

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

DATE
February 2003

BUDGET ACTIVITY
04 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0603851F ICBM - DEM/VAL

| COST (\$ in Thousands) | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Cost to Complete | Total Cost |
|---|---------|----------|----------|----------|----------|----------|----------|---------|------------------|------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | | | |
| Total Program Element (PE) Cost | 44,409 | 62,087 | 67,632 | 91,992 | 86,901 | 83,428 | 84,682 | 85,919 | Continuing | TBD |
| 1020 ICBM Guidance Applications | 16,906 | 24,552 | 18,156 | 20,423 | 20,859 | 18,530 | 20,772 | 21,050 | Continuing | TBD |
| 1021 ICBM Propulsion Applications | 1,550 | 4,281 | 24,356 | 41,399 | 42,042 | 42,064 | 39,777 | 40,386 | Continuing | TBD |
| 1022 ICBM Reentry Vehicle Applications | 19,841 | 24,530 | 17,181 | 20,423 | 21,023 | 19,920 | 21,213 | 21,515 | Continuing | TBD |
| 1023 Rocket System Launch Program | 3,521 | 31 | 31 | 33 | 33 | 34 | 35 | 35 | Continuing | TBD |
| 1024 ICBM Command & Control (C2) Applications | 409 | 1,412 | 433 | 444 | 458 | 465 | 471 | 477 | Continuing | TBD |
| 4209 Long Range Planning (LRP) | 2,182 | 7,281 | 7,473 | 9,270 | 2,486 | 2,415 | 2,414 | 2,456 | Continuing | TBD |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

In FY2004, Project 4209 Long Range Planning includes a new start effort for Analysis of Alternatives for follow on Land-Based Strategic Nuclear Deterrent (LBSND).

(U) **A. Mission Description**
 This program's efforts identify methods to reduce life cycle costs, improve nuclear safety and surety, and ensure continued ICBM viability. Program includes demonstration and validation projects for ICBM guidance options, support for reentry vehicles beyond original design life, assessment of current and future ICBM propulsion systems, and development of enhancements to ensure command and control capabilities.

(U) **B. Budget Activity Justification**
 This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component and subsystem maturity and provide risk reduction.

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| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>Total Cost</u> |
|--|----------------|----------------|----------------|-------------------|
| (U) C. Program Change Summary (\$ in Thousands) | | | | |
| (U) Previous President's Budget | 47,519 | 63,025 | 54,198 | TBD |
| (U) Appropriated Value | 47,984 | 63,025 | | |
| (U) Adjustments to Appropriated Value | | | | |
| a. Congressional/General Reductions | -681 | -667 | | |
| b. Small Business Innovative Research | -2,894 | | | |
| c. Omnibus or Other Above Threshold Reprogram | | -271 | | |
| d. Below Threshold Reprogram | | | | |
| e. Rescissions | | | | |
| (U) Adjustments to Budget Years Since FY 2003 PBR | | | 13,434 | |
| (U) Current Budget Submit/FY 2004 PBR | 44,409 | 62,087 | 67,632 | TBD |
| (U) Significant Program Changes: | | | | |

FY04: Includes adjustments to ICBM Propulsion Applications to support Nuclear Posture Review - recommended static fire demonstrations, and to ICBM Guidance Applications and Reentry Vehicle Applications.

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| COST (\$ in Thousands) | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Cost to Complete | Total Cost |
|---------------------------------|---------|----------|----------|----------|----------|----------|----------|----------|------------------|------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | | |
| 1020 ICBM Guidance Applications | 16,906 | 24,552 | 18,158 | 20,423 | 20,859 | 18,530 | 20,772 | 21,050 | Continuing | TBD |

(U) A. Mission Description

The ICBM Guidance Applications Project is required to meet on-going needs in applied strategic guidance systems and their subcomponents. This project ensures the continued readiness of our strategic deterrent forces in response to the Nuclear Posture Review, recommendations of the USSTRATCOM Strategic Advisory Group, Commander, USSTRATCOM guidance, and the Defense Science Board Task Force on Nuclear Deterrence. Efforts within this project are focused on current and future requirements, reduced life cycle costs, and increased nuclear surety and safety. These activities leverage the efforts of the Science and Technology community. The efforts are coordinated with the Navy guidance applications efforts so as to avoid duplication while realizing maximum return on the invested dollars. The key elements of the Guidance Applications Project are the continued preservation of the minimum critical technical skills and capabilities needed to respond to unexpected problems in the Minuteman guidance system, the assessment and mitigation of any degradation of aging hardware, and the development and analysis of future strategic guidance hardware.

