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# Office Memorandum • UNITED STATES GOVERNMENT

43

TO : John A. Derry, Executive Officer  
 Division of Biology and Medicine

FROM : Robert L. Butenhoff, Chief, Radiation Instruments Branch,  
 Division of Biology and Medicine

SUBJECT: MONTHLY PROGRESS REPORT FOR THE RADIATION INSTRUMENTS BRANCH,  
 OCTOBER 1950

SYMBOL: B.R.:ALE

403861 DATE: November 15, 1950

*B.M. for R.L.B.*

*By the*

The circulation of RA-DET, starting its fourth year of publication with the November issue, has climbed to 621 copies which are distributed primarily to AEC installations and its research contractors. However, a large distribution is made to the Department of Defense, USGS, the U. S. Public Health Service, and other Government agencies having related interests requiring radiation instrumentation.

Plans are under way for the production engineering development of an Oak Ridge National Laboratory designed fast neutron survey meter of the proton recoil type. Because of the extensive interest in this instrument by Commission installations requiring reliable fast neutron survey equipment, this project will be given high priority.

Also under consideration for production development is a gamma scintillation counter, designed by MML, which not only is one of the most sensitive instruments developed to date, but is extremely stable and reliable. The possibility of using this instrument to detect smuggled nuclear weapons will be investigated.

Plans for the Radiation Instruments Branch participation in Greenhouse Project 5.1 are proceeding on schedule.

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## I. Procurement and Industrial Development Activities

### A. Summary of AEC Procurement Activities for Period October 1, 1950 - October 31, 1950

	<u>Accessories</u>	<u>Components</u>	<u>Scalars</u>	<u>Monitors</u>	<u>Personnel</u>	<u>Survey</u>	<u>Total</u>
Production Engineering and test contracts or purchase orders executed							
Number of Items	5	3	0	0	2	5	15
Amount	\$3,838	\$ 3,270	\$ 0	0	\$ 3,116	\$ 4,300	\$14,524
Office of Operations Centralized Procurement Contracts or purchase orders executed							
Number of Items	0	7	1	1	0	1	10
Amount	0	\$ 2,148	\$ 4,400	\$ 1,535	0	\$ 550	\$ 8,633

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
SINGLE REVIEW AUTHORIZED BY: <i>AA SWYMER 11/2/54</i>	DETERMINATION (CIRCLE NUMBER(S)) 1. CLASSIFICATION RETAINED 2. CLASSIFICATION CHANGED TO: 3. CONTAINS NO DOE CLASSIFIED INFO
REVIEWER (ADD): NAME: <i>ML KUBAY</i>	4. COORDINATE WITH: 5. CLASSIFICATION CANCELLED 6. CLASSIFIED INFO BRACKETED 7. OTHER (SPECIFY) WITH <i>ENCLOSURE</i>
DATE: <i>11/9/54</i>	

ORGANIZATION & MANAGEMENT

*B.M. manually Nov Rpt*

### B. AEC Sponsored Research and Development

Funds to the extent of \$25,000 have been made available to the University of California at Los Angeles to contract for the research, development and engineering to produce colorimetric dosimeter prototypes for test. These dosimeters are proposed to be available for evaluation by January 15, 1951.

### C. Catalog

Catalog edition number two is currently being released and approximately 650 copies have been distributed without cost to 150 addressees associated with Government offices or under Government contract. It is anticipated that an equal number will be sold to the public and industry by the Office of Technical Services, U. S. Department of Commerce.

### D. Inspection and Testing

One hundred and twenty five instruments received during the month of October were inspected and tested. Among these instruments were twelve NICO-developed civilian defense monitors which were the subject of a detailed report.

### E. Procurement Summary

Attachment No. 1 includes a Summary of Status of Supply and Stockpile Procurement for delivery to Commission installations. Research and development contracts and Test Purchase Orders are also reported on. The latter contracts and purchase orders differ from the supply procurement in that the services of personnel are a large part of the contract commitment. Where estimated completion dates are indicated on this attachment, requested dates have been used when delivery information has not been furnished by the contracting office or the contractor.

## II. Technical Coordination Activities

### A. Ra-Det

The latest distribution figures for RA-DET received from the Distribution Section of the Technical Information Service, ORE, include 147 addressees with a total circulation of 621 copies.

The November issue of RA-DET concludes Dr. Hartmut Kallmann's report on Fluorescence and Conductivity Phenomena, Part I of which was published in the October issue. A report by S. W. Lichtman of the Naval Research Laboratory on Pulse Geiger Tube Operation for the Measurement of High Intensities of Radiation is co-featured. The first officially released photograph of the experimental or "unclassified" face of the Brookhaven reactor appears on the cover.

