## **UNCLASSIFIED**

| EXHIBIT R                          | -2, RDT&E B                    | udget Item . | Justification |         |         |         | DATE:   |         |                  |            |
|------------------------------------|--------------------------------|--------------|---------------|---------|---------|---------|---------|---------|------------------|------------|
|                                    |                                |              |               |         |         |         |         | Ju      | ne 2001          |            |
| APPROPRIATION/BUDGET ACTIVITY      | MENCLATUR                      | RE           |               |         |         |         |         |         |                  |            |
| RESEARCH DEVELOPMENT TEST & EVALUA | Radiological Controls/0603542N |              |               |         |         |         |         |         |                  |            |
| COST (\$ in Millions               | FY 2000                        | FY 2001      | FY 2002       | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | Cost to Complete | Total Cost |
| Total PE Cost                      | 0.585                          | 0.567        | 1.056         |         |         |         |         |         | CONT.            | CONT.      |
| RADIAC Development/S1830           | 0.585                          | 0.567        | 1.056         |         |         |         |         |         | CONT.            | CONT.      |
| Quantity of RDT&E Articles         |                                |              |               |         |         |         |         |         |                  |            |

#### A. Mission Description and Budget Item Justification:

Project S1830 coordinates all Navy efforts for the development of nuclear radiation detection devices in direct support of the Navy Nuclear Propulsion Program and other users by providing accurate, reliable Health Physics instrumentation at the lowest possible life cycle cost. Reliable radiation monitoring instruments are needed to ensure the radiological safety of Navy personnel. This includes hand-held RADIAC meters, personnel dose measurement devices, and area monitors used to measure radiation fields. The Navy Dosimetry System will be able to meet new NRC regulations and will provide sensitive measurements down to the levels required for all new and imminent health and safety requirements. The Multifunction RADIAC will cut calibration costs and reduce the requirements for spare parts by replacing over 16 different models of obsolete equipment. New requirements for the measurement of lower neutron levels necessitate the development of modernized instrumentation. The program is critical to joint-service radiation safety initiatives within DOD and has been coordinated with Army, Air Force, and Defense Nuclear Agency personnel to achieve the maximum cross-service applicability.

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## **UNCLASSIFIED**

| EXHIBIT R-2, RDT&E Budget Item Justification      | DATE:                          |
|---|--------------------------------|
|   | June 2001                      |
| APPROPRIATION/BUDGET ACTIVITY                     | R-1 ITEM NOMENCLATURE          |
| RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-4 | Radiological Controls/0603542N |

(U) Program Accomplishments and Plans:

#### FY 2000 ACCOMPLISHMENTS:

- (U) (\$ .292) Continue the development of Navy Dosimetry System.
- (U) (\$ .293) Continue the development of MFR directional gamma probe. Continue the development of extendable probe and frisker station.

#### FY 2001 PLAN:

- (U) (\$ .249) Complete the development of the Navy Dosimetry System.
- (U) (\$ .254) Complete the extendable probe and frisker station and begin the development of neutron probe.
- (U) (\$ .064) Resume development of the casualty dosimeter.

#### FY 2002 PLAN:

- (U) (\$ .714) Continue development of the MFR neutron probe and begin development of the radiography probe.
- (U) (\$ .146) Complete development of the casualty dosimeter.
- (U) (\$ .196) Begin enhancements for the Navy Dosimetry System.

### B. Program Change Summary:

|  | FY 2000 | FY 2001 | FY 2002 |  |
|--|---------|---------|---------|--|
| (U) FY 2001 President's Budget:  | 0.601   | 0.572   | 0.566   |  |
| (U) Appropriated Value   | 0.601   | 0.572   | 0.566   |  |
| (U) Adjustment to FY 2000/2001 Appropriated Value/FY 2001 President's Budget | -0.016  | 0.000   | 0.500   |  |
| (U) .7% Pro-Rata Reduction   |         | -0.004  |         |  |
| (U) Minor Pricing Adjustments  |         | -0.001  | -0.010  |  |
| (U) FY 2002 PRES Budget Submit:  | 0.585   | 0.567   | 1.056   |  |

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Exhibit R-2, RDT&E Budget Item Justification (Exhibit R-2, page 2 of 6)

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| EXHIBIT R-2, RDT&E Budget Item Justification      |                         | DATE:     |
|---|-------------------------|-----------|
|   |                         | June 2001 |
| APPROPRIATION/BUDGET ACTIVITY                     | R-1 ITEM NOMENCLATURE   |           |
| RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-4 | Radiological Controls/0 | 603542N   |

Change Summary Explanation:

Funding: The FY01 decrease of (\$-.020M) is for Adjustments for FY 2000/2001 Appropriated Value. The FY 01 decrease of (\$-.004M) is for .7% Congressional Pro-Rata reduction and (\$-.001M) in minor pricing adjustments. The FY 02 decrease of (\$-.010M) is for minor pricing adjustments.