Budget Activity Justification:

This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) FY 2002 (\$ in Thousands)
- (U) \$0 Accomplishments/Planned Program
- (U) \$5,021 Continued development and prototype of concepts for future common strategic guidance system technology
- (U) \$2,948 Continued development of radiation hard application-specific integrated circuits (ASICs) and high throughput microprocessor
- (U) \$8,937 Continued development and test of alternate instrument technology -- e.g. Accelerometer, Gyro, micro-electrical mechanical (MEMS)
- (U) \$16,906 Total

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(U) A. Mission Description Continued

| | | |
|-----|----------------------------------|---|
| (U) | <u>FY 2003 (\$ in Thousands)</u> | Accomplishments/Planned Program |
| (U) | \$0 | Continue development and prototype of concepts for future common strategic guidance system technology |
| (U) | \$7,139 | Continue development and test of radiation hard electronics for strategic guidance applications |
| (U) | \$3,447 | Continue assessment, evaluation and test of alternate instrument technology (e.g. Accelerometer, Gyro, MEMS) |
| (U) | \$8,668 | Continue development and test of alternate instrument technology (e.g. Accelerometer, Gyro, MEMS) |
| (U) | \$5,298 | Assess, develop and implement flight test experiment options to demonstrate future strategic guidance system concepts |
| (U) | \$24,552 | Total |

(U) FY 2004 (\$ in Thousands)

| | | |
|-----|----------|---|
| (U) | \$0 | Accomplishments/Planned Program |
| (U) | \$4,563 | Continue development and prototype of concepts for future common strategic guidance system technology |
| (U) | \$1,851 | Continue assessment, evaluation and test of radiation hard electronics for strategic guidance applications |
| (U) | \$5,722 | Continue development and test of alternate instrument technology (e.g. Accelerometer, Gyro, MEMS) |
| (U) | \$6,022 | Assess, develop and implement flight test experiment options to demonstrate future strategic guidance system concepts |
| (U) | \$18,158 | Total |

(U) B. Project Change Summary

(U) C. Other Program Funding Summary (\$ in Thousands)

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>Cost to</u> | <u>Total Cost</u> |
|--|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | <u>Actual</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Complete</u> | |

(U) None.

(U) D. Acquisition Strategy

Accomplish studies, analyses, and limited engineering/pre-prototype hardware development. Efforts will be conducted using contracting strategies deemed most appropriate.

(U) E. Schedule Profile

FY 2002

FY 2003

FY 2004

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| | FY 2002 | | | | FY 2003 | | | | FY 2004 | | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| (U) E. Schedule Profile Continued | | | | | | | | | | | | | |
| (U) Development/Demonstration of Future Common System Concepts (Ongoing) | | | | * | | | | 4 | | | | | X |
| (U) -- Progress Reports | | | | * | | | | 4 | | | | | X |
| (U) Alternate Instrument Technology Development (Ongoing) | | | | * | | | | X | | | | | X |
| (U) -- Progress Report | | | | | | | | X | | | | | X |
| (U) Radiation Hardened Parts Analysis (Ongoing) | | | | * | | | | X | | | | | X |
| (U) -- Progress Report | | | | | | | | X | | | | | X |
| (U) Flight Test Options Analysis | | | | | | | | X | | | | | X |
| (U) -- Progress Report | | | | | | | | X | | | | | X |
| (U) * - Completed Event X - Planned Event | | | | | | | | X | | | | | X |

RDTE PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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(U) **A. Project Cost Breakdown (\$ in Thousands)**

| | FY 2002 | FY 2003 | FY 2004 |
|--|---------|---------|---------|
| (U) Common System Concepts | 5,021 | 7,139 | 4,563 |
| (U) Radiation Hardness | 2,948 | 3,447 | 1,851 |
| (U) Alternate instrument technology (e.g. Accelerometer, Gyro, MEMS) | 8,937 | 8,668 | 5,722 |
| (U) Flight Test Options Analysis | 0 | 5,298 | 6,022 |
| (U) Total | 16,906 | 24,552 | 18,158 |

(U) **B. 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 2002 | Budget | | | | Budget to Complete | Total Program |
|--|---|--------------------------|-------------------------|--------------------|------------------------|---------|---------|---------|-------------|--------------------|---------------|
| | | | | | | FY 2002 | FY 2003 | FY 2004 | to Complete | | |
| Northrop Grumman (Prime) / C/CPAF | | Dec 97 / | Continuing | Continuing | 35,427 | 16,846 | 24,492 | 18,098 | Continuing | TBD | |
| Others TBD | | TBD | | | | | | | | | |
| Support and Management Organizations | | | | | | | | | | | |
| Other Engineering Support | Various | As Req'd | Continuing | Continuing | 3,455 | 60 | 60 | 60 | Continuing | TBD | |
| Test and Evaluation Organizations | | | | | | | | | | | |

(U) **Government Furnished Property:**

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget | | | | Budget to Complete | Total Program |
|---------------------------------|---|--------------------------|---------------|------------------------|---------|---------|---------|-------------|--------------------|---------------|
| | | | | | FY 2002 | FY 2003 | FY 2004 | to Complete | | |
| None | | | | | | | | | | |
| Support and Management Property | | | | | | | | | | |
| None | | | | | | | | | | |

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(U) Government Furnished Property Continued:

Test and Evaluation Property

None

| | <u>Total Prior to FY 2002</u> | <u>Budget FY 2002</u> | <u>Budget FY 2003</u> | <u>Budget FY 2004</u> | <u>Budget to Complete</u> | <u>Total Program</u> |
|---------------------------------|-------------------------------|-----------------------|-----------------------|-----------------------|---------------------------|----------------------|
| Subtotals | | | | | | |
| Subtotal Product Development | 35,427 | 16,846 | 24,492 | 18,098 | TBD | TBD |
| Subtotal Support and Management | 3,455 | 60 | 60 | 60 | TBD | TBD |
| Subtotal Test and Evaluation | | | | | | |
| Total Project | 38,882 | 16,906 | 24,552 | 18,158 | TBD | TBD |

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PE NUMBER AND TITLE

PROJECT

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| 1021 | ICBM Propulsion Applications | COST (\$ in Thousands) | | | | | | | | Total Cost | |
|------|------------------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------|-----|
| | | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | | |
| | | 1,550 | 4,281 | 24,356 | 41,399 | 42,042 | 42,064 | 39,777 | 40,386 | Continuing | TBD |

(U) A. Mission Description

(U) The ICBM Propulsion Application Program develops the ICBM strategic propulsion capability through projects exploring improvements and/or alternatives to current ICBM propulsion systems, conducting studies assessing application of new technology to meet future ICBM propulsion system requirements, assessing opportunities for applying common materials and technology between the ICBM and submarine-launched ballistic missile (SLBM) propulsion systems, and demonstrating application of technology developed by the Science and Technology community to the ICBM strategic systems. This approach maintains critical design development and system engineering skills and capabilities for the future.

