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Office Memorandum • UNITED STATES GOVERNMENT

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TO : John A. Derry, Executive Officer, ~~SECRET~~ DATE: September 11, 1950
 Division of Biology and Medicine

FROM : Robert L. Eutenhoff, Chief, Radiation Instruments *Eutenhoff* **R**
 Branch, Division of Biology and Medicine

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

SYMBOL: BIR:JCG

Radiation Instruments Branch

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The first civilian defense type instrument which has become available under the Branch's development program has been tested at the Bureau of Standards for energy dependency and by the Signal Corps at Fort Monmouth, New Jersey for ruggedness and temperature and humidity dependency. Preliminary data indicate that the instrument is quite satisfactory, from both the radiation energy and ruggedness considerations. A procedure has been established whereby other instruments, as they become available, will be given the same tests.

The Steering Committee of the Atomic Energy Commission's Special Tube Development Program met in Princeton, New Jersey for the purpose of formulating a program of research and development to be conducted at the research laboratories of the Radio Corporation of America under AEC contract. Navy representatives attended the meeting and a program of inter-agency coordination was worked out. RCA was given instructions to proceed with the development of two types of photomultiplier tubes, both of which will provide research tools for the AEC scientists, facilitating certain physical measurements which have been either very difficult or actually impossible. Preliminary investigations will also be started on a combination electron gun photomultiplier device for use in the analysis of radiation spectra.

A series of meetings was held between representatives of the Naval Research Laboratory and Atomic Energy Commission personnel to exchange information on halogen filled Geiger counters and on techniques for measuring characteristics of scintillators for use in scintillation counters.

A proposal for the Radiation Instruments Branch's participation in Project Greenhouse has been submitted to Los Alamos. The primary object of this participation will be the field evaluation of civilian defense type instruments being developed under AEC sponsorship. A series of spectral dependency measurements have been made in cooperation with the Bureau of Standards to obtain information required for Project Greenhouse.

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

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I. Procurement and Industrial Development activitiesA. Summary of AEC Procurement Activities for Period August 1, 1950 - August 31, 1950

	<u>Accessories</u>	<u>Components</u>	<u>Scalers</u>	<u>Monitors</u>	<u>Personnel</u>	<u>Survey</u>	<u>Total</u>
Office of Operations Decentralized Procurement - Contracts or purchase orders executed							
Number of Items	0	4	0	0	0	1	5
Amount	0	\$ 614.50	0	0	0	\$ 143.60	\$ 758.10

B. AEC Sponsored Research and Development

A draft of a staff paper was completed during the period of this report describing the civilian radiological development programs being sponsored by the AEC; the status of the various activities is contained in detail in this paper. The report encompasses both contracts with industry initiated through the Washington Headquarters AEC Procurement Office, the programs underway at five AEC installations and a program being prosecuted at the National Radiological Defense Laboratory at San Francisco.

C. Instrument Appraisal Program

Distribution was completed of 275 copies of Appraisal List No. 2 which contains data concerning 67 items of radiation detection equipment. The listing includes preliminary Catalog sheets descriptive of newly announced commercial products which are being made available for examination by Commission establishments.

D. Catalog

Catalog issue Number 2 is now in the process of being printed and assembled by the Technical Information Division at the Oak Ridge Operations Office. The price has not yet been determined for the new Catalog. The Catalog is scheduled for distribution during the latter part of September or the early part of October.

E. Testing and Inspection

On August 31, the new quarters of the Radiation Instruments Branch inspection, testing, and calibration facilities were

approximately completed. Preparations for the removal of equipment and instruments from the National Bureau of Standards High Voltage Laboratory building to the new storage site have been completed, and it is anticipated that the removal from the NBS building will be accomplished by the middle of September.

F. Procurement Summary

Attachment No. 1 includes a Summary of Status of Supply and Stockpile Procurement for delivery to Commission installations and Naval organizations where the Commission holds Navy contracts accepted by the Atomic Energy Commission. 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. Branch Publications

The September issue of Ra-Det will include articles on a new type of gas electron tube which has been developed under an Air Force contract by Northrup Aircraft, Incorporated, and an article describing a distributed amplifier used in coincidence counting work at the Radiation Laboratory of the University of California.

Copy material for the second edition of the "Compendium of Research and Development Activities in Radiation Instrumentation" was forwarded to the Technical Information Division, Oak Ridge, on August 25 for printing and distribution. Late information concerning the instrumentation programs of eighteen AEC installations is included. Physics instrumentation distribution will be made. An inquiry was made to the Office of the Chief of Declassification with regard to the classification which the Compendium should bear. This office concurred in the present "Confidential" marking and recommended that future issues also be classified "Confidential".

B. Conferences

On September 18-20, 1950 a joint AEC-NME symposium on the "Chemistry and Physics of Radiation Dosimetry" will be held at the Army Chemical Center, Maryland, with the Technical Command of the Army Chemical Corps serving as host. Approximately sixty representatives

from the AEC and AEC contractor organizations will attend the symposium. The agenda for this conference lists papers to be presented by outstanding authorities, among whom is Dr. George V. Taplan, of the Atomic Energy Project at the University of California at Los Angeles, the developer of one type of chemical dosimeter.

C. Civilian Defense

A meeting was held with Mr. Vincent B. Lamoureux of the NSRB to discuss the many letters which the Radiation Instruments Branch is receiving concerning instrumentation for civilian defense purposes. Our present policy in answering these letters was discussed and was considered to be adequate. However, in some cases it was decided to refer the letters directly to the NSRB for reply when the questions pertain to material outside the jurisdiction of the AEC.

