements Documents (ORD), Test & Evaluation Master Plan (TEMP), Capstone Requirements Document (CRD), C4-Intelligence Support Plan (C4ISP), and other required Milestone I documentation and continued development of analytical planning to support empirical based lethality models and their validation, verification and accreditation (VV&A). - (U) \$1,965 DoD Phase I and DOE Phase 1/2/2A Efforts. Provide post-Milestone I research, development and assessments of conceptual designs, approaches, and/or parallel technologies of ADW prototypes identified during the Phase 0, Concept Exploration Phase; develop early operational assessments and analytical weaponizing tools to support technology employment; and provide support for VV&A of Phase 0 codes and models. - (U) \$ 479 Development of the analytical target planning tools to support the Phase 0 approved technologies. This includes increasing the fidelity and evaluating the uncertainty of agent lethality evaluated in ELM and incorporating the Agent Release Model (ARM), Internal Dispersion and Venting (IDV) model, ELM and the Hot Effluent Rise Model (HER)) into the integrated code Simulated Environment and Response Program Execution Nesting Tool (SERPENT); and VVA of the individual ADW codes and models for incorporation in USAF target planning tools. - (U) \$4,298 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 200 Nuclear Aircraft System Support. Revise and verify nuclear weapons loading, delivery, warhead mate and demate, and Explosive Ordnance Disposal (EOD) technical orders; provide support on the nuclear hardness database, perform aircraft software analysis; and provide technical expertise for continued nuclear weapons integration on US and non-US aircraft systems; and provided logistics analysis and EOD technical support, as required. - (U) \$ 300 Nuclear Weapons Program Support. Provide technical expertise to support development, fielding and updates of nuclear weapon MC and STS documents; document and support all weapons safety analyses, program actions, and agreements; conduct special studies on stockpile related matters, provide technical support on inactive stockpile issues, use control, long term storage, life extension and dismantlement issues to weapon Lead Project Officers. - (U) \$ 100 Nuclear Weapons/System Assessments. Provide technical assessments and support on nuclear safety analyses and limited special studies. - (U) \$ 250 Counterproliferation Assessments. Provide continued technical support for counterproliferation assessments and technical expertise in the areas of nuclear, advanced technology and conventional systems identified as possible counterforce technologies; battle damage assessment platforms; and target intelligence platforms. Support efforts in fusing mission planning, counterforce technologies and intelligence requirements for developing concepts of operations and operational requirements. Provide technical and programmatic support on counterproliferation matters to AFNWCA and Headquarters USAF. - (U) \$ 489 Technical support for execution and planning ADW Phase I efforts. Includes technology research and development, assessments, and demonstrations; continued development of SERPENT and ELM analytical planning tool efforts to support the most promising design(s) recommended during Phase 0; and analytic development and support for empirical based agent lethality models and their VV&A. 		
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604222F Nuclear Weapons Support					PROJECT 4236																																																																																				
<ul style="list-style-type: none"> - (U) \$2,933 DoD Phase I Efforts. Provide research, development and assessments of concept designs, approaches, and/or parallel technologies of ADW prototypes and development of operational assessments; develop analytical weaponeering tools to support technology employment; provide support for VV&A of Phase 0 codes and models. - (U) \$ 978 DOE Phase 1/2/2A Efforts. Provide assessments of concept designs, approaches and/or parallel technologies of ADW prototypes and development of operational assessments; continue development and evaluation of model uncertainty of empirical models for agent lethality. - (U) \$5,250 Total <p>(U) B. <u>Project Change Summary - Description of Significant Changes:</u> Funding begins in FY 2000 to support Milestone I decision based on Agent Defeat Weapon Analysis of Alternatives (AoA) recommendations.</p> <p>(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u></p> <p>(U) Not Applicable</p> <p>(U) D. <u>Acquisition Strategy:</u> Multiple small, firm fixed price contracts for contractors and MIPRs to government labs for technical analyses and technical support in safety, operations and counterproliferation assessments. ADW Phase I activities are planning several firm/fixed price contracts and MIPRs to government labs for advanced analyses and development of selected Agent Defeat concepts.</p> <p>(U) E. <u>Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 1998</u></th> <th colspan="4"><u>FY 1999</u></th> <th colspan="3"><u>FY 2000</u></th> <th colspan="2"><u>FY 2001</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) ADW AoA (Phase 0)</td> <td>*</td> <td>*</td> <td>*</td> <td>*</td> <td>*</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ADW Milestone I</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ADW Phase I</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>* - Completed Event</td> <td></td> <td>X - Planned Event</td> </tr> </tbody> </table>														<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>			<u>FY 2001</u>			1	2	3	4	1	2	3	4	1	2	3	4	(U) ADW AoA (Phase 0)	*	*	*	*	*	X	X	X	X					(U) ADW Milestone I										X				(U) ADW Phase I										X	X	X	X	* - Completed Event													X - Planned Event