Budget Activity Justification:

This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) FY 2002 (\$ in Thousands)
- (U) \$0 Accomplishments/Planned Program
- (U) \$347 Completed studies and continued assessments of technological developments in support of ICBM propulsion systems
- (U) \$1,203 Designed and evaluated test plans for static-fire test demonstrations of Air Force Research Laboratory (AFRL) technology in support of ICBM propulsion systems
- (U) \$1,550 Total
- (U) FY 2003 (\$ in Thousands)
- (U) \$0 Accomplishments/Planned Program
- (U) \$157 Conduct assessments of technology developments in support of ICBM propulsion systems
- (U) \$2,626 Design and evaluate solid propulsion technologies for application to ICBM subsystems through analysis and test leading to static-fire demonstrations
- (U) \$395 Define ordnance demo requirements and continue subsystem design and material/component testing
- (U) \$512 Conduct post-boost propulsion design and evaluation of advanced technologies to support ICBM applications

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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands) Continued

(U) \$591 Conduct assessments and demonstration of advanced service life prediction technology in ICBM propulsion subsystems

(U) \$4,281 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$19,448 Evaluate and test solid propulsion technologies for ICBM application through process development and stage manufacture leading to static fire testing

(U) \$4,396 Assessment and demonstration of ordnance and post-boost components technology developments

(U) \$512 Evaluate test protocols in support of hazard classification methods for ICBM solid rocket motors

(U) \$24,356 Total

(U) **B. Project Change Summary**

FY04: Funding increased to support Nuclear Posture Review (NPR) - recommended accelerated program of static fire demonstrations to ensure viability of solid rocket propulsion design and development capability.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | Cost to | Total Cost |
|--------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|------------|
| Actual | | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Complete | |

(U) None

(U) **D. Acquisition Strategy**

Studies, analyses, and motor ground test firings will be accomplished. Efforts will be conducted using contracting strategies deemed appropriate.

(U) **E. Schedule Profile**

FY 2002

FY 2003

FY 2004

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(ACD&P)

(U) E. Schedule Profile Continued

| | FY 2002 | | | FY 2003 | | | FY 2004 | | |
|--|---------|---|---|---------|---|---|---------|---|--|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| (U) Studies/Assessments of technology developments | | | | * | | | | | |
| (U) --Begin/Complete Annual Studies | | | | * | * | | | | |
| (U) Solid stage design and evaluation of solid propulsion technology | | | | * | | X | | X | |
| (U) --Begin/Complete Annual Studies | | | | * | | X | | X | |
| (U) Ordnance demo design and evaluation of technologies | | | | | | X | | X | |
| (U) --Periodic Status Report/Reviews | | | | | | X | | X | |
| (U) Post-boost propulsion design and evaluation of technologies | | | | | | X | | X | |
| (U) --Periodic Status Report/Reviews | | | | | | X | | X | |
| (U) Studies/assessments of advanced service life prediction technologies | | | | * | | X | | X | |
| (U) --Begin/Complete Annual Studies | | | | | | X | | X | |
| (U) Evaluate and test solid propulsion technologies for ICBM application | | | | | | X | | X | |
| (U) --Periodic Status Report/Reviews | | | | | | X | | X | |
| (U) Assessment/demonstration of ordnance and post-boost components tech | | | | | | X | | X | |
| (U) --Periodic Status Report/Reviews | | | | | | X | | X | |
| (U) Evaluate test protocols in support of hazard classification methods | | | | | | X | | X | |
| (U) --Periodic Status Report/Reviews | | | | | | X | | X | |
| (U) * - Completed Event X - Planned Event | | | | | | | | | |

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

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| | FY 2002 | FY 2003 | FY 2004 |
|--|---------|---------|---------|
| (U) A. Project Cost Breakdown (\$ in Thousands) | | | |
| (U) Contract Engineering Support | 347 | 0 | 0 |
| (U) Studies/Assessments of technology developments | 0 | 157 | 0 |
| (U) Solid stage demo evaluation of solid propulsion technologies | 1,203 | 2,626 | 0 |
| (U) Ordnance demo design and evaluation of technologies | 0 | 395 | 0 |
| (U) Post-boost propulsion design and evaluation of technologies | 0 | 512 | 0 |
| (U) Studies/Assessments of advanced service life prediction technologies | 0 | 591 | 0 |
| (U) Evaluate and test solid propulsion technologies for ICBM application through process development | 0 | 0 | 19,448 |
| (U) Assessment/Demonstration of ordnance and post-boost components technology developments | 0 | 0 | 4,396 |
| (U) Evaluate test protocols in support of hazard classification methods for ICBM solid rocket motors | 0 | 0 | 512 |
| (U) Total | 1,550 | 4,281 | 24,356 |