Schedule: Not applicable. Technical: Not applicable.

C. Other Program Funding Summary:

To FY 2000 FY 2001 FY 2002 Complete

OPN BLI: 292000 RADIAC

4.168 8.232 7.876

CONT.

#### D. Acquisition Strategy:

Development efforts are being focused on evaluation, modification (as required to meet operational requirements), and adaptation of Commercial Off-The-Shelf technology in order to minimize total ownership costs. To the maximum extent possible new contracts are targeted for fixed price efforts to control development cost.

#### E. Schedule Profile:

**Dosimetry System** 

Delivery of Advance Development Systems – 2/00

Completion of Testing - 6/00

Milestone III Decision - 8/01

Initial Operational Capability – 12/02

MFR Enhancements/Probe Development

Delivery of Prototypes for Extendable Probe (EP) - 1/99

Completion of Testing for EP - 4/99

R-1 SHOPPING LIST - Item No. 56

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 6)

## **UNCLASSIFIED**

| EXHIBIT R-2, RDT&E Budget Item Justification                     |                         | DATE:     |
|--|-------------------------|-----------|
|  |                         | June 2001 |
| APPROPRIATION/BUDGET ACTIVITY                                    | R-1 ITEM NOMENCLATUR    | RE        |
| RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-4                | Radiological Controls/0 | 0603542N  |
| MFR Enhancements/Probe Development con't.                        |                         |           |
| Delivery of Revised Prototype - 3/01                             |                         |           |
| Completion of Testing of Revised Prototype- 7/01                 |                         |           |
| Production Contract Awarded for EP – 10/01                       |                         |           |
| Delivery of Prototypes for Directional Gamma Probe (DGP) – 11/99 |                         |           |
| Completion of Testing for DGP – 4/00                             |                         |           |
| Production Contract Awarded for DGP – 6/01                       |                         |           |
| Award Contract for Frisker Station Development - 4/00            |                         |           |

### **Casualty Dosimeter**

Complete SBIR Phase II Testing – 1/99

Completion of Testing of Frisker Station – 5/01

Complete Testing of revised Casualty Dosimeter - 9/01

Production Contract Awarded for Frisker Station - 10/01

#### **IM-239 Enhancements**

Award Enhancement Contract - 3/00

Delivery of Test Samples - 12/00

Delivery of Frisker Station - 12/00

Test and Evaluation Complete - 4/01

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Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

## **UNCLASSIFIED**

|   |          |              |           |        |       |          |                                    |                       | DATE: |       |          |       |              |  |
|---|----------|--------------|-----------|--------|-------|----------|------------------------------------|-----------------------|-------|-------|----------|-------|--------------|--|
| Exhibit R-3 Cost Analysis (page                 | ge 1)    |              |           |        |       |          |                                    |                       |       |       | June 20  | 01    |              |  |
| APPROPRIATION/BUDGET ACTIV                      | TTY      |              | PROGRAM E | LEMENT |       |          | PROJECT N                          | OJECT NAME AND NUMBER |       |       |          |       |              |  |
| RDT&E, N/BA-4 Radiological Control/0603542N RAD |          |              |           |        |       | RADIAC I | RADIAC Development Project - S1830 |                       |       |       |          |       |              |  |
| Cost Categories                                 | Contract | Performing   |           | Total  |       | FY 00    |                                    | FY 01                 | •     | FY 02 |          |       |              |  |
| (Tailor to WBS, or System/Item                  | Method   | Activity &   |           | PY s   | FY 00 | Award    | FY 01                              | Award                 | FY 02 | Award | Cost to  | Total | Target Value |  |
| Requirements)                                   | & Type   | Location     |           | Cost   | Cost  | Date     | Cost                               | Date                  | Cost  | Date  | Complete | Cost  | of Contract  |  |
| Primary Hardware Dev Dosimetry                  | C/FP     | Various (See | below)    | 8.697  | 0.000 |          | 0.000                              |                       | 0.000 |       | CONT.    | CONT. |              |  |
| Primary Hardware Dev Miscellaneo                | usC/FP   | Various      |           | 6.092  |       |          | 0.000                              |                       | 0.481 | 03/02 | CONT.    | CONT. |              |  |
| Ancillary Hardware Development                  |          |              |           |        |       |          |                                    |                       |       |       |          | 0.000 |              |  |
| Systems Engineering                             | WR       |              |           |        | 0.380 | 12/99    | 0.370                              | 10/00                 | 0.319 | 10/01 |          | 1.069 |              |  |
| Licenses  |          |              |           |        |       |          |                                    |                       |       |       |          | 0.000 |              |  |
| Tooling   |          |              |           |        |       |          |                                    |                       |       |       |          | 0.000 |              |  |
| GFE   |          |              |           |        |       |          |                                    |                       |       |       |          | 0.000 |              |  |
| Award Fees                                      |          |              |           |        |       |          |                                    |                       |       |       |          | 0.000 |              |  |
| Subtotal Product Development                    |          |              |           | 14.789 | 0.380 |          | 0.370                              |                       | 0.800 |       | CONT.    | CONT. |              |  |