	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>			<u>FY 2001</u>																																																																																			
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																			
(U) ADW AoA (Phase 0)	*	*	*	*	*	X	X	X	X																																																																																						
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999				
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 4236		
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Contractor Engineering Support				676	690	4,298	5,250			
(U)	Total				676	690	4,298	5,250			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Miscellaneous	MIPR/FFP	1Q FY98	NA	NA	Cont	676	690	4,298	5,250	Cont	Cont
DOE/Albuquerque Ops, Albuquerque, NM											
TECH REPS, Inc., Albuquerque, NM											
Orion International, Albuquerque, NM											
Naval Air Warfare Center, Indianapolis, IN											
Silicon Graphics, Albuquerque, NM											
ITT Systems, Colorado Springs, CO											
Albuquerque Logistics, Albuquerque, NM											
<u>Support and Management Organizations</u>											
None											
<u>Test and Evaluation Organizations</u>											
None											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 4236		
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>										
Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u> None										
<u>Support and Management Property</u> None										
<u>Test and Evaluation Property</u> None										
Subtotal Product Development					676	690	4,298	5,250	Cont	Cont
Subtotal Support and Management					0	0	0	0	0	0
Subtotal Test and Evaluation					0	0	0	0	0	0
Total Project					676	690	4,298	5,250	Cont	Cont

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 5708	
<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
5708 Nuclear Weapons Support	3,769	4,273	4,191	3,925	4,165	4,420	4,562	4,715	Continuing	Continuing
<p>(U) A. <u>Mission Description</u> Funds Air Force Nuclear Weapons Integration Division and the Air Force Nuclear Weapons & Counterproliferation Agency (AFNWCA) civilians at Kirtland AFB, New Mexico providing technical and engineering support for all USAF nuclear weapon systems and counterproliferation technical efforts.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$1,030 Nuclear Aircraft System Support. Supported the US Strategic Command's nuclear safe escape effort; provided Explosive Ordnance Disposal (EOD) technical support to DoD/DOE agencies; directed aircraft compatibility testing on the B-2A and B-52H; issued AF Nuclear Compatibility Certification Statements for the F-16C/D, B-52H, B-2A and B-1B; continued the US Strategic Command's nuclear weapon system surveillance tests on F-16C/D, B-52H, and PA-200 systems; provided AFMC NWSSG Member and technical support required for Special Safety Study of Weapon Storage Vault (WSV) operations in USAFE; performed independent Technical Nuclear Safety Analysis (TNSA) for the WSV study; supported design, and compatibility design criteria, standards, specifications, and related requirements documents for all USAF nuclear capable aircraft weapons systems; managed the B-52H, F-15E, PA-200 and B-2A POGs and Nuclear Airlift POG; performed independent engineering analyses for nuclear safety and compatibility certification of B-2A, F-16C/D and F-15 software and hardware modifications; directed aircraft compatibility testing on B-2A and F-15E; performed engineering evaluations and supported testing required for nuclear weapon compatibility certification; updated AF nuclear weapons Technical Orders resulting from systems and weapons hardware/software changes; chaired Technical Order review, validation/verification, and technical content conferences. - (U) \$ 680 Nuclear Ground-Launched Missile (ICBM) Support. Provided nuclear surety design criteria, standards, specification, and related requirements documents for all USAF ground-launched missile systems; provided nuclear surety design guidance to ICBM program office/contractors for Minuteman III Guidance Replacement Program (GRP), the Minuteman III Propulsion Replacement Program, Airborne Launch Control System (ALCS) transition to Navy E6B Aircraft Program, Boeing Guidance Repair Center, modification required for Peacekeeper weapon Sustainment, SIOP and Targeting Application Computer system (STACS), and Minuteman III Re-entry System Test Set, Wing Code processing System Disk Drive Replacement Program; provided nuclear certification support; performed independent nuclear surety analyses for nuclear safety design certification of weapon system modifications and upgrade programs; supported the ICBM Nuclear Surety Working Group, provided the AFMC member, technical advisors and technical support to the NWSSG special safety study for the transition of the ALCS to the Navy E6B Aircraft Program and the ICBM Operational Safety Review; provided members on the Minuteman II Unauthorized Launch Analysis Working Group and Senior Steering Group. 										