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

| | 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 2002 | Budget | | Budget to Complete | Total Program | |
|---|--|---|--------------------------|-------------------------|--------------------|------------------------|---------|---------|--------------------|---------------|-----|
| | | | | | | | FY 2002 | FY 2003 | | | |
| Product Development Organizations | | | | | | | | | | | |
| | Northrop Grumman (Prime) / C/CPAF | | Dec 97 / | Continuing | Continuing | 664 | 1,540 | 4,251 | 23,256 | Continuing | TBD |
| Others TBD | | | | | | | | | | | |
| | AFRL Edwards | PO or MIPR | TBD | Continuing | Continuing | 0 | 0 | 0 | 1,000 | Continuing | TBD |
| Support and Management Organizations | | | | | | | | | | | |
| | Prog Management | Various | As Req'd | Continuing | Continuing | 46 | 10 | 30 | 100 | Continuing | TBD |
| Test and Evaluation Organizations | | | | | | | | | | | |
| | None | | | | | | | | | | |

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(U) Government Furnished Property:

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|---------------------------------|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| | | | | | | | | | |
| None | | | | | | | | | |
| Support and Management Property | | | | | | | | | |
| None | | | | | | | | | |
| Test and Evaluation Property | | | | | | | | | |
| None | | | | | | | | | |
| Subtotals | | | | | | | | | |
| Subtotal Product Development | | | | 664 | 1,540 | 4,251 | 24,256 | TBD | TBD |
| Subtotal Support and Management | | | | 46 | 10 | 30 | 100 | TBD | TBD |
| Subtotal Test and Evaluation | | | | | | | | | |
| Total Project | | | | 710 | 1,550 | 4,281 | 24,356 | TBD | TBD |

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PROJECT
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(ACD&P)

| COST (\$ in Thousands) | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Cost to Complete | Total Cost |
|--|---------|----------|----------|----------|----------|----------|----------|---------|------------------|------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | | | |
| 1022 ICBM Reentry Vehicle Applications | 19,841 | 24,530 | 17,181 | 20,423 | 21,023 | 19,920 | 21,213 | 21,515 | Continuing | TBD |

(U) A. Mission Description

ICBM Reentry Vehicle (RV) Applications efforts ensure the Minuteman force is equipped with the safest and most reliable RVs and explore options to meet future requirements. These efforts support RVs beyond their original design life by addressing problems with operational reentry systems, meeting real on-going needs, and ensuring the availability of long-lead components/materials. This project develops methods to better predict aging phenomena and identify life cycle cost reduction methods. A key element of the RV Applications efforts is the continued preservation of the minimum critical technical skills and capabilities needed to respond to unexpected problems, aging phenomena and future requirements. RV work conducted under this program will leverage the Science & Technology community investments and coordinate with Navy RV applications program to eliminate duplication and realize synergistic cost savings. Program products are tested on a space available basis on Minuteman and Peacekeeper Force Development Evaluation (FDE) flights.

Budget Activity Justification:

This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) **FY 2002 (\$ in Thousands)** Accomplishments/Planned Program
- (U) \$0 Continued evaluation of RV material subsystems, materials aging, and material replacements by performing ground and flight tests
- (U) \$4,855 Continued design, development, and prototype flight testing of selected fuze assessment/measurement
- (U) \$3,713 Continued identification and ground testing of potential replacement options for critical RV components
- (U) \$1,488 Continued evaluation of improved accuracy measurements and methodologies
- (U) \$986 Continued evaluation of alternate flight test experiment options
- (U) \$2,978 Continued evaluation of advanced common RV designs, applications, and technologies
- (U) \$3,491 Continued development and assessment of RV Test & Evaluation methodologies and subsystems
- (U) \$2,330
- (U) \$19,841 **Total**

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(U) A. Mission Description Continued

(U) EY 2003 (\$ in Thousands)

Accomplishments/Planned Program

(U) \$0 \$5,363 Continue evaluation of RV material subsystems, materials aging, and material replacements by performing ground and flight tests

(U) \$2,705 Continue design, development, and prototype flight testing of selected fuze assessment/measurement

(U) \$1,236 Continue identification and ground testing of potential replacement options for critical RV components

(U) \$745 Continue evaluation of improved accuracy measurements and methodologies

(U) \$4,694 Continue evaluation of alternate flight test experiment options

(U) \$5,167 Continue evaluation of advanced common RV designs, applications, and technologies

(U) \$4,620 Continue development and assessment of RV Test & Evaluation methodologies and subsystems

(U) \$24,530 Total

(U) EY 2004 (\$ in Thousands)

Accomplishments/Planned Program

(U) \$0 \$4,998 Continue evaluation of RV material subsystems, materials aging, and material replacements by performing ground and flight tests

(U) \$1,121 Continue design, development, and prototype flight testing of selected fuze assessment/measurement

(U) \$1,458 Continue identification and ground testing of potential replacement options for critical RV components

(U) \$852 Continue evaluation of improved accuracy measurements and methodologies

(U) \$2,795 Continue evaluation of alternate flight test experiment options

(U) \$3,513 Continue evaluation of advanced common RV designs, applications, and technologies

(U) \$2,444 Continue development and assessment of RV Test & Evaluation methodologies and subsystems

(U) \$17,181 Total

(U) B. Project Change Summary

(U) C. Other Program Funding Summary (\$ in Thousands)

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>Cost to</u> | <u>Total Cost</u> |
|----------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | <u>Actual</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Complete</u> | |
| (U) None | | | | | | | | | | |

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

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

1022

(U) **D. Acquisition Strategy**
Studies, analyses, limited engineering, and pre-prototype hardware development will be accomplished. Efforts will be conducted using contracting strategies deemed most appropriate.