#### Remarks:

Prior to 8/96 - International Sensor Technology, Pullman, Washington 12/96 - 7/98 - Keithley Radiation Measurements, Cleveland, Ohio

Follow-on contract will be competed

| Development Support Equipment |  |       |       |       |       |       | 0.000 |  |
|-------------------------------|--|-------|-------|-------|-------|-------|-------|--|
| Software Development          |  |       |       |       |       |       | 0.000 |  |
| Training Development          |  |       |       |       |       |       | 0.000 |  |
| Integrated Logistics Support  |  |       |       |       |       |       | 0.000 |  |
| Configuration Management      |  |       |       |       |       |       | 0.000 |  |
| Technical Data                |  |       |       |       |       |       | 0.000 |  |
| GFE                           |  |       |       |       |       |       | 0.000 |  |
| Subtotal Support              |  | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |  |

Remarks: Not applicable

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Exhibit R-3, Project Cost Analysis (Exhibit R-3, page 5 of 6)

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|   | ige 2) |            | PROGRAM ELEMENT      |           |       | DDO IECT N | NAME AND NU | MRED        |       | June 20  | <u> </u> |              |
|---|--------|------------|----------------------|-----------|-------|------------|-------------|-------------|-------|----------|----------|--------------|
| APPROPRIATION/BUDGET ACTIV                                    | /11 T  |            |                      | /0000F46* |       |            | _           |             | 200   |          |          |              |
| RDT&E, N/BA-4   |        | т          | Radiological Control | /0603542N | T     | RADIACI    | Development | Project/S18 |       |          |          |              |
| Cost Categories   |        | Performing | Total                |           | FY 00 |            | FY 01       |             | FY 02 |          |          |              |
| (Tailor to WBS, or System/Item                                | Method | Activity & | PY s                 | FY 00     | Award | FY 01      | Award       | FY 02       | Award | Cost to  | Total    | Target Value |
| Requirements)   | & Type | Location   | Cost                 | Cost      | Date  | Cost       | Date        | Cost        | Date  | Complete | Cost     | of Contract  |
| Developmental Test & Evaluation                               | WR     | Various    | 3.323                | 0.195     | 12/99 | 0.187      | 10/00       | 0.246       | 10/00 | CONT.    | CONT.    |              |
| Operational Test & Evaluation                                 |        |            | 0.329                |           |       |            |             |             |       |          | 0.329    |              |
| Tooling   |        |            |                      |           |       |            |             |             |       |          | 0.000    |              |
| GFE   |        |            |                      | +         |       |            |             |             |       |          | 0.000    |              |
| Subtotal T&E  |        |            | 3.652                | 0.195     |       | 0.187      |             | 0.246       |       | CONT.    | CONT.    |              |
| Contractor Engineering Support                                |        |            |                      |           |       |            |             |             |       |          | 0.000    |              |
| Government Engineering Support                                | WR     | Various    | 5.045                |           |       |            |             |             |       | CONT.    | CONT.    |              |
| Program Management Support                                    | WR     | Various    | 5.046                |           |       |            |             |             |       | CONT.    | CONT.    |              |
|   |        |            | 0.010                | 0.010     | 12/99 | 0.010      | 10/00       | 0.010       | 10/00 | CONT.    | CONT.    |              |
| Travel  |        |            | 0.788                |           |       |            |             |             |       |          |          |              |
| Travel<br>Labor (Research Personnel)                          |        |            | 0.788                |           |       |            |             |             |       |          | 0.788    |              |
| Labor (Research Personnel) Overhead                           |        |            |                      |           |       |            |             |             |       |          | 0.000    |              |
|   |        |            | 10.889               | 0.010     |       | 0.010      |             | 0.010       |       | CONT.    |          |              |
| Labor (Research Personnel) Overhead                           |        |            |                      | 0.010     |       | 0.010      |             | 0.010       |       | CONT.    | 0.000    |              |
| Labor (Research Personnel)<br>Overhead<br>Subtotal Management |        |            |                      | 0.010     |       | 0.010      |             | 0.010       |       | CONT.    | 0.000    |              |

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Exhibit R-3, Project Cost Analysis (Exhibit R-3, page 6 of 6)

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