CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATI BA-4**				R-1 ITEM NOMENCLATURE 0603542N/Radiological Controls			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost							
Project Unit 1830/RADIAC Development	**0.935**	**1.818**	**1.901**	**1.711**	**1.237**	**1.027**	**1.071**
RDT&E Articles Qty	**5**	**25**	**20**	**0**	**0**	**0**	**0**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Mission: The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure radiation in accordance with the provisions of Title 10 of the Code of Federal Regulations (10CFR). These instruments are used on all vessels afloat and at every shore installation in order to ensure the safety of personnel and the environment. RADIACs are also required after an act of terrorism or war that involves nuclear material in order to enable continuing warfighting ability.

Justification: Many RADIAC instruments and dosimetry systems are decades old and approaching the end of their useful lives. In some cases the equipment and replacement parts are no longer manufactured, making the equipment logistically unsupportable. In other cases increasing failure rates due to age make replacements an economic efficiency improvement. In many cases a technology refresh will make both economic sense and provide increased operational capabilities.

Multi-Function RADIAC (MFR): This instrument replaces 16 families of obsolescent equipment to provide increased capability at what will be significantly lower operating costs once the MFR Control Unit and its entire complement of probes have been developed. The Control Unit and one probe are currently being fielded, but in order to achieve the full design functionality of the MFR, several probes that will detect various other types of radiation (neutron, radiography, trans-uranic X-ray, pulsed x-ray, universal) must yet be developed. Training simulators.

Naval Dosimetry System (NDS): The NDS, or personnel dosimetry system, is being developed to support routine operations and maintenance of Navy systems involving occupational exposure to radiation on nuclear ships, nuclear maintenance facilities, hospitals, weapons, and in other radiological environments. A new system is needed to replace the current CP-1112 and DT-526 system, which is approaching the end of its useful life due to increasing failure rates and the non-availablity of replacement parts.

A Casualty Dosimetry System (CDS) is needed to support continuing Fleet operations in the event of an act of terrorism or war involving nuclear materials. The current CDS that consists of the CP-95 Reader and DT-60 Dosimeter is at the end of its useful life. The readers are no longer logistically supported and only cannibalization is available to restore non-operational units.

A replacement for the AN/PDR-65 Ship Board Monitoring System must be developed.

The IM-239/WDQ Air Particle Detector (APD) and the HD-732, HD-1150 and HD-1151 Air Particle Samplers (APS) are obsolescent and will be replaced with a single unit.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603542N/Radiological Controls	1830/RADIAC Development

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.722	0.726	0.498
RDT&E Articles Quantity	5	20	10

Continue Multi-Function RADIAC (MFR) development and testing of prototype units for Frisker, Neutron, Radiography, Transuranic X-ray and Universal Probes, Training Simulators and for software development to enable multiple automated calibration of MFR components. Articles are prototypes for evaluation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.113		
RDT&E Articles Quantity	0		

Continue development of a personnel dosimetry system for the Navy Nuclear Propulsion Program. Articles are prototypes for evaluation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.100		
RDT&E Articles Quantity	0		

Continue development of a Casualty Dosimetry System. Articles are prototypes for evaluation.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603542N/Radiological Controls	1830/RADIAC Development

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.194	0.241
RDT&E Articles Quantity			5

Develop replacement for mast-mounted AN/PDR-65. Articles are prototypes for evaluation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.898	1.162
RDT&E Articles Quantity		5	5

Air Particle Detector (APD) development. Articles are prototypes for evaluation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603542N/Radiological Controls	1830/RADIAC Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Bud Controls)	0.938	1.845	1.933
Current BES/President's Budget: (FY07 Pres BudControls)	0.935	1.818	1.901
Total Adjustments	-0.003	-0.027	-0.032
Summary of Adjustments			
Other General Provisions	-0.003	-0.027	0.032
Subtotal	-0.003	-0.027	0.032

Schedule:

Additional development is required on the Casualty Dosimetry System and the Multi-Function RADIACb(MFR) Frisker Probe based on the initial prototype evaluation.

Technical:

The scope of development of the Naval Dosimetry System has been expanded to include evaluation of a secondary personnel dosimetry system for shipboard use.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603542N/Radiological Controls	PROJECT NUMBER AND NAME 1830/RADIAC Development	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN BLI 292000 RADIAC	12.401	13.053	10.373	10.720	10.365	9.498	9.730	CONT.	CONT.

E. ACQUISITION STRATEGY: *

Development efforts are being focused on evaluation, modification (as required to meet operational requirements) and adaptation of commercial-off-the-shelf (COTS) 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.

F. MAJOR PERFORMERS: **

NSWC Carderock. Science & Technology Agent, Technical Direction Agent and In-Service Engineering Assistance.
Science Applications International Corporation (SAIC). Multi-Function RADIAC Probe development, multiple awards.

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-4** | PROGRAM ELEMENT: 0603542N/Radiological Controls | PROJECT NUMBER AND NAME: 1830/RADIAC Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FP	Various	10.042			0.375	03/05	0.824	05/06	0.774	05/07		12.015	
Ancillary Hardware Development													0.000	
Component Development													0.000	
Ship Integration													0.000	
Ship Suitability													0.000	
Systems Engineering	WX	Various	1.100										1.100	
Training Development													0.000	
Licenses													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Product Development			11.142			0.375		0.824		0.774		0.000	13.115	

Remarks:

Development Support	WX	NSWC Carderock	1.685			0.290	10/04	0.400	10/05	0.410	10/06		2.785	
Software Development													0.000	
Training Development													0.000	
Integrated Logistics Support													0.000	
Configuration Management													0.000	
Technical Data													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Support			1.685			0.290		0.400		0.410		0.000	2.785	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603542N/Radiological Controls	1830/RADIAC Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SPAWARSYSCEN Chasn.	4.355			0.153	10/04	0.286	10/05	0.312	10/06		5.106	
Operational Test & Evaluation	WX	Various	0.329										0.329	
Live Fire Test & Evaluation													0.000	
Test Assets													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal T&E			4.684			0.153		0.286		0.312		0.000	5.435	
Remarks:														
Contractor Engineering Support													0.000	
Government Engineering Support	WX	NSWC Carderock	5.045										5.045	
Program Management Support	WX	NSWC Carderock	5.269			0.107	10/04	0.298	10/05	0.305	10/06		5.979	
Travel			0.335			0.010	10/04	0.010	10/05	0.100	10/06		0.455	
Labor (Research Personnel)													0.000	
SBIR Assessment													0.000	
Subtotal Management			10.649			0.117		0.308		0.405		0.000	11.479	
Remarks:														
Total Cost			28.160	0.000		0.935		1.818		1.901		0.000	32.814	
Remarks:														