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	5708
<ul style="list-style-type: none"> - (U) \$ 700 Nuclear Weapons/Systems Assessments. Continued engineering support to Kirtland Underground Munitions Storage Complex for Blast Door maintenance, facility auxiliary battery power, and modification, test, and maintenance of Blast Containment System; defining present and future facility maintenance and support requirements for Base Civil Engineering/A-76 contract efforts; co-chairing an Intrusive Weapon Maintenance in Air Force Facilities Process Action Team (PAT) with Air Force Safety Center, supporting Lightning Protection System Working Group; provided technical support to B61 Project Officers Group (POG) by chairing the B61 POG Surety Subgroup; supporting final dynamic load and endurance test for the Type 204 munitions loading trailer; performed and submitted final evaluation for nuclear certifications; finalized and published the Strategic Earth Penetration Weapon (SEPW) study report; provided technical support on upgrade of the B52 Coded Control System. - (U) \$1,109 Nuclear Weapons Program Support. Completed nuclear weapon safety, reliability, mission analysis and compatibility studies including the 1998 Annual Certification Reports, 60-Day Special W87 Reentry Vehicle Study, W87 Life Extension Program planning and initial testing, W78 Joint Life Extension Study, and W80 Command Disable equipment test surveillance program; updated weapon use control analyses for B61 and ICBM warheads and W84 storage assessment; completed field installation of B61 alterations and changeouts of parts to upgrade the B61 reliability; extended the interim certification on the B61-11 modification program and supported flight and pull-down tests for final certification review; approved revisions to W80, B61 and B83 Military Characteristics and all Stockpile-to-Target Sequence (STS) documents; initiated W80 6.2/6.2A Joint Stockpile Life Extension Assessment, W80 Alternate Storage Container (ASC), and W80 Field Portable Gas Sampling Program; managed eight nuclear warhead Project Officer Groups; continued life extension assessments to develop, plan, schedule and execute programs for safety, security, reliability and operability actions for B61, B83, W80 and ICBM warheads; continued to develop reconfiguration and inactive stockpile plans; established the Air Force Nuclear Weapons and Counterproliferation Agency for USAF/XON. - (U) \$ 250 Counterproliferation Assessments. Provided technical guidance and support for the ADW Assessment of Alternatives (AoA) Study; provided overall program guidance and technical expertise in the areas of nuclear, thermal, chemical, emitter and conventional systems identified as possible Agent Defeat concepts; provided continued analytical assessments of nuclear, non-nuclear and advanced weapon system concepts; assessed unique ADW intelligence, countermeasure, and battle damage assessment (BDA) requirements; and conducted laboratory experiments to enhance the Empirical Lethality Models (ELM); provided program decision recommendation briefings to the Air Force Requirements Oversight Council (AFROC) and the Air Force Council (AFC). - (U) \$3,769 Total 		
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	5708
<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$1,195 Nuclear Aircraft System Support. Continue FY 1998 level of effort: support the US Strategic Command's nuclear safe escape effort; update/expand nuclear hardness database; conduct nuclear aircraft weapon system surveillance test programs; provide technical support required by NWSSG action items, Special Safety Studies, and Operational Safety Reviews; perform independent nuclear safety analyses; support design, development, standardization and procurement of stores management systems for nuclear weapons command and control; provide nuclear surety and compatibility design criteria, standards, specifications, and related requirements documents for all USAF nuclear capable aircraft weapon systems; manage the B-52H, F-15E, B-2A, PA-200 and Nuclear Airlift POGs; direct nuclear weapon aircraft interface testing on delivery aircraft as required; perform independent engineering evaluations for nuclear safety design certification of nuclear weapon system modifications; perform engineering evaluations and support testing required for nuclear weapon compatibility certification; provide Aircraft Monitor and Control (AMAC) software analysis and technical expertise