(U) **E. Schedule Profile**

| | FY 2002 | | | | FY 2003 | | | | FY 2004 | | | |
|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| (U) Materials Replacement & Aging Evaluations | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Fuze Assessment/Measurement Tool Development | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Critical Components Evaluations | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) RV Test & Evaluation Methodologies Development | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Accuracy Assessment Methodologies Development | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Advanced Common RV Designs, Applications & Technologies Evaluations | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Alternate Flight Test Options Development | | * | | * | | X | | X | | X | | X |
| (U) --Periodic Status Reports/Reviews | | | | | | | | | | | | |
| (U) Flight Tests | | | * | * | | X | X | | | X | X | |
| (U) * - Completed Event X - Planned Event | | | | | | | | | | | | |

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE **February 2003**

BUDGET ACTIVITY
04 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0603851F ICBM - DEMVAL

PROJECT
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| (U) | A. Project Cost Breakdown (\$ in Thousands) | FY 2002 | | FY 2003 | | FY 2004 | |
|-----|--|---------|--------|---------|--------|---------|--------|
| | | | | | | | |
| (U) | Evaluate Materials Subsystems and Replacements | | 4,855 | | 5,363 | | 4,998 |
| (U) | Fuze Assessment | | 3,713 | | 2,705 | | 1,121 |
| (U) | Identify/Ground Test Critical Components | | 1,488 | | 1,236 | | 1,458 |
| (U) | Accuracy Assessment Measures/Methodologies | | 986 | | 745 | | 852 |
| (U) | Flight Test Experiments Options | | 2,978 | | 4,694 | | 2,795 |
| (U) | Evaluate Advanced Common RV | | 3,491 | | 5,167 | | 3,513 |
| (U) | Develop & Assess RV T&E Methods | | 2,330 | | 4,620 | | 2,444 |
| (U) | Total | | 19,841 | | 24,530 | | 17,181 |

B. Budget Acquisition History and Planning Information (\$ in Thousands)

| (U) | Performing Organizations: Contractor or Government | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Performing Activity EAC | Project Office EAC | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|-----|---|---|--------------------------|-------------------------|--------------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| | | | | | | | | | | | |
| | | | Dec 97 / | | | 39,182 | 18,331 | 22,970 | 15,621 | | TBD |
| | Northrop Grumman (Prime) / C/CPAF | | | | | | | | | | |
| | Others TBD | | TBD | | | | | | | | |
| | Support and Management Organizations | | | | | | | | | | |
| | Other Engineering & Management Support | Various | Ongoing | Continuing | Continuing | 1,446 | 60 | 60 | 60 | Continuing | TBD |
| | Test and Evaluation Organizations | | | | | | | | | | |
| | Wright Lab | MIPR | Annual | Continuing | Continuing | 1,590 | 450 | 500 | 500 | Continuing | TBD |
| | AEDC | PO | Annual | Continuing | Continuing | 1,902 | 750 | 750 | 750 | Continuing | TBD |
| | Vanderberg AFB | PO | As Req'd | Continuing | Continuing | 146 | 250 | 250 | 250 | Continuing | TBD |

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

1022

(U) Government Furnished Property:

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|--|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| | | | | | | | | | |
| <u>Product Development Property</u> | | | | | | | | | |
| None | | | | | | | | | |
| <u>Support and Management Property</u> | | | | | | | | | |
| None | | | | | | | | | |
| <u>Test and Evaluation Property</u> | | | | | | | | | |
| None | | | | | | | | | |
| <u>Subtotals</u> | | | | | | | | | |
| Subtotal Product Development | | | | 39,182 | 18,331 | 22,970 | 15,621 | TBD | TBD |
| Subtotal Support and Management | | | | 1,446 | 60 | 60 | 60 | TBD | TBD |
| Subtotal Test and Evaluation | | | | 3,638 | 1,450 | 1,500 | 1,500 | TBD | TBD |
| Total Project | | | | 44,266 | 19,841 | 24,530 | 17,181 | TBD | TBD |

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

DATE **February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

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| 1023 | Rocket System Launch Program | COST (\$ in Thousands) | | | | | | | | Total Cost | |
|------|------------------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------|-----|
| | | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | | |
| | | 3,521 | 31 | 31 | 33 | 33 | 34 | 35 | 35 | Continuing | TBD |

(U) A. Mission Description

This task supports studies/analyses on hardware for cost effective use of excess missile assets.