## B. Conferences

Requests were transmitted to all area coordinators for suggested subjects of future conferences. Based on responses to this inquiry, a schedule will be evolved.

Three members of the Branch attended the Annual Joint AIEE/IRE Conference on Nucleonics and Medicine in New York City on October 23 through 25. Besides a two day program of technical papers presented by AEC, Department of Defense, university and industrial scientists, the conference sponsored a large exhibition of commercially available radiation detection equipment.

The Branch, cooperating with the Panel on Electron Tubes of the Research and Development Board, has extended invitations to all areas for a meeting to be held in Atlantic City on December 11 and 12 on Computer Tubes. The emphasis of this conference will be on the special characteristics and reliability required of electronic devices used in computer equipment.

Two Branch members visited the Bureau of Ships for a small private showing of prototypes of the phosphor glass dosimeters (September Progress Report, Section II, B). Their size (1" in diameter by 1/2" thick), stability, and ruggedness as well as the ranges of exposure covered show great promise for use as a military or civilian defense type dosimeter.

## C. Special Electron Tube Development Program

A meeting was held with representatives of the Radio Corporation of America, the Navy, and the AEC (September Progress Report, Section II, C) to discuss the further coordination of the AEC and the Navy programs for photomultiplier tube development. As a result of the meeting, the Navy will continue the program for the development and production of tubes for military use although it had been previously indicated that they would withdraw support.

Representatives of RCA, ORNL, and the RIF met in Oak Ridge on October 30 and 31 to discuss the technical aspects of the development program and to familiarize the RCA representatives with some of the work for which the tubes will be used.

## D. Greenhouse

During the month, the section attended to many of the details concerning the Branch participation in the Greenhouse program. These include such matters as spare parts lists, working bench space, personnel travel schedules, etc.

E. Technical Coordination

A request was received from the Hanford Operations Office for aid in securing a microbarograph capable of detecting and recording minute changes in pressure. The Division of Military Application, which was requested to determine the possibility of obtaining one of these instruments developed by the Naval Ordnance Laboratory under contract to the Air Force, will coordinate the loan between the Air Force and Hanford.

The Sanitary Engineering Department of Johns-Hopkins University requested information from the Branch on recommended types of equipment to be used in checking radioactive levels in the exhaust stacks of contaminated waste disposal equipment in connection with a contract which they have with the Commission. Since satisfactory equipment of this type is not commercially available, they were referred to three experts at Commission installations who have designed and used instruments for these purposes.

F. Production Engineering of Radiation Instruments

Plans are under way for the production engineering development of an OMNL designed fast neutron survey meter of the proton recoil type. Because of the extensive interest in this instrument by Commission installations requiring reliable fast neutron survey equipment, this project will be given high priority.

Under consideration for production development is a gamma scintillation counter also designed at Oak Ridge National Laboratory which not only is one of the most sensitive instruments developed to date, but is extremely stable and reliable. This portable instrument gives a response to background of approximately 20,000 counts per minute thus permitting a statistically reliable method of detecting small percent changes. The possibility of using this instrument to detect smuggled nuclear weapons will be investigated.

G. Meeting with Industry

Representatives of the National Radiac Company, a newly formed organization, visited the Branch to discuss the possibility of obtaining Commission support of a scintillation phosphor crystal growing project. A new process is planned to be used to produce both larger and clearer scintillators than possible by the usual processes. The feasibility of this program is being determined.

## Enclosures:

As described in LE above (in trip.)

STATUS OF SUPPLY PROCUREMENT REQUISITIONS

as of 8/31/50 file

DOE ARCHIVES

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date		Office Handling Contract
					Previous	Present	
51504	600 60	Dosimeters Chargers	Gen. 630 6/28/48	Cambridge Instrument Company	June 50	Oct. 50	OROO
52241	25	Alpha Survey Meter (Portable Poppy)	AT(45-1)187 1/6/49	Berkeley Scientific Company	June 50	Oct. 50	HOO
51776	50	Probes for Pee Wee Survey Meter	BOW-1516-50 5/23/50	NICC	----	Oct. 50	Washington
52241	10	Chargers for SPC-5B	Will be fabricated by General Electric at Richland			Complete	HOO
51544	500	Boron-lined neutron Counters	AT(30-1)419 10/28/48	General Electric	June 51	Sept. 50	NYOO

OPERATIONS &amp; MANAGEMENT

B & M  
Monthly Prog. Rpt.