for continued nuclear weapons integration on US and Non-US aircraft systems; provide revision, changes updates and publication/distribution to nuclear weapon and Explosive Ordnance Disposal (EOD) Technical Orders resulting from system and weapon hardware/software changes; chair Technical Order review, validation/verification, and technical content conferences; provide EOD technical support to DoD/DOE agencies; provide unsatisfactory report (UR) responses for resolution issues. - (U) \$ 731 Nuclear Ground-Launched Missile (ICBM) Support. Continue FY 1998 level of effort: provide nuclear surety design criteria, standards, specifications, and related requirements documents for all USAF ground-launched missile systems; provide nuclear surety design guidance to ICBM program office/contractors for weapon system modifications and upgrade programs (Minuteman III re-entry System Test Set, Minuteman III propulsion replacement Program, ICBM Wing Code Processing System), perform independent nuclear surety analyses for nuclear safety design certification of weapon system modifications; provide nuclear certification support; complete nuclear safety analysis for nuclear safety design certification of the Minuteman III GRP Program; and support NWSSG action items and Special Safety Studies as required; conduct independent Technical Nuclear Safety Analysis for Phase IV of the ICBM Operational Safety Study; provide member to the ICBM Nuclear Surety Working Group - (U) \$ 740 Nuclear Weapons/Systems Assessments. Continue FY 1998 level of effort: continue application of joint DoD/DOE nuclear surety assessment methodology to abnormal nuclear environment analyses; conduct fault tree analyses of nuclear weapons and weapon systems; provide other special assessments as capable; continue technical/engineering support for Kirtland Underground Munitions Storage Center; continue technical/engineering support for weapons and weapons systems Project Officers Groups; perform nuclear surety assessment and/or studies of weapon and weapon systems in both normal and abnormal environments as required; develop methodologies to enhance assessments and studies; and provide logistics analysis and EOD technical support, as required. - (U) \$1,250 Nuclear Weapons Program Support. Continue FY 1998 level of effort: accomplish nuclear weapon safety, reliability, mission analysis and compatibility studies; support USAF nuclear weapon stockpile activities, weapon use control analyses; and environmental and intrinsic radiation studies; continue to develop, plan, analyze, schedule and execute nuclear weapon life extension programs for safety, security, reliability and operability actions for B61, B83, W80 and ICBM warheads; continue to develop reconfiguration and inactive stockpile plans; continue support to USAF, DoD and other agencies in all facets of nuclear arsenal. 		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	5708
<ul style="list-style-type: none"> - (U) \$ 354 Counterproliferation Assessments. Continue FY 1998 level of effort: Provide technical guidance and support for the ADW AoA Phase 0 Study leading to a Milestone I decision second quarter FY00; provide overall program guidance and technical expertise in the evaluation of nuclear, advanced technology and conventional systems identified as possible Agent Defeat concepts; provide technical support for current, proposed and future counterproliferation efforts of interest to the USAF. - (U) \$ 3 Identified as source for SBIR. - (U) \$4,273 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$1,230 Nuclear Aircraft System Support. Continue FY 1999 level of effort: support the US Strategic Command's nuclear safe escape effort; update/expand nuclear hardness database; conduct nuclear aircraft weapon system surveillance test programs; provide technical support required by NWSSG action items, Special Safety Studies, and Operational Safety Reviews; perform independent nuclear safety analyses; support design, development, standardization and procurement of stores management systems for nuclear weapons command and control; provide nuclear surety and compatibility design criteria, standards, specifications, and related requirements documents for all USAF nuclear capable aircraft weapon systems; manage the B-52H, F-15E, B-2A, PA-200 and Nuclear Airlift POGs; direct nuclear weapon aircraft interface testing on delivery aircraft as required; perform independent engineering evaluations for nuclear safety design