

File

August 6, 1951

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 Division of Biology and Medicine
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 Branch, Division of Biology and Medicine
 MONTHLY PROGRESS REPORT FOR THE RADIATION INSTRUMENTS BRANCH, JULY 1951

SYMBOL: BMR:RLB

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A. Special Electron Tube Development Program:

The third meeting of the Steering Committee for the Special Electron Tube Development Program was held on July 18 and 19 at the Radio Corporation of America Laboratories, Princeton, New Jersey. Members of the RCA staff discussed the present status of their research work on (1) the large photocathode photomultiplier tube; (2) the high gain linear structure photomultiplier tube; and (3) the single channel pulse height selecting cathode ray tube which had been developed in the last fiscal year under Sub-contract 308 with Carbide and Carbon Chemicals Corporation (CCCL). Prototypes of each of these tubes have been made but as yet are not considered sufficiently satisfactory to meet the requirements of energy spectroscopy research in our national laboratories.

The Steering Committee agreed that during the next fiscal year, the scope of RCA's research should be directed towards:

- (1) Investigation of photomultiplier tube problems including:
 - (a) performance problems in general
 - (b) loss of statics with increased current
 - (c) time measurements
 - (d) ion feedback
- (2) Development of high current photomultiplier tubes.
- (3) Investigation of inverse focus of large photocathode tube.
- (4) Investigation of ultra-violet photomultiplier tubes (if time permits)
- (5) Investigation of effects of light losses around perimeter of flat. surface photomultiplier tubes.
- (6) Preparation of report on means of taking information out of scintillation counter systems.
- (7) Development of pulse height analyzer tubes (10 channel).

The following two new members were elected to the Steering Committee: Mr. H. D. Levine, New York Operations Office, and Mr. Richard W. Johnston, Radiation Instruments Branch, appointed as Secretary to the Committee.

ORGANIZATION & MANAGEMENT 8

*Bt M Moraki
 Prog. Rpt.*

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B. Radiation Instruments Research and Development:

1. Oak Ridge Operations Office has authorized ORNL to commence negotiations for a production engineering contract for the fast neutron dose rate meter with funds to be provided by the Branch and technical guidance under ORNL.
2. The Naval Radiological Defense Laboratory contract for the development of high-range portable monitoring instruments for civil defense is being expanded to permit the laboratory to complete their development which will be done with no increase in funds over the \$56,000 originally allotted to them.
3. The Chemical Corps at Hgwood, Maryland has advised the Branch that funds for the extension of the UGLA contract for the development of high range calorimetric dosimeters will be shortly available.
4. The National Bureau of Standards will furnish the Radiation Instruments Branch under the Zamboni File (high voltage) battery development contract (1) a 3000 volt pile for inclusion in a K-25 designed small portable alpha proportional counter and (2) 60 volt piles to be used in a hermetically sealed quartz fibre dose rate meter developed at Argonne National Laboratory. The indefinite life of the Zamboni File will permit the operation of the Argonne instrument to be continuous and indefinite and since it operates on the Quartz fibre principle once it is calibrated and sealed, the instrument should require no further maintenance barring accidental mechanical damage.

C. Testing and Evaluation:

During July, five types of radiation measurement devices were submitted to the N. B. S. for evaluation; two types were tested in order to obtain calibration and spectral dependence information on instruments field tested at Greenhouse; one type was tested for the Instrument Division at K-25; two types were tested under the R. I. B. evaluation program. In addition, the R. I. B. supplied the N. B. S. with 10 dosimeters to be tested for directional sensitivity.

D. Instrument Appraisal Program:

During the month of July, 20 radiation detection instruments valued at \$5280 were received in stock and 41 instruments valued at \$13,744 were shipped to Atomic Energy Commission areas for inspection and evaluation. New equipment valued at \$1890 was ordered during the month.

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E. Special Loan of Instruments:

Preliminary arrangements have been made with the Food and Drug Administration to loan that agency 32 survey meters for a period of two to three months for use in training inspectors and chemists.

Eight scaling units and one automatic sample changer were loaned to the USAF for use in test activities. It is anticipated that these instruments may be permanently transferred at a later date.

F. Washington Emergency Monitoring Team:

The radiation detection instruments in the Emergency Monitoring Team Kits were calibrated and fresh film badges were supplied.

G. Procurement Summary:

Attached is a summary of the status of existing supply, stockpile, production development and test requisitions.

Attachments:

As described in G. (in trip.)