Budget Activity Justification:
 This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) FY 2002 (\$ in Thousands)
 Accomplishments/Planned Program
 Continued on-going study/analysis for the adoption of low cost front-end systems for use on deactivated missile assets.
- (U) \$0
- (U) \$31
- (U) \$3,490
- (U) \$3,521
- (U) FY 2003 (\$ in Thousands)
 Accomplishments/Planned Program
 Continue on-going study/analysis for the adoption of low cost front-end systems for use on deactivated missile assets.
- (U) \$0
- (U) \$31
- (U) \$31
- (U) FY 2004 (\$ in Thousands)
 Accomplishments/Planned Program
 Continue on-going study/analysis for the adoption of low cost front-end systems for use on deactivated missile assets
- (U) \$0
- (U) \$31
- (U) \$31
- (U) Total
- (U) B. Project Change Summary

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

DATE **February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

PROJECT
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(U) C. Other Program Funding Summary (\$ in Thousands)

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>Cost to</u> | <u>Total Cost</u> |
|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | <u>Actual</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Complete</u> | |
| (U) Other APPN | | | | | | | | | | |
| (U) None | | | | | | | | | | |

(U) D. Acquisition Strategy

Studies and analyses will be performed primarily in-house augmented with contractor support as required. Special projects that might be funded under this project that require the development and/or evaluation of hardware along with the associated employment concepts will be awarded to qualified industry sources following open competition. Type contract used (e.g., CPIF, PPIF, etc) will be that deemed most advantageous to the government.

(U) E. Schedule Profile

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> |
|--|----------------|----------------|----------------|---|----------------|----------------|----------------|
| (U) Start/Complete Annual Studies/Analysis | 1 | 2 | 3 | * | 4 | 1 | 2 |
| (U) Quick Reaction Launch Capability Demo | | | | * | | | |
| (U) -- Northern Edge launch | | | | * | | | |

* - Completed Event X - Planned Event

RD T&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE **February 2003**

BUDGET ACTIVITY
04 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0603851F ICBM - DEM/VAL

PROJECT
1023

| | A. Project Cost Breakdown (\$ in Thousands) | | | |
|---|---|---------|---------|--|
| | EY 2002 | EY 2003 | EY 2004 | |
| (U) Studies/Analyses | 31 | 31 | 31 | |
| (U) Quick Reaction Launch Capability Demonstrations | | | | |
| (U) -- Northern Edge Exercise Quick Reaction Launch | 3,490 | 0 | 0 | |
| (U) Total | 3,521 | 31 | 31 | |

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**
Performing Organizations:

| Contract or Government Performing Activity | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Performing Activity EAC | Project Office EAC | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|---|---|--------------------------|-------------------------|--------------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Support and Management Organizations | | | | | | | | | | |
| Various | Various | As Req'd | N/A | 7,338 | 5,363 | 1,975 | 0 | 0 | 0 | 7,338 |
| Thiokol | FFP | Apr 02 | 600 | 600 | 0 | 600 | 0 | 0 | 0 | 600 |
| Test and Evaluation Organizations | | | | | | | | | | |
| Northrop Grumman | SS/T&M | As Req'd | N/A | N/A | 8,103 | 300 | 0 | 0 | 0 | TBD |
| Various | Various | As Req'd | Continuing | Continuing | 842 | 646 | 31 | 31 | Continuing | TBD |

(U) **Government Furnished Property:**

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|--|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Product Development Property | | | | | | | | | |
| None | | | | | | | | | |
| Support and Management Property | | | | | | | | | |
| None | | | | | | | | | |

Project 1023

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

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(U) **Government Furnished Property Continued:**

Test and Evaluation Property

None

| | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|---------------------------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Subtotals | | | | | | |
| Subtotal Product Development | 5,363 | 2,575 | 0 | 0 | 0 | 7,938 |
| Subtotal Support and Management | 8,945 | 946 | 31 | 31 | TBD | TBD |
| Subtotal Test and Evaluation | | | | | | |
| Total Project | 14,308 | 3,521 | 31 | 31 | TBD | TBD |

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

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

1024

| 1024 | ICBM Command & Control (C2) Applications | COST (\$ in Thousands) | | | | | | | | Total Cost | |
|------|--|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------|-----|
| | | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | | |
| | | 409 | 1,412 | 433 | 444 | 458 | 465 | 471 | 477 | Contributing | TBD |

(U) A. Mission Description

To maintain the ICBM weapon systems as a credible deterrent to a hostile attack requires an extremely high confidence in the Command and Control (C2) systems providing connectivity to the President and Secretary of Defense. To ensure the ICBMs can be tasked in all manners of hostile environments requires assured, survivable, and secure channels of communication to the missile Launch Control Centers (LCCs). While assured connectivity is mandated for ICBMs, ways must be found to make the C2 systems more cost effective. Continuing studies are needed to identify existing and future technologies as well as concepts that exploit state-of-the-art communications and information transfer techniques that will guarantee the required C2 support to both the current ICBM mission and those ICBM systems and missions that will evolve in the 21st century. This program accomplishes studies, demonstrations, and tests to ensure future ICBM C2 architectures, networks, and systems evolve in a planned, orderly, and cost effective manner while meeting the stringent requirements of nuclear command and control.