certification of nuclear weapon system modifications; perform engineering evaluations and support testing required for nuclear weapon compatibility certification; provide revisions, changes and updates to nuclear weapon Technical Orders, resulting from system and weapon hardware/software changes; chair Technical Order review, validation/verification, and technical content conferences. - (U) \$ 800 Nuclear Ground-Launched Missile (ICBM) Support. Continue FY 1999 level of effort: provide nuclear surety design criteria, standards, specifications, and related requirements documents for all USAF ground-launched missile systems; provide nuclear surety design guidance to ICBM program office/contractors for weapon system modifications and upgrade programs, perform independent nuclear surety analyses for nuclear safety design certification of weapon system modifications; provide nuclear certification support; and support NWSSG action items and Special Safety Studies as required. - (U) \$ 800 Nuclear Weapons/Systems Assessments. Continue FY 1999 level of effort: continue application of joint DoD/DOE nuclear surety assessment methodology to abnormal nuclear environment analyses; conduct fault tree analyses of nuclear weapons and weapon systems; provide other special assessments as capable. 		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604222F Nuclear Weapons Support	5708
<ul style="list-style-type: none"> - (U) \$1,010 Nuclear Weapons Program Support. Continue FY 1999 level of effort: accomplish nuclear weapon safety, reliability, mission analysis and compatibility studies; support USAF nuclear weapon stockpile activities, weapon use control analyses; and environmental and intrinsic radiation studies; continue to develop, plan, analyze, schedule and execute nuclear weapon life extension programs for safety, security, reliability and operability actions for B61, B83, W80 and ICBM warheads; continue to develop reconfiguration and inactive stockpile plans; continue support to USAF, DoD and other agencies in all facets of nuclear arsenal. - (U) \$ 351 Counterproliferation Assessments. Continue FY 1999 level of effort: Provide technical guidance and support for the ADW Phase I Study; provide overall program guidance and technical expertise in the evaluation of nuclear, advanced technology and conventional systems identified as possible Agent Defeat concepts, battle damage assessments and target intelligence platforms; provide technical direction and support for current, proposed and future counterproliferation efforts of interest to the USAF. - (U) \$4,191 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$1,317 Nuclear Aircraft System Support. Continue FY 2000 level of effort: support the US Strategic Command's nuclear safe escape effort; update/expand nuclear hardness database; conduct nuclear aircraft weapon system surveillance test programs; provide technical support required by NWSSG action items, Special Safety Studies, and Operational Safety Reviews; perform independent nuclear safety analyses; support design, development, standardization and procurement of stores management systems for nuclear weapons command and control; provide nuclear surety and compatibility design criteria, standards, specifications, and related requirements documents for all USAF nuclear capable aircraft weapon systems; manage the B-52H, F-15E, B-2A and Nuclear Airlift POGs; direct nuclear weapon aircraft interface testing on delivery aircraft as required; perform independent engineering evaluations for nuclear safety design certification of nuclear weapon system modifications; perform engineering evaluations and support testing required for nuclear weapon compatibility certification; provide revisions, changes and updates to nuclear weapon Technical Orders, resulting from system and weapon hardware/software changes; chair Technical Order review, validation/verification, and technical content conferences. - (U) \$ 860 Nuclear Ground-Launched Missile (ICBM) Support. Continue FY 2000 level of effort: provide nuclear surety design criteria, standards, specifications, and related requirements documents for all USAF ground-launched missile systems; provide nuclear surety design guidance to ICBM program office/contractors for weapon system modifications and upgrade programs, perform independent nuclear surety analyses for nuclear safety design certification of weapon system modifications; provide nuclear certification support; and support NWSSG action items and Special Safety Studies as required. - (U) \$ 858 Nuclear Weapons/Systems Assessments. Continue FY 2000 level of effort: continue application of joint DoD/DOE nuclear surety assessment methodology to abnormal nuclear environment analyses; conduct fault tree analyses of nuclear weapons and weapon systems; provide other special assessments as capable. 		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		February 1999
