

Motion Picture Program

Program I—Tuesday, Wednesday, Thursday, Friday mornings

9:30- 9:53 A.M. 1. Acromegaly

9:53-10:00 A.M. 2. Extracorporeal Irradiation of Blood and Lymph

10:00-10:30 A.M. 3. Of Man and Matter

10:35-11:02 A.M. 4. R-A-P: Radiological Assistance Program—Teamwork in Emergencies

11:05-11:13 A.M. 5. Project Sedan

11:15-11:55 A.M. 6. The SL-1 Accident, Phases 1 and 2

1. *Acromegaly*—23 minutes—9:30-9:53 A.M.

This film describes the successful work at the Donner Laboratory with the 184-inch synchrocyclotron in the application of heavy particle radiation for the treatment of acromegaly.

2. *Extracorporeal Irradiation of Blood and Lymph*—7½ minutes—9:53-10:00 A.M.

This film pictures the work at Brookhaven National Laboratory in which a well shielded gamma ray source outside the body is used to irradiate blood and lymph passing through a closed circuit extracorporeal teflon loop. The basic principle concerns the relative radiation resistance of erythrocytes and the radiation sensitivity of lymphocytes.

3. *Of Man and Matter*—29 minutes—10:00-10:30 A.M.

The 33-billion-electron-volt alternating gradient synchrotron of the Brookhaven National Laboratory is described and its use in an experiment is shown. An explanation is given as to why such gigantic and complex devices are necessary in order to study the fundamental particles and the forces within the atomic nucleus.

4. *R-A-P: Radiological Assistance Program—Teamwork in Emergencies*—26½ minutes—10:35-11:02 A.M.

Despite the extensive precautions taken, accidents do happen with radioactive materials. This documentary film details the A.E.C.'s "R-A-P" by which nationwide radiological emergency assistance is available to deal with accidents involving radioactive materials.

5. *Project Sedan*—8 minutes—11:05-11:13 A.M.

This film shows the detonation of a 100 kiloton nuclear device buried 635 feet in desert alluvium, and illustrates the feasibility of using such detonations as a method of excavating large masses of earth.

6. *The SL-1 Accident, Phases 1 and 2*—40 minutes—11:15-11:55 A.M.

The accidental explosion of a nuclear reactor at the National Reactor Testing Station, Idaho, the measures followed in rescuing the three casualties involved, the investigations of the cause, and the control of the hazards are shown.

Motion Picture Program

Program II—Tuesday, Thursday, Friday afternoons

- 1:00-1:28 P.M. 1. **The Nuclear Witness—Activation Analysis in Crime Investigation**
- 1:28-1:48 P.M. 2. **Atoms on the Move—Transportation of Radioactive Materials**
- 1:48-2:12 P.M. 3. **Return to Bikini**
- 2:12-3:09 P.M. 4. **The SL-1 Accident, Phase 3**

1. *The Nuclear Witness—Activation Analysis in Crime Investigation*—28 minutes—1:00-1:28 P.M.

This film illustrates the usefulness of the tremendous sensitivity of high-flux (nuclear reactor) neutron activation analysis in the study of materials involved in actual criminal cases (gun shot residues, hair, paint and marijuana). For some 75 elements limits of detection range from as low as 10^{-7} micrograms up to about 5 micrograms. Often the method can be employed non-destructively.

2. *Atoms on the Move: Transportation of Radioactive Materials*—20 minutes—1:28-1:48 P.M.

This film surveys the various means of transporting radioactive materials and the safety aspects underlying their packaging and handling. Some aspects of safety research and development designed to limit the consequences of an accident involving these materials is presented.

3. *Return to Bikini*—23½ minutes—1:48-2:12 P.M.

Describes the latest scientific survey by a team from the University of Washington Laboratory of Radiation Biology to determine the condition of Bikini and Eniwetok atolls six years after the last nuclear test detonations. There has been tremendous recovery to the biological processes that form the life chain linking man with plants, fish and animals in the atolls. The gross results of nuclear testing are fading, and what little biological damage remains is rapidly healing.

4. *The SL-1 Accident, Phase 3*—57 minutes—2:12-3:09 P.M.

Features a reenactment of the accident, and documents the recovery operations, in which the 13 ton reactor vessel and core were removed and transported in a 20-foot-high concrete shielding cask 40 miles to a giant hot shop, where studies of the component parts were made.