C. S. U.

HEALTH PHYSICS CONFERENCE

June 13, 14 and 15, 1955

Columbus, Ohio

Sponsored by

OFFICE OF RADIATION SAFETY

THE CHIO STATE UNIVERSITY

with the cooperation of

United States Atomic Energy Commission

INTRODUCTION

One may ask what is to be accomplished by a Health Physics Conference? More fundamentally, one might ask what is Health Physics? A personal definition of Health Physics is "that" which allows one to walk through a lab or plant (or countryside) where ionizing radiation is being used or made with a relatively clear conscience that one is not being bombarded with radiation to an injurious extent. I hope that out of this Conference a more objective definition will arise that will replace this purely subjective one.

The main purpose of the Conference is to draw together persons working in this field so that they may hear the latest developments from specialists and to discuss their problems with these specialists. A relatively large portion of time, therefore, has been allotted to discussion periods. Many of the questions that will arise probably no definite answer can be given as yet, but the discussion of them will help in the formulation of the answers. Since this is the first Conference in this field that has been held, it is hoped that a wide audience will be reached and that it will attract persons actively engaged in Health Physics.

The program has been planned by the Program Committee following the receipt of questionnaires that were sent to persons in this field throughout the United States.

At present it seems we are standing at the crossroads. A good deal of experimentation, and theorizing has been done; in the field of particle accelerators; e.g. the X-ray machine and Cyclotron, much has been accomplished; but in utilizing the energy in the nucleus the surface has only been scratched. And, we must remember that no matter what process is used to obtain the energy from the nucleus (fission, fission-fusion or some as yet undiscovered process) that it will undoubtedly be accompanied by ionizing radiation. Therefore, the future appears challenging for us, for progress with the nucleus can only progress as fast as we in this field can control or utilize the radiations.

Many thanks must be extended to many people, in particular Dr. Elda E. Anderson for without her and the whole-hearted co-operation of the United States Atomic Energy Commission this Conference would have had a hard time being more than a persons dream.

Office of Radiation Safety The Ohio State University

Program Committee:

Dr. Elda E. Anderson, Chairwoman, Oak Ridge National Lab. Francis J. Bradley, Ohio State University Lewis C. Emerson, Y-12 Area, Oak Ridge, Tennessee Myron F. Fair, Oak Ridge National Lab. Lester R. Rogers, Isotopes Division, U.S. AEC, Oak Ridge, Tenn.

INDEX

			-							<u> P</u>	ag	e No.
TMMDAINIAMTAN												
INTRODUCTION												
ORPHANS IN WO	ONDERLAND on S. Tay		• •	• •		• •	•		•		•	1
CRITZRIA FOR	WASTE DI	SPOSA	ΔL	•								العوي .
	P. Straub				• •		•		٠	•	•	4
WASTE DISPOSA			IN N	ON-A	TOMI	C E	NER	GΥ				
COMMISSION LA Lester I	ABORATORI R. Rogers	ES . and	G. N	. Mo	rgan	l	•	• •	•	•	•	16
WASTE DISPOSA												oh.
J. W. He	ealy	• •	• •	• •	• •	• •	•	• •	•	•	•	24
AIR SAMPLING	FOR RADI	OACTI	EVE I	'ARTI	CULA	TI						
MATTER H. F. S.	chulte	• •		• •			•	• •	•	•	•	29
AIR SAMPLING Jess W.	FOR RADI	OACT:	· ·	AS ES	• •	• •	•	•		•	•	36
QUOTE, QUALI	FIED EXPE	RT, V	UNQU(TE.	• • .	. • ,•	•	•		٠	•	46
ORGANIZATION	OF HEALE	H PH	YSIC:	STS					-			
Karl Z.	Morgan .	• •	• •	• •			•	•		٠	٠	55
THEORY AND P	RACTICE O	F DO	SE M	LASUF	REFIE	RTN						۲۵
John S.	Laughlir		• •	.• •	• •	• •	٠	•	• •	•	٠	59
A HALOGENATE	D HYDROCA	RBON	-DYE	TAW	ER E	QUIV	AL	CNT				
METHOD OF X-Sanford	AND GAMMA . C. Sigol									٠	٠	86
	_									æ		
RADIATION CO Laurist	NTROL LEC	ilsta Ilor.	TION	111 7	• •	• • LT NTO	لائد: •	• DT		· D	٠	96
REGULATION C Hanson	Blatz .	, • • • Э.兀.TA 122	MAI.	• •	* •	♦ •	. •	•		٠	•	102
LEGAL ASPECT Robert	S OF CON Lowenste									•	•	112
UNIVERSITIES	immons.					• •						120

	Tage NO.
A.E.C. CONTRACTORS Earl R. Ebersole	131
ATOMS AND GENES Earl L. Green	137.
CONTAMINATION LEVELS A. I. Baietti	148
A.E.C. RADIOLOGICAL SAFETY PROGRAM AND RADIO- ISOTOPE DISTRIBUTION G. W. Morgan	156
A SURVEY OF INSTRUMENTATION DEVELOPMENT Robert L. Butenhoff	
PROPOSED DOSAGE DETERMINATION IN BETA-GAMMA-X-RAY FILM DOSIMETRY AT ORNL E. D. Gupton	
FALLOUT Gordon M. Dunning.	
LABORATORY DESIGN A. Mackintosh	
SHIELDING PROBLEMS R. H. Ritchie	185
DETERMINATION OF INTERNAL RADIATION EXPOSURE FROM URINARY AND FECAL EXCRETION Wright H. Langham.	ם כל
HEALTH PHYSICS ORGANIZATIONS IN INDUSTRY	
-1. 04 Darmon, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	219