PE NUMBER AND TITLE 0604222F Nuclear Weapons Support		PROJECT 5708
<ul style="list-style-type: none"> - (U) \$ 726 Nuclear Weapons Program Support. Continue FY 2000 level of effort: accomplish nuclear weapon safety, reliability, mission analysis and compatibility studies; support USAF nuclear weapon stockpile activities, weapon use control analyses; and environmental and intrinsic radiation studies; continue to develop, plan, analyze, schedule and execute nuclear weapon life extension programs for safety, security, reliability and operability actions for B61, B83, W80 and ICBM warheads; continue to develop reconfiguration and inactive stockpile plans; continue support to USAF, DoD and other agencies in all facets of nuclear arsenal. - (U) \$ 164 Counterproliferation Assessments. Continue FY 2000 level of effort: Provide technical guidance and support for the ADW Phase I; provide program guidance and technical expertise in the evaluation of nuclear, advanced technology and conventional systems identified as possible Agent Defeat concepts, battle damage assessments and target intelligence platforms; provide technical direction and support for current, proposed and future counterproliferation efforts of interest to the USAF - (U) \$3,925 Total 		
<p>(U) B. <u>Project Change Summary - Description of Significant Changes:</u> Reduction in funding beginning in FY00 due to transfer USAF Nuclear Weapons and Counterproliferation Agency civilian personnel to PE 91212F. FY99: \$3,000 identified as source for SBIR.</p>		
<p>(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u></p> <p>(U) Not Applicable</p>		
<p>(U) D. <u>Acquisition Strategy:</u> RDT&E funds primarily provide for Air Force technical civilian personnel providing nuclear weapon and weapon system management and development. These scientists and engineers interface with Headquarters USAF, Air Force nuclear weapon System Program Offices, operational commands and the Department of Energy, performing engineering development and analysis to ensure continued and improved weapon system safety, security, reliability and compatibility and managing/developing counterproliferation counterforce capabilities.</p>		
<p>(U) E. <u>Schedule Profile</u></p> <p>(U) Not Applicable</p>		
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 1999						
BUDGET ACTIVITY						PE NUMBER AND TITLE						
5 - Engineering and Manufacturing Development						0604222F Nuclear Weapons Support						
						PROJECT 5708						
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>												
						<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Program Management Personnel					239	240	200	120			
(U)	Research Personnel					2,926	3,014	2,650	2,120			
(U)	Travel					300	350	370	400			
(U)	Training Development					150	150	175	200			
(U)	Research Support Equipment Acquisition					125	125	200	200			
(U)	Miscellaneous					29	391	596	885			
(U)	Identified as source for SBIR						3					
(U)	Total					3,769	4,273	4,191	3,925			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>												
Performing Organizations:												
	Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Identified as source for SBIR							3				
	<u>Product Development Organizations</u>											
	SA-ALC/NWI	N/A	N/A	N/A	N/A	Cont	3,769	2,666	2,830	3,035	Cont	Cont
	AFNWCA	N/A	N/A	N/A	N/A	Cont	0	1,604	1,361	890	Cont	Cont
	<u>Support and Management Organizations</u>											
	None											
	<u>Test and Evaluation Organizations</u>											
	None											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 5708		
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>										
Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u> None										
<u>Support and Management Property</u> None										
<u>Test and Evaluation Property</u> None										
Identified as source for SBIR						3				
Subtotal Product Development				Cont	3,769	4,270	4,191	3,925	Cont	Cont
Subtotal Support and Management				0	0	0	0	0	0	0
Subtotal Test and Evaluation				0	0	0	0	0	0	0
Total Project				Cont	3,769	4,273	4,191	3,925	Cont	Cont