STATUS OF STOCKPILE PROCUREMENT REQUISITIONS

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date		Office Handling Contract
					Previous	Present	
52237	750	.2r Dosimeter PIC-3C		National Technical Laboratory	March 50	Jan. 50	COO
52237	750	10r Dosimeters PIC-3D		Argonne National Laboratory	Dec. 50	Indefinite	COO
52237	75	Chargers, AV-3A		Argonne National Laboratory	March 50	Indefinite	COO
51773	20	SPC-1C Alpha Survey Meters	AT(49-1)436 4/3/50	NICC	-----	Sept. 50	Washington

STATUS OF PRODUCTION DEVELOPMENT PROCUREMENT REQUISITIONS

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date		Office Handling Contract	
					Previous	Present		
52201	25	Alpha-Beta-Gamma Survey Meter (SIC-T1)	AT(40-1)780 5/20/48	Sylvania Electric Products Inc.	July 50	Oct. 50	CROO	
52202	25	Beta-Gamma Survey Meter (SGM-T3)	AT(40-1)770 4/7/49	Bendix Aviation Corp.	July 50	Sept. 50	CROO	
52210	100 4	Slow Neutron Dosimeter Chargers	AT(40-1)435 10/28/48	Cambridge Instrument Company	Jan. 50	Oct. 50	NYOO	
52211	10	Alpha-Survey Meter (Walkie Poppy)	AT(40-1)430 11/15/48	General Electric	July 50	Sept. 50	NYOO	
52239	10	Alpha-Beta-Gamma Civilian Monitor	Being Negotiated by ORNL					CROO
52214	25	Filter Paper Analyzer	AT(11-1)18 4/7/49	NICC	July 50	Sept. 50	COO	
52225	60	AC Poppy	AT(40-1)775 5/17/49	Raytheon Manufacturing Company	March 50	Oct. 50	CROO	
52230	40	Scale of 8 Survey Meters	AT(04-1)429 4/8/49	Berkeley Scientific Company		Complete	SFOO	
52240	25	Pocket Electrometer PIC-15A	Will be Negotiated by SFOO					SFOO

STATUS OF TEST PROCUREMENT REQUISITIONS

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51767	17	MIC-15A Brown Electrometers	AT(40-1)809 1/13/50	Minneapolis Honeywell Regulator Company	Sept. 50	Washington
51783	5	Windowless Flow Counters BG-5B2A	AT(49-1)460 6/23/50	Tracerlab, Inc.	Oct. 50	Washington
51784	5	AV-13A Power Supply	Being Negotiated	NICC		Washington
51784	5	AV-15A Power Supply	Being Negotiated	Victoreen Instrument Company		Washington
51785	10	SGM-31A Portable Survey Meter, Model RMI	AT(49-1)462 6/26/50	Nucleonic Corporation of America	Complete	Washington
51785	10	Alpha-Beta-Gamma Probes for RMI with BG-1A22C GM Tubes	AT(49-1)462 6/26/50	Nucleonic Corporation of America	Oct. 50	Washington
51785	5	Geiger Tubes Model GM1NNA (BG-1A22D)	AT(49-1)462 6/26/50	Nucleonic Corporation of America	Oct. 50	Washington
51786	25	PIC-12A Dosimeters	Being Negotiated	Kelley-Koett Manufacturing Company		Washington
51786	25	AV-2F Chargers	Being Negotiated	Kelley-Koett Manufacturing Company		Washington
51786	2	SIC-25A Survey Meters	Being Negotiated	Kelley-Koett Manufacturing Company		Washington
51787	5	MIC-2CX2 Switch for Vibrating Reed Electrometer	Being Negotiated	Applied Physics Corp.		Washington



STATUS OF TEST PROCUREMENT REQUISITIONS  
(Continued)

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51787	5	BIC-2A Ionization Chamber for Vibrating Reed Electrometer	Being Negotiated	Applied Physics Corp.		Washington
51788	1	MIC-17A Precision Ionization Meter (Failla Design)	AT(49-1)456 6/20/50	Cambridge Instrument Company	Complete	Washington
51789	3	AC-6B Electrostatic Precipitator	AT(49-1)481 6/26/50	Mine Safety Appliances Company	Complete	Washington
51789	1	AC-8A Air Collector	AT(49-1)461 6/26/50	Mine Safety Appliances Company	Complete	Washington
51790	2	SIC-26A1 Analysis Units, Open Window	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51790	2	SIC-26A2 Analysis Units, Thin Window	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51790	2	SIC-26A3 Analysis Units, Closed Window	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51790	50	PIC-18A Pocket Chamber, Low Range	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51790	5	AE-7A Charger	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51791	8	SBX-2A Scintillation Type Survey Meter	BOW-253-51 8/11/50	General Electric	Jan. 51	Washington