Budget Activity Justification:

This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) **FY 2002 (\$ in Thousands)**
 Accomplishments/Planned Program
 \$0
 Continued to develop and refine alternatives and concepts for a C2 system architecture supporting strategic missile applications
- (U) \$186
 Demonstrated, tested and evaluated alternative network architectures, applications, and technologies
- (U) \$223
 Total
- (U) \$409
- (U) **FY 2003 (\$ in Thousands)**
 Accomplishments/Planned Program
 \$0
 Continue to develop and refine alternatives and concepts that incorporate information assurance, joint interoperability, and other applicable DOD initiatives. Include options identification and analyses for an improved, survivable C2 system
- (U) \$825
 Continue demonstrations, testing and evaluation of alternative network architectures, applications, and technologies. Ensure compatibility with transformational communications studies and integrate activities.
- (U) \$587

Project 1024

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Exhibit R-2A (PE 0603851F)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

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(U) A. Mission Description Continued

(U) FY 2003 (\$ in Thousands) Continued

(U) \$1,412 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$433 Develop concepts for transformation of ICBM command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architecture for future ICBM missions, including analysis of requirements for modeling, simulation, demonstrations, and flight tests; develop plans for preserving unique strategic C2 skills and capabilities.

(U) \$433 Total

(U) B. Project Change Summary

(U) None

(U) C. Other Program Funding Summary (\$ in Thousands)

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>Cost to Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | | |

(U) None

(U) D. Acquisition Strategy

Studies and analyses, and limited engineering and pre-prototype hardware development will be accomplished. Efforts will be conducted using contracting strategies deemed most appropriate.

(U) E. Schedule Profile

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| (U) Future Concepts Study for Command & Control (Ongoing) | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| (U) --Periodic Progress Reports/Reviews | | * | | * | | X | | X |
| (U) Begin demonstrations, test, and evaluations of alternate networks | | | | * | | * | | X |
| (U) --Periodic Progress Reports/Reviews | | | | * | | * | | X |
| (U) * - Completed Event X - Planned Event | | | | | | | | |

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Exhibit R-2A (PE 0603851F)

RD T&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

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(U) A. Project Cost Breakdown (\$ in Thousands)

| | EY 2002 | EY 2003 | EY 2004 |
|--|---------|---------|---------|
| (U) System Architecture Study | 186 | 825 | 0 |
| (U) Demonstration of Alternate Network | 223 | 587 | 0 |
| (U) ICBM C4ISR Architecture Transformation | 0 | 0 | 433 |
| (U) Total | 409 | 1,412 | 433 |

(U) B. 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 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|--|---|--------------------------|-------------------------|--------------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Northrop Grumman (Prime) / C/CPAF | | Dec 97 / | Continuing | Continuing | 1,958 | 404 | 1,397 | 428 | Continuing | TBD |
| Others TBD | | TBD | | | | | | | | |
| Support and Management Organizations | | | | | | | | | | |
| Various | Various | As Req'd | N/A | N/A | 22 | 5 | 15 | 5 | Continuing | TBD |
| Test and Evaluation Organizations | | | | | | | | | | |
| None | | | | | | | | | | |

(U) Government Furnished Property:

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|---------------------------------|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Product Development Property | | | | | | | | | |
| None | | | | | | | | | |
| Support and Management Property | | | | | | | | | |
| None | | | | | | | | | |

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

04 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603851F ICBM - DEM/VAL

PROJECT

1024

(ACD&P)

(U) **Government Furnished Property Continued:**

Test and Evaluation Property

None

Subtotals

Subtotal Product Development

Subtotal Support and Management

Subtotal Test and Evaluation

Total Project

| | <u>Total Prior to FY 2002</u> | <u>Budget FY 2002</u> | <u>Budget FY 2003</u> | <u>Budget FY 2004</u> | <u>Budget to Complete</u> | <u>Total Program</u> |
|---------------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|-------------------------------|--------------------------|
| Subtotal Product Development | 1,958 | 404 | 1,397 | 428 | TBD | TBD |
| Subtotal Support and Management | 22 | 5 | 15 | 5 | TBD | TBD |
| Subtotal Test and Evaluation | | | | | | |
| Total Project | 1,980 | 409 | 1,412 | 433 | TBD | TBD |

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PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

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| COST (\$ in Thousands) | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Cost to Complete | Total Cost |
|--------------------------------|---------|----------|----------|----------|----------|----------|----------|---------|------------------|------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | | | |
| 4209 Long Range Planning (LRP) | 2,182 | 7,281 | 7,473 | 9,270 | 2,486 | 2,415 | 2,414 | 2,456 | Continuing | TBD |

Note: In FY 2004, Project 4209 Long Range Planning includes new start efforts to begin an Analysis of Alternatives for a follow on Land-Based Strategic Nuclear Deterrent (LBSND).

(U) A. Mission Description

The Long Range Planning (LRP) task analyzes ICBM systems to identify potential modifications required to meet user objectives relative to long term sustainment, technology insertion, employment, and force structure. The studies focus on system supportability, operability, reliability, and maintainability. Options/concepts generated by these studies are evaluated for feasibility, system impacts, and cost. The LRP also lays the groundwork for analysis supporting future ICBM weapon systems development and deployment.

Budget Activity Justification:

This program is in Budget Activity 04 - Advanced Concept Development and Prototypes because the efforts demonstrate technology, component, and subsystem maturity and provide risk reduction.

