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Exhibit R-2, RDT&E Budget Item Justification	Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E, 4	R-1 ITEM NOMENCLATURE Program Element (PE) Name and No. Radiological Control/0603542N

COST (\$ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total P.E. Cost	2.863	3.587	.605	.573	.569	.648	.631	.615	CONT.	CONT.
RADIAC Development/S1830	2.863	3.587	.605	.573	.569	.648	.631	.615	CONT.	CONT.
Project B Name/No. & subtotal cost										
Project C Name/No. & subtotal cost										
Quantity of RDT&E Articles & cost										

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 by up to 75% and reduce the requirements for spare parts by 85% by replacing over 16 different models of obsolete equipment. This project has a 5 to 1 payback ratio. 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. All OR's issued 25 Aug 1987.

- Multifunction RADIAC (MFR), OR #176-04-86
- Navy Dosimetry System, OR #180-04-87
- Neutron Dosimetry System, OR #179-04-87
- Automated RADIAC Calibration and Diagnostics System, OR #175-04-86
- Underwater RADIAC System, OR #178-04-88
- Wide Range Survey Meter, OR #177-04-87
- Tritium Monitors, OR #182-04-89
- EOD Personal Dosimeter, OR #181-04-87 (Updated 09 MAR 95 as 392-04-95)

FY1998 ACCOMPLISHMENTS:

- (U) (\$2.098) Continued development and enhancements of Navy Dosimetry System.
- (U) (\$.454) Continued development of MFR extendable probe, directional gamma probe, alpha probe, and compact neutron probe.
- (U) (\$.209) Continued development of Underwater RADIAC System.
- (U) (\$.102) Continued development of Casualty Dosimeter.

FY 1999 PLAN:

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- (U) (\$1.149) Continue development and begin testing of Navy Dosimetry System.
- (U) (\$ 1.472) Complete development of MFR extendable probe, directional gamma probe, and alpha probe. Continue development of compact neutron probe. Begin MFR control unit and MFR frisker station development.
- (U) (\$.155) Complete development of Underwater RADIAC.
- (U) (\$.214) Complete development of Casualty Dosimeter.
- (U) (\$.550) Begin enhancements to Air Particle Detectors.
- (U) (\$.047) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

FY 2000 PLAN:

- (U) (\$.305) Complete the development of Navy Dosimetry System.
- (U) (\$.300) Complete the development of MFR compact neutron probe. Begin development of Radiography probe. Continue MFR control unit enhancements and complete Frisker Station.

B. Program Change Summary:

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	2.940	3.600	3.603
(U) Appropriated Value:	3.030	3.600	
(U) Adjustment to FY 1998 Appropriated Value/ FY 1999 President's Budget:			
a. SBIR	-.053		
b. Federal Technology Transfer	-.001		
c. Congressional Undistributed Reductions	-.090		
d. RADCON Program Realignment			-3.000
e. Minor Pricing Adjustment	-.023	-.013	+.002
 (U) FY 2000/01 PRES Budget Submit:	 2.863	 3.587	 .605

Change Summary Explanation:

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Funding: FY 98 changes are due to the Small Business Innovative Research assessment (-\$.053M), Federal Technology Transfer (-\$.001M), Congressional Undistributed Reductions (-\$.090M), and minor pricing adjustments (-\$.023M). FY 99 changes are due to minor pricing adjustments (-\$.013). FY 00 changes are due to RADCON Program Realignment (-\$3.0M) and minor pricing adjustment (+\$.002).

Schedule: Not applicable.
 Technical: Not applicable.

C. Other Program Funding Summary:

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN Line 292000	6.158	4.018	7.778	8.429	7.973	8.304	8.820	8.821	CONT.	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 – 6/99
- Completion of Testing – 10/99
- Milestone III Decision – 01/00
- Initial Operational Capability – 8/01
- MFR Enhancements/Probe Development
- Delivery of Prototypes for Extendable Probe (EP) – 1/99
- Completion of Testing for EP – 4/99
- Production Contract Awarded for EP – 7/99
- Delivery of Prototypes for Directional Gamma Probe (DGP) – 4/99
- Completion of Testing for DGP – 7/99
- Production Contract Awarded for DGP – 9/99
- Award Development Contract for MFR Control Unit Enhancement – 5/99
- Delivery of MFR Control Unit Prototypes for testing – 12/99
- Completion of Testing of MFR Control Unit Prototypes – 2/00

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<p>Award Contract for Frisker Station Development – 3/99 Delivery of Frisker Station – 6/99 Completion of Testing of Frisker Station – 9/99 Delivery of Alpha Probe Samples for testing – 4/99 Completion of Testing of Alpha Probe – 7/99 Production Contract Award for Alpha Probe – 9/99 Delivery of Neutron Probe Samples for testing – 6/99 Completion of Testing of Neutron Probe – 9/99 Production Contract Award for Neutron Probe – 11/99</p> <p>Underwater RADIAC Delivery of Prototypes for Testing – 7/98 Completion of Testing – 2/99 Milestone II/III – 5/99 Initial Operational Capability – 12/99</p> <p>Casualty Dosimeter Complete SBIR Phase II Testing – 1/99</p> <p>IM-239 Enhancements Award Enhancement Contract – 6/99 Delivery of Test Samples – 3/00 Test and Evaluation Complete 6/00</p>

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Exhibit R-3 Cost Analysis		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E, 4	PROGRAM ELEMENT NAME AND NUMBER Radiological Control - 0603542N	PROJECT NAME AND NUMBER RADIAC Development Project - S1830

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total <u>PYs</u> Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development Dosimetry System	C/FP	Various *(See Remarks below)	8.464	.228	6/99	0	--	0		CONT.	CONT.	
Primary Hardware Development Miscellaneous	C/FP	Various	5.212	1.598	Various	.145	Various	0		CONT.	CONT.	
Subtotal Product Development			13.676	1.826		.145		0		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												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks: Not Applicable												

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Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total <u>PYs</u> Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation -Miscellaneous	WR	Various	2.994	.568	10/98	.149	10/99	0		CONT.	CONT.	
Subtotal T&E			2.994	.568		.149		0		CONT.	CONT.	
Remarks:												
Government Engineering Support	WR	Various	4.716	.568	10/98	.151	10/99	0		CONT.	CONT.	
Program Management Support	WR	Various	4.717	.568	10/98	.150	10/99	0		CONT.	CONT.	
Travel				.010	11/98	.010	11/99	0		CONT.	CONT.	
Subtotal Management			9.433	1.146		.311		.328		CONT.	CONT.	
Remarks:												
Total Cost			26.103	3.540		.605		.573		CONT.	CONT.	
Remarks:												

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