Howard C. Brown, Jr., Executive Officer Division of Biology and Medicine Robert L. Butenhoff, Chief, Radiation Instruments Branch, Division of Biology and Medicina MONTHLY PROGRESS REPORT FOR THE RADIATION INSTRUMENTS BRANCH, JULY 1951

1951

SYMBOL: BMR:RLB

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A. Special Electron Tube Development Program:

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

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

- Investigation of photographics tube problems including:
 - (a) performance problems in general -(b) loss of statics with increased current
 - (c) time measurements
 - (d) ion feedback
- Development of high current photomultiplier tubes.
- 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 photosultiplier tubes.
- (6) Preparation of report on means of taking information out of scintillation counter systems.
- 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.

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B. Radiation Instruments Research and Developments

- 1. Oak Ridge Operations Office has authorised GRML 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 CRML.
- 2. The Haval Radiological Defense Laboratory contract for the development of high-range portable monitoring instruments for civil defense is being expended 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. ThereGhamical Corps at Edgewood, Maryland has advised the Branch that funds for the extension of the WLA contrast for the development of high range colorimetric desimeters will be shortly available.
- Instruments Branch under the Emboni File (high voltage)
 battery development contract (1) a 3000 welt 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 Zemboni 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 smaled, 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 bested 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 Programs

During the month of July, 20 radiation detection instruments valued at \$5280 were received in stock and Al 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.

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 bedges were supplied.

G. Procurement Summery

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

Attachments: As described in G. (in trip.)

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2237	75	lar Doeineter, PIC-3D	12/8/50	Caucaridge Instru-	December 51	93
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Mag.	quantity	Instrument	Contract Issued	Company		Estimated Completion Date	Office Hamiling Contract
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321.0	100	PIC-lik Slow Newtron Dosimeter	11(h0-1)h36 10/28/18	Company Company	stroment	September 51	NYOO
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M	25	PIC-12A Dominators	BOX-121-51 10/25/50	Kelley-Koet turing Compa		August 51	Washington
51786	5	SIC-25A Survey Motors	10/25/50	Keller-Koet turing Comp		August 51.	Washington
51 790	50	PIC-32A Pocket Chamber Low Range	8/21/50	Landsverk El Company	326 U	DOE ARCHIVES S. ATOMIC ENERGY COMMISSION	Washington
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30	PIC-16A Dosimeters	80%-123-51 10/3/50	Tracerlab, Inc.	September 51	Wastington
5	AV-22A Chargers	BON-1423-51 10/3/50	Tracerlab, Inc.	September 51.	Washington
20	SIC-36A Civilian Defense Survey Maters	807-21/-51 8/2/50	HICC	September 51	Washington
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eq.	Quantity	Instrument (Contract Issued	Company	Estimated Completion Date	Office Hardling Contract
			TEST	(CORTINIATION)		
.821	20	Photomultiplier Tubes BE-5A	B0#-1:22-51 9/29/50	Radio Corporation of America	September 51	Washington
.823	3	Floctrometer, MC-19A	BOX-713-51 11/13/50	Loudon Instruments Incorporated	September 51	Washington
.825	1	Oscilloscope, AT-14B	BON-630-51	Tektronix, Inc.	September 51	Washington
.826	10	Fariation Monitor, MC-20A	11/6/50 B07-808-51 12/15/51	General Electric Co.	August 51	Washington
.830	500	NF-84 Padiation Debection Flowent	BOM_807_51 12/13/50	Signal Corps	Indefinite	Wachington
:8 3 0	200	OF-SO Andiation Detec- tion Element	BON-807-51 12/13/50	dgmal Corps	Indofinite	Washington
.∂ 3 0	50	PS-75 Photographic Fills Holder	n B07-70 7-51 12/13/50	Signal Corps	Indefinite	Sachington
332	6	Dodmater Deaders	Deing Negotiate	d Saler Flectric Compa	ny	
L ⁿ 37	10	DG-3A9A GH Tubes	1907-1538-51 14/2/51	Mudlear Lestarch Corp	p. September 51	Heahington
ે 37	5	NG-1A33A OH Tubos	B7#-1538 -51 1 √2/5 1	Muclear Pestarch Con	p. September 51	Washington

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Req.	Quantility	Instrument	Contract Issued	Company	Estimated Completion Date	Office Hamiling Contract
\$1877	5	BG-1A33B OM Tubes	BON-1538-51. 1/2/51	Nuclear Reserch Corp.	September 51	Washington
51840	5	Scalers, COM-37A	BG=1 686-51 5 /15/51	Borkeley Scientific Corporation	August 51	Washington
51840	5	Count Rate Meter, MAN-26A	BO#-1686-51 5/15/52	Buriseley Scientific Corporation	August 51.	Washington
51841	5	Scalers, CA-20A	BON-1685-51 5/14/51	Howlett-Packard Co.	September 51	Washington
51842	1	Scaler, COM-38A	BOW_1862-51 6/7/51	Radiation Instrument Development Lab	October 51	Wash ington
51842	1	Scaler, COM-38B	BON-1862-51 6/7/51	Radiation Instrument Development Lab.	October 5%	Washington
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