

isotopes specialties company

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December 24, 1958

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United States Atomic Energy Commission
1717 H Street, N. W.
Washington 25, D. C.

Attn: Mr. Robert E. Brinkman
Senior Regional Licensing Reviewer

Dear Mr. Brinkman:

Isotopes Specialties Company offered a five day training course on December 1, 2, 3, 4, 5, 1958 to personnel from several companies in the Los Angeles Area. This course was given at our plant at 170 West Providencia, Burbank, California. The instructors were Dr. Landsverk of the Landsverk Electrometer Company, J. L. Shepherd, R. K. Dickey, and Philip Gill. Personnel taking this training course were:

Topp Manufacturing Company
5221 W. 102nd St.
Los Angeles 45, California

E. M. Luther
P. Van Benschoten
R. C. Parkinson

Dresser Dynamics
18157 Napa Street
Northridge, California

C. D. McGregor

Rocketdyne Division of
North American Aviation
6633 Canoga Avenue
Canoga Park, California

R. B. Gordon

The three persons from Topp Mfg. who took this course were principally interested in acquiring the techniques and skills required in handling unencapsulated cobalt-60 sources of up to 10 millicuries in size. These materials will be imbedded in a matrix of plastic like material and the purpose of this setup will be to evaluate air erosion such as might occur on nose cones.

a division of nuclear corporation of america

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U.S.A.E.C.
Isotopes Specialties Co.

12-24-58

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Personnel from Dresser Dynamics had an interest in being qualified to be responsible for sealed Sr-90 sources in the range of a microcurie or at the most a millicurie. These sources will be of the type used as internal calibration sources or as energy sources for level gauges.

Personnel from Rocketdyne was interested in obtaining all possible information and experience in the field of Health Physics Practices.

Laboratory work involved the use and handling of sealed sources of several isotopes including cobalt-60, iridium-192, antimony-124, cesium-137, thulium-170, and strontium-90. The size of these sources range from a millicurie to a curie and the usage was involved in instrument calibration and repair and in teaching the principles of shielding, inverse square attenuation, and shielding for packaging. Additionally, certain sources which were encapsulated but not sealed were used for wipe testing studies and microcurie quantities of certain isotopes in solution were used in pipetting, evaporating, counting, etc. for teaching the principles of decontamination and health physics surveying.

It is the opinion of the instructors that all five (5) persons taking this course successfully passed all phases of this training program and are capable of assuming responsibility for radioisotopes in areas described in the preceding paragraphs for each group.

Enclosed is a course outline with topics covered, type of presentation, and time.

Sincerely yours,

Philip Gill
Philip Gill

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Enc.

INDUSTRIAL USE OF ISOTOPIES

Course Given by Isotopes Specialties Co.

COURSE OUTLINE

Mon. Dec. 1 - A.M.	<u>Nuclear Fundamentals</u>	
Lecture	Matter, radiation, interaction of radiation with matter.	4 hrs.
	<u>Units and Definitions</u>	
Lecture P.M.	<u>Characteristics of Commonly Used Radio-Isotopes</u>	2 hrs.
	Half-life, type and energy of radiation, chemical properties	
Lecture Demonstration	<u>Principles of Radiation Detection</u>	1 1/2 hrs
	Ion chambers, proportional and G. M. counters, scintillators, film	1/2 hr
	<u>Counting Instrument Familiarization</u>	
Tues. Dec. 2 - A.M.	<u>Quartz Fiber Dosimeters, Pocket Chambers, Analysis Units, R-Meters</u>	2 hrs.
Lecture & Demonstration P.M.	<u>Health Physics</u>	
Lecture	Biological effects of radiation	4 hrs
	Handling and safety practices	
Laboratory	<u>Calibration of Survey Instruments</u>	2 hrs
	Laboratory work and discussion	
Wed. Dec. 3 - A.M.	<u>Energy Determination by Absorption</u>	
Laboratory	<u>Dimunution of Radiation</u>	4 hrs
	Shielding, distance, scatter, build-up	
Lecture P.M.	<u>Industrial Applications of Radioactive Materials</u>	2
Laboratory	Specific applications of current interest	2

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Thurs. Dec. 4 - A. M. Legal Requirements and Administration

Lecture Federal regulations, A.E.C., State and Local requirements, I.C.A. regulations, records 4 hrs

Lecture Radiation Limits and Levels 2 hrs
Tolerance concepts
Public relations

Lecture P. M. Radiation Safety Practices 2 hrs
Special emphasis on problems of current interest

Fri. Dec. 5 - A. M. Design of Experiments Utilizing Radioisotopes

Lecture Estimation of Statistical limitations, required activity, safety considerations, disposal problems, economic factors. 2 hrs

Lecture Industrial Uses of Isotopes 2 hrs
Tracers, level gauges, thickness gauges, for radiation effects, etc.

P. M. Industrial Uses of Isotopes (Cont'd) 1 hr
Review and Examination