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STATUS OF INCOMPLETE REQUISITIONS

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
191	1500	Born-Used medium Counters	AC(30-1)119 10/22/50	General Electric Company	June 52	WFOO
				<u>STOCKPILE</u>		
2237	750	.2r Dosimeter, PTC-3C	AL-9/1821 1/18/50	A. O. Beckman	December 51	COO
2237	75	Chargers for PTC-3C and PTC-3D	" " "	" " "	December 51	COO
2237	750	10r Dosimeter, PTC-3D	AL-9/1821 12/8/50	Cambridge Instru- ment Company	December 51	COO
1831	60	Transmitter Receiver Portable			November 51	Washington
1831	15	Transmitter Receiver Mobile			November 51	Washington

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STATUS OF INCOMPLETE REQUISITIONS

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Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
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PRODUCTIVE DEVELOPMENT

52210	100	PIC-11A Slow Neutron Dosimeter	AT(ho-1)436 10/28/48	Cambridge Instrument Company	September 51	NYOO
52210	4	Chargers	"	"	September 51	NYOO
52239	10	Alpha-Beta-Gamma Civilian Monitor	WGL-A1713 6/23/50	Raytheon Manufacturing Company	September 51	ORNL
52240	20	Pocket Electrometer, PIC-15A	Will be negotiated by SFOO			SFOO

TEST

51704	5	AV-15A Power Supply	BON-347-51 9/25/50	Victoreen Instrument Company	July 51	Washington
51711	25	PIC-12A Dosimeters	BON-421-51 10/25/50	Kelley-Koett Manufacturing Company	August 51	Washington
51786	5	SIC-25A Survey Meters	BON-421-51 10/25/50	Kelley-Koett Manufacturing Company	August 51	Washington
51790	50	PIC-32A Pocket Chamber Low Range	BON-324-51 8/24/50	Lansverk Electronics Company	September 51	Washington

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STATUS OF INCON L TR INSTRUMENTS

DOE ARCHIVES

Seq. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
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TEST (CONTINUATION)

1790	5	AE-7A Charger	DOE-324-51 8/24/50	Lanisverk Electrometer Company	September 51	Washington
1792	30	PIC-16A Dosimeters	DOE-423-51 10/3/50	Tracerlab, Inc.	September 51	Washington
1792	5	AV-22A Chargers	DOE-423-51 10/3/50	Tracerlab, Inc.	September 51	Washington
1811	20	SIC-36A Civilian Defense Survey Meters	DOE-216-51 8/2/50	NICC	September 51	Washington
1813	2	SIC-45B Survey Meters	DOE-631-51 11/7/50	Special Instruments Laboratory	August 51	Washington
1814	10	PIC-19C Survey Meters	DOE-216-51 8/2/50	Signal Corps	Indefinite	Washington
1815	50	PIC-19A Dosimeters, Low Range	DOE-324-51 8/24/50	Lanisverk Electrometer Company	August 51	Washington
1816	5	AV-23A Chargers	DOE-324-51 8/24/50	Lanisverk Electrometer Company	August 51	Washington
1818	20	SEA-53A Survey Meters An/WR-27	DOE-291-51 8/17/50	Department of Defense	Indefinite	Washington

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STATE OF INCOME TAX REVISIONS

Req. No.	Quantity	Instrument	Contract Issued	Company	Estimated Completion Date	Office Handling Contract
<u>TEST (CONTINUATION)</u>						
821	20	Photomultiplier Tubes BE-5A	BOX-422-51 9/29/50	Radio Corporation of America	September 51	Washington
823	3	Electrometer, MIC-19A	BOX-713-51 11/13/50	Loudon Instruments Incorporated	September 51	Washington
825	1	Oscilloscope, AT-14B	BOX-630-51 11/6/50	Tektronix, Inc.	September 51	Washington
826	10	Radiation Monitor, MIC-20A	BOX-808-51 12/15/51	General Electric Co.	August 51	Washington
830	500	RF-84 Radiation Detection Element	BOX-807-51 12/13/50	Signal Corps	Indefinite	Washington
830	200	RF-80 Radiation Detection Element	BOX-807-51 12/13/50	Signal Corps	Indefinite	Washington
830	50	RF-7A Photographic Film Holder	BOX-707-51 12/13/50	Signal Corps	Indefinite	Washington
832	6	Reamer Readers	Being Negotiated	Faler Electric Company		
837	10	RG-3A7A GM Tubes	BOX-1538-51 4/2/51	Nuclear Research Corp.	September 51	Washington
837	5	RG-1A33A GM Tubes	BOX-1538-51 4/2/51	Nuclear Research Corp.	September 51	Washington

STATUS OF INCOMPLETE REQUISITIONS

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<u>Req. No.</u>	<u>Quantity</u>	<u>Instrument</u>	<u>Contract Issued</u>	<u>Company</u>	<u>Estimated Completion Date</u>	<u>Office Handling Contract</u>
<u>TEST (CONTINUATION)</u>						
51800	5	BG-1A33B GM Tubes	BOW-1538-51 4/2/51	Nuclear Research Corp.	September 51	Washington
51840	5	Scalers, CGM-37A	BOW-1686-51 5/15/51	Berkeley Scientific Corporation	August 51	Washington
51840	5	Count Rate Meter, MEM-26A	BOW-1686-51 5/15/51	Berkeley Scientific Corporation	August 51	Washington
51841	5	Scalers, CA-20A	BOW-1685-51 5/24/51	Hewlett-Packard Co.	September 51	Washington
51842	1	Scaler, CGM-38A	BOW-1862-51 6/7/51	Radiation Instrument Development Lab.	October 51	Washington
51842	1	Scaler, CGM-38B	BOW-1862-51 6/7/51	Radiation Instrument Development Lab.	October 51	Washington
51844	3	Probe for Alpha, Beta, Gamma and Neutron	Being Negotiated	General Electric		Washington

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