- (U) EY 2002 (\$ in Thousands)
- (U) \$0 Accomplished/Planned Program
- (U) \$435 Continued support of Long Range Planning tasks, development of the Systems Options Report, and update of the Logistics Program Management Plan and the ICBM Master Plan.
- (U) \$985 Continued to perform feasibility and life extension studies
- (U) \$762 Continued to perform technology insertion studies in support of changing ICBM environments
- (U) \$2,182 Total
- (U) EY 2003 (\$ in Thousands)
- (U) \$0 Accomplished/Planned Program
- (U) \$469 Continue support of Long Range Planning tasks, development of the Systems Options Report, and update of the Logistics Program Management Plan and the ICBM Master Plan
- (U) \$3,012 Continue to perform feasibility and life extension studies

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PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEMVAL

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(U) A. Mission Description Continued

(U) FY 2003 (\$ in Thousands) Continued
 (U) \$789 Continue to perform technology insertion studies in support of changing ICBM environments
 (U) \$3,011 Begin development of Threats and Scenarios database with Modeling and Simulation (M&S) capability
 (U) \$7,281 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program
 (U) \$494 Continue support of Long Range Planning tasks, development of the Systems Options Report, and update of the Logistics Program Management Plan and the ICBM Master Plan
 (U) \$1,249 Continue to perform feasibility and life extension studies
 (U) \$825 Continue to perform technology insertion studies in support of changing ICBM environments
 (U) \$4,905 Begin Analysis of Alternatives (AoA) for follow on Land-Based Strategic Nuclear Deterrent (LBSND)
 (U) \$7,473 Total

(U) B. Project Change Summary

(U) C. Other Program Funding Summary (\$ in Thousands)

| | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | Cost to | Total Cost |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|------------|
| | Actual | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Estimate | Complete | |

(U) None

(U) D. Acquisition Strategy

Studies and analyses will be accomplished. Efforts will be conducted using contracting strategies deemed most appropriate.

(U) E. Schedule Profile

FY 2002

FY 2003

FY 2004

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

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BUDGET ACTIVITY
**04 - Advanced Component Development and Prototypes
 (ACD&P)**

PE NUMBER AND TITLE
0603851F ICBM - DEM/VAL

PROJECT
4209

| | FY 2002 | | | | FY 2003 | | | | FY 2004 | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| (U) E. Schedule Profile Continued | | | | | | | | | | | | |
| (U) Contract Award for Annual Studies/Analyses | | * | * | | | X | X | | | X | X | |
| (U) --Program Reviews | | * | * | | | X | X | | | X | X | |
| (U) --Reports Received | | | | * | | | | | X | | | X |
| (U) -Threats & Scenarios DB w/Modeling & Simulation capability development | | | | | | | | X | | | | |
| (U) - Start LBSND Analysis of Alternatives | | | | | | | | | | X | | |
| * - Completed Event | | | | | | | | | | | | X |
| X - Planned Event | | | | | | | | | | | | |

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

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(U) **A. Project Cost Breakdown (\$ in Thousands)**

| | EY 2002 | EY 2003 | EY 2004 |
|--|---------|---------|---------|
| (U) Long Range Planning Tasks | 435 | 469 | 494 |
| (U) Feasibility Studies | 985 | 3,012 | 1,249 |
| (U) Technology Insertion Studies | 762 | 789 | 825 |
| (U) Threats & Scenarios database with Modeling & Simulation capability development | 0 | 3,011 | 0 |
| (U) LBSND Analysis of Alternatives | 0 | 0 | 4,905 |
| (U) Total | 2,182 | 7,281 | 7,473 |

(U) **B. 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 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|--|---|--------------------------|-------------------------|--------------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Product Development Organizations | | | | | | | | | | |
| Northrop Grumman (Prime) | C/CPAF | Dec 97 | N/A | N/A | 4,409 | 409 | 469 | 481 | Continuing | TBD |
| TBD - Annual Studies/Analysis | TBD | Annually | N/A | N/A | 0 | 1,628 | 3,656 | 1,942 | Continuing | TBD |
| TBD - Threat/Scenario/DBs | TBD | Mar 03 | N/A | 3,011 | 0 | 0 | 3,011 | 0 | 0 | 3,011 |
| TBD - LBSND AoA | TBD | Jan 04 | N/A | 11,905 | 0 | 0 | 0 | 4,905 | 7,000 | 11,905 |
| Support and Management Organizations | | | | | | | | | | |
| Various | Various | Ongoing | N/A | N/A | 2,347 | 145 | 145 | 145 | Continuing | TBD |
| Test and Evaluation Organizations | | | | | | | | | | |

(U) **Government Furnished Property:**

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|------------------|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| Project 4209 | | | | | | | | | |

UNCLASSIFIED

RD1&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

04 - Advanced Component Development and Prototypes (ACD&P)

0603851F ICBM - DEM/VAL

4209

(U) Government Furnished Property Continued:

| Item Description | Contract Method/Type or Funding Vehicle | Award or Obligation Date | Delivery Date | Total Prior to FY 2002 | Budget FY 2002 | Budget FY 2003 | Budget FY 2004 | Budget to Complete | Total Program |
|---------------------------------|---|--------------------------|---------------|------------------------|----------------|----------------|----------------|--------------------|---------------|
| | | | | | | | | | |
| None | | | | | | | | | |
| Support and Management Property | | | | | | | | | |
| None | | | | | | | | | |
| Test and Evaluation Property | | | | | | | | | |
| None | | | | | | | | | |
| Subtotals | | | | | | | | | |
| Subtotal Product Development | | | | 4,409 | 2,037 | 7,136 | 7,328 | TBD | TBD |
| Subtotal Support and Management | | | | 2,347 | 145 | 145 | 145 | TBD | TBD |
| Subtotal Test and Evaluation | | | | | | | | | |
| Total Project | | | | 6,756 | 2,182 | 7,281 | 7,473 | TBD | TBD |