The civilian defense monitoring instrument developed by the New York Operations Office was tested at the Bureau of Standards for energy dependency and at Fort Monmouth, New Jersey for ruggedness and climatic dependency. Although only incomplete tests data are available, the instrument appears to be quite adequate with regard to energy dependency and ruggedness.

D. Special Electron Tube Development Program

The Steering Committee of the Atomic Energy Commission's Special Tube Development Program met in Princeton, New Jersey on August 31 and September 1 for the purpose of formulating a program of research and development to be conducted by the Research Laboratories of the Radio Corporation of America under AEC contract. Bureau of Ships representatives attended a portion of the conference and a program of information exchange and contract coordination was evolved. A decision was made that the research activities should center around the development of two types of new photomultiplier tubes -- one, a large cathode area device for use as a gamma spectrometer, and the other a high gain fast tube for general use in the analysis of nuclear radiations. It was also decided to investigate the feasibility of a tube for application as a pulse height analyzer.

During the meeting it became apparent that there is need within the AEC for a panel to coordinate the research and development of electron tubes in general. It was recommended that this group be similar in nature and function to the Panel on Electron Tubes under the Research and Development Board of the NBE. The Instruments Branch was asked to investigate the reactions to this suggestion and the feasibility of establishing such a group.

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E. Coordination with the Naval Research Laboratory

During the month, arrangements were made for personnel from the New York Operations Office and the Oak Ridge National Laboratory to visit the Naval Research Laboratory. Personnel from NYOO visited Dr. Sidney Leibson at NRL to discuss halogen filled Geiger counters. Dr. Leibson had performed much of the original work on these type tubes. ORNL personnel visited the laboratory to discuss experiments being performed on scintillators for photomultiplier tubes. Much useful information was exchanged between these groups.

Enclosures:

As described in IF above (in trip.)

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STATUS OF SUPPLY PROCUREMENT REQUISITIONS

DOE ARCHIVES

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date		Office Handling Contract
					Previous	Present	
51504	600 60	Desimeters Chargers	Gen. 630 6/28/48	Cambridge Instrument Company	June 50	Oct. 50	OROC
52221	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	BOA-1516-50 5/23/50	NICC	----	Oct. 50	Washington
52241	10	Chargers for SFC-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	NYCC

STATUS OF STOCKPILE PROCUREMENT REQUISITIONS

Q.No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date		Office Handling Contract
					Previous	Present	
52287	750	.2r Dosimeter PIC-3C		National Technical Laboratory	March 50	Jan. 50	COO
52287	750	10r Dosimeters PIC-3D		Argonne National Laboratory	Dec. 50	Indefinite	COO
52287	75	Chargers, AV-3A		Argonne National Laboratory	March 50	Indefinite	COO
51778	20	SFC-1C Alpha Survey Meters	AT(49-1)436 4/8/50	NICC	-----	Sept. 50	Washington

STATUS OF PRODUCTION DEVELOPMENT PROCUREMENT REQUISITIONS

DOE ARCHIVES

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	ORCO
52202	25	Beta-Gamma Survey Meter (SQM-T3)	AT(40-1)770 4/7/49	Bendix Aviation Corp.	July 50	Sept. 50	ORCO
52210	100 4	Slow Neutron Dosimeter Chargers	AT(40-1)435 10/28/48	Cambridge Instrument Company	Jan. 50	Oct. 50	NYCO
52211	10	Alpha-Survey Meter (Walkie Poppy)	AT(40-1)430 11/15/48	General Electric	July 50	Sept. 50	NYCO
52239	10	Alpha-Beta-Gamma Civilian Monitor	Being Negotiated by ORNL				ORCO
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	ORCO
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)480 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	SOM-31A Portable Survey Meter, Model RMI	AT(49-1)482 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)482 6/26/50	Nucleonic Corporation of America	Oct. 50	Washington
51785	5	Geiger Tubes Model GM1HMA (BG-1A22D)	AT(49-1)482 6/26/50	Nucleonic Corporation of America	Oct. 50	Washington
51786	25	PIC-12A Dosimeters	Being Negotiated	Kelley-Koett Manufacturing Company		Washington
51788	25	AV-2F Chargers	Being Negotiated	Kelley-Koett Manufacturing Company		Washington
51788	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 MEASUREMENT 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)461 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	SEM-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	BCW-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	ARX-1A Scintillation Head	BCW-1638-50 6/22/50	Atomic Instrument Co.	Complete	Washington
51803	1	CGM-26A1 Binary Scaler	BCW-325-51 8/24/50	Nucleonic Corporation of America	Nov. 50	Washington
51803	1	CGM-26B3 Decade Scaler	BCW-324-51 8/24/50	Nucleonic Corporation of America	Nov. 50	Washington
51804	5	SOM-52A Beta-Gamma Survey Meter	Being Negotiated	Victoreen Instrument Co.		Washington
51805	37	BPE-1A Neutron Thermometers	BCW-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)

DOM ARCHIVES

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
51806	20	SIC-33A Civilian Defense Survey Meters	AF(49-1)459 6/22/50	Kelley-Koett Mfg. Co.	Dec. 50	Washington
51806	20	SIC-34A Civilian Defense Survey Meters	AF(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-215-51 8/2/50	Signal Corps.	Indefinite	Washington
51816	50	FIG-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-891-51 8/17/50	Dept. of Defense	Indefinite	Washington
51820	10	CGM-35A Scalers	Being Negotiated	Radioactive Products		Washington