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18 January 1950

U. S. Atomic Energy Commission
Oak Ridge Laboratory Division
Post Office Box E
Oak Ridge, Tennessee

Attention: A. H. Holland, Jr.

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COLLECTION Director's Files
BOX No. _____
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Gentlemen:

The curriculum for the radiological monitor training course has been reviewed and the following additions made by Dr. K. Z. Morgan and concurred in by Dr. K. T. Overman: (additions are underlined)

I-D 6. Radiation from extended sources

III-A Measurement of Ionizing Radiations

0. Bragg-Gray principle as related to Health Physics instrument design

2. Ionisation chamber survey instruments (d. c. and pulse types).

3. Geiger-Muller counter survey instruments

4. Parallel plate pulse counters

5. Proportional counters

C 2. Pocket dosimeters (condenser chambers and pocket electrometers)

Laboratory Work (with radiation instruments and where feasible using radiisotopes)

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A-00426

Human Studies Project

- A 7. Calibrations and minor servicing of instruments. A study of the circuits and operating characteristics of all essential instruments.

IV.-B

2. General radiological effects -- etc.
6. Calculation of duration of hazard. Selective retention of certain radioisotopes. (i.e. the beta-gamma and alpha-gamma ratios)
7. Calculation of total dose from external sources and from the inhalation or ingestion of radioactive materials to determine how long to keep teams in area, etc.
9. Dangers if one gets radioactive material into the body (via open wounds or puncture wounds or via solvents)
10. Particle problem

Laboratory and Field Work (page 6)

- I. Systematic field surveys of contaminated areas, personnel, buildings--use contaminated explosions and fires, if possible.

Building shacks to be contaminated with short lived radioisotopes (alpha, beta, and gamma). Experiments will be designed to train the student to locate and measure contamination under adverse conditions of fire, wind, rain, and explosion. Areas (blue, yellow, red) will be mapped out by isodose curves.

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With regard to the sequence of topics, the consensus of opinion among the Oak Ridge Institute of Nuclear Studies and the Oak Ridge National Laboratory groups was that II would follow III; i.e., that a better order of presentation from the standpoint of correlating laboratory and class work would be :

- I. Physics
- II. Instrumentation and Electronics
- III. Biological Effects
- IV. Disaster Phenomena
- V. Civilian Defense Training

A tentative schedule for the laboratory work and the lectures has been worked out by Dr. Overman, Oak Ridge Institute of Nuclear Studies, and Dr. Anderson, Oak Ridge National Laboratory, and a copy is enclosed. This will indicate possible percentages of time to be devoted to each major segment of the proposed curriculum. No doubt, deviation from this schedule will be made as detailed plans for experiments, demonstrations, filed work, and lectures become crystallized.

Very truly yours,

OAK RIDGE NATIONAL LABORATORY

Original Signed By

C. N. Rucker

C. N. Rucker
Director

KEANDERSON: hah

cc: C. E. Center

Enclosure

CIVIL DEFENSE TRAINING SCHEDULE

	Monday	Tuesday (Laboratory)	Wednesday	Thursday (Laboratory)	Friday
First Week	Organisation & Introduction Lecture	Counters (Sect. A)	Structure & Nuclear Reactions	Circuits (Sect. A)	Decay Laws
A.M.					
P. M.	Laboratory Introduction	Counters (Sect. B)	Radioactivity and Fission Products	Circuits (Sect. B)	Interaction of Radiation and Matter
Second Week	Interaction of Radiation and Matter	Circuits (Sect. A)	Basic Instruments	Calibration (Sect. A)	Units, Etc.
A.M.					
P.M.	Basic Instruments	Circuits (Sect. B)	Demonstration special types	Calibration (Sect. B)	Personnel Monitoring
Third Week	Biological Effects	Personnel Monitoring A(Film)	Biological Effects	Shielding & $1/d^2$ Law	Biological Effects
A.M.					
P.M.	Biological Effects	Personnel Monitoring B(Film)	Personnel Monitoring (pocket dosimeter)	Shielding $1/d^2$	Biological Effects
Fourth Week	Movie Films	Surface Contamination Decontamination Smears (A)	Radiological Effects Energy - Particle Internal - External	Isodose Plots (A)	Medical Aspects
A.M.					
P.M.	Types of Bomb blast & Specific Effects of each	Surface Contamination Decontamination Smears (A)	Range of Different Fall out Survey	Isodose Plots (A)	
Fifth Week	General Defense Planning	Air & H₂O Sampling (A)	Paper Problem	Field Test	Discussion & Review
A.M.					
P.M.	General Defense Planning	Air & H₂O Sampling (B)	Civil Defense Training	Field Test	Examination

Intra-Laboratory Correspondence
OAK RIDGE NATIONAL LABORATORY

To: C. N. Rucker

Date: 18 January 1950

From: Elda E. Anderson

Subject:

Enclosed is a copy of the additions made to the curriculum for the radiological monitor training course by Dr. K. Z. Morgan and concurred in by Dr. R. T. Overman.

In addition, I am enclosing a tentative schedule for the laboratory work and the lecture work for the course as worked out by Dr. Overman of the Oak Ridge Institute of Nuclear Studies and myself.

Elda E. Anderson

Elda E. Anderson

EEA/BMH

Enclosure

		c.n.R
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