STATUS OF TEST PROCUREMENT REQUISITIONS  
(Continued)

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51792	2	SIC-7B Beta-Gamma Survey Meters	Being Negotiated	Tracerlab, Inc.		Washington
51792	5	AR-12A Mechanical Registers	Being Negotiated	Tracerlab, Inc.		Washington
51792	30	PIC-16A Dosimeters	Being Negotiated	Tracerlab, Inc.		Washington
51792	5	AV-22A Chargers	Being Negotiated	Tracerlab, Inc.		Washington
51792	3	ABX-6A Alpha Scintillation Probe	Being Negotiated	Tracerlab, Inc.		Washington
51793	1	AT-24A Double Pulse Generator	BOW-1632-50	Berkeley Scientific Company	Oct. 50	Washington
51794	2	SIC-24A Zeuto	Being Negotiated	NICC		Washington
51794	5	SGM-4E Alpha-Beta-Gamma Survey Meter	Being Negotiated	NICC		Washington
51797	1	MM-22A Area Monitor	BOW-1637-50 6/20/50	Radiophone Company	Oct. 50	Washington
51799	1	MBX-2A Monitor	BOW-218-51 8/3/50	R-C Scientific Inst. Company	Oct. 50	Washington
51799	1	ABX-2A Detecting Head	BOW-218-51 8/3/50	R-C Scientific Inst. Company	Oct. 50	Washington
51799	1	ABX-3A Detecting Head	BOW-218-51 8/3/50	R-C Scientific Inst. Company	Oct. 50	Washington

STATUS OF TEST PROCUREMENT REQUISITIONS  
(Continued)

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51800	10	BE-4A Photomultiplier Tubes	Being Negotiated	Radio Corporation of America	Oct. 50	Washington
51800	10	BE-5A Photomultiplier Tubes	Being Negotiated	Radio Corporation of America		Washington
51801	2	SIC-22A Beta-Gamma Survey Meter	BOW-1638-50 6/27 50	Atomic Instrument Co.	Complete	Washington
51801	1	BG-1B26A Probing Needle Counter	Being Negotiated	Victoreen Instrument Co.		Washington
51801	2	ABX-1A Scintillation Head	BOW-1638-50 6/22/50	Atomic Instrument Co.	Complete	Washington
51803	1	CGM-26A1 Binary Scaler	BOW-325-51 8/24/50	Nucleonic Corporation of America	Nov. 50	Washington
51803	1	CGM-26B3 Decade Scaler	BOW-324-51 8/24/50	Nucleonic Corporation of America	Nov. 50	Washington
51804	5	SGM-52A Beta-Gamma Survey Meter	Being Negotiated	Victoreen Instrument Co.		Washington
51805	37	BFT-1A Neutron Thermometers	BOW-217-51 8/2/50	NICC	Feb. 51	Washington
51806	25	SIC-31A Civilian Defense Survey Meters	AT(49-1)451 6/19/50	Tracerlab, Inc.	Dec. 50	Washington
51806	20	SIC-32A Civilian Defense Survey Meters	AT(49-1)458 6/22/50	Victoreen Instrument Co.	Dec. 50	Washington

STATUS OF TEST PROCUREMENT REQUISITIONS  
(Continued)

Req.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51806	20	SIC-33A Civilian Defense Survey Meters	AT(49-1)459 6/22/50	Kelley-Koett Mfg. Co.	Dec. 50	Washington
51806	20	SIC-34A Civilian Defense Survey Meters	AT(49-1)459 6/22/50	Kelley-Koett Mfg. Co.	Dec. 50	Washington
51811	20	SIC-36A Civilian Defense Survey Meters	BOW-216-51 8/2/50	NICC	Feb. 51	Washington
51813	2	SIC-45B Survey Meter	Being Negotiated	Special Instruments Laboratory		Washington
51814	10	SIC-19C Survey Meter AN/PDR-T1	BOW-216-51 8/2/50	Signal Corps.	Indefinite	Washington
51816	50	PIC-19A Dosimeters, Low Range	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51816	5	AV-23A Chargers	BOW-324-51 8/24/50	Landsverk Electrometer Company	Nov. 50	Washington
51818	20	SGM-53A Survey Meters AN/PDR-27	BOW-291-51 8/17/50	Dept. of Defense	Indefinite	Washington
51820	10	CGM-35A Scalers	Being Negotiated	Radioactive Products		Washington

DOX ARCHIVES