



**SURPLUS FACILITIES  
MANAGEMENT PROGRAM**

**INTERIM POST REMEDIAL ACTION SURVEY REPORT  
FOR  
KINETIC EXPERIMENT WATER BOILER (KEWB) FACILITY  
SANTA SUSANA FIELD LABORATORY  
ROCKWELL INTERNATIONAL  
CANOGA PARK, CALIFORNIA**



**OCCUPATIONAL HEALTH AND SAFETY DIVISION  
Health Physics Section  
ARGONNE NATIONAL LABORATORY, ARGONNE, ILLINOIS**

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INTERIM RADIOLOGICAL SURVEY REPORT  
FOR  
ROCKWELL INTERNATIONAL, SANTA SUSANA LABORATORIES,  
KINETICS EXPERIMENT WATER BOILER (KEWB) FACILITY

INTRODUCTION

A post remedial action survey of the Kinetics Experiment Water Boiler (KEWB) site was conducted by the Argonne National Laboratory (ANL) Radiological Group at the behest of the Department of Energy. The results of this survey together with concomitant conclusions and recommendations are included in this report.

The Kinetics Experiment Water Boiler (KEWB) Reactor was last operated in 1966. The fuel was drained and the system rinsed in 1968. The KEWB Facility was declared excess and dismantling proceeded as described in the Decontamination and Decommissioning of Facilities Program Plan, PP-704-990-002.\* The actual decontamination and decommissioning (D&D) efforts began by Rockwell International in January 1975, and continued intermittently until July 1975.

The KEWB Facility was decontaminated, dismantled, and the site graded to blend with the surrounding terrain. The facility consisted of the Reactor Test Building 073, the Exhaust Blower Building 643, the Electrical Control Building 793, and the Waste Storage Building 123. The KEWB Facility also included a 1000-gallon liquid waste holdup tank, a 1000-gallon reactor cooling water storage tank, and a 300-gallon gaseous waste tank. The tanks and associated piping were located underground near Building 073.

Buildings 643, 793, and 123, were completely demolished, including removal of concrete footings and pads. All contaminated or activated equipment and materials were removed from Building 037 and sent to the Radioactive Materials Disposal Facility (RMDF) for decontamination and disposal for unrestricted use, or packaged for shipment to Beatty, Nevada, for burial. The above-grade structures and the roof of Building 073 were demolished. The remaining concrete

\*This report was prepared by Rockwell International and is available from their Canoga Park, California Division.

floor and walls were decontaminated to levels which were as low as practicable (ALAP), but in all cases below these levels established as acceptable for future unrestricted use of the site.

After the D&D effort was completed, a final survey was conducted and documented by the Rockwell group (Ref. AI-ERDA-13159). The results of this survey were used to demonstrate that the site is totally free of radioactivity except for normal background.

### SITE DESCRIPTION

The Santa Susana Laboratories of Rockwell International are located in the Santa Susana Mountains northwest of Los Angeles, California, (see Fig. 1). The location of the KEWB Facility, with respect to the laboratory site is given in Figure 2. The KEWB facilities, as they existed prior to D&D, are shown in Figures 3 and 4. Subsequent to the D&D, the site was graded to blend with the surrounding terrain which is the present status of the site.

### RADIOLOGICAL SURVEY PROCEDURES

Two types of portable survey instruments were used to conduct the direct radiological survey of the terrain where the KEWB Facility formerly stood. NaI crystal detectors, 2 in. diameter by 2 mm thick (Eberline PG-2 with Eberline PRM-5-3 electronics), were used to monitor for low energy x-ray and gamma radiation. NaI crystal detectors measuring 1 in. diameter by 1 in. thick (Eberline PRM-7  $\mu$ R Meter) were used to measure the ambient external radiation field in units of  $\mu$ R/h.

Environmental soil samples (4 in. diameter by 12 in. deep corings) were taken at four locations around the perimeter of the site. The samples were taken using a 4-in. diameter, 6-in. long right-circular-cylinder cutting tool, used as a golf-green hole-cutter. Each soil core was 12-in. long and divided into four segments. Starting from the surface, three, 2-in. segments were cut, bagged, and marked A, B, and C, respectively; the final segment of 6-in. was marked D. Uranium and gamma spectral analyses were conducted on all soil samples.

In addition to the soil corings, bore holes were drilled using a commercial drill rig. Nine bore holes were drilled to depths of up to twelve feet, and sampled in sequential one foot increments utilizing a split-spoon sampler. All

bore holes were logged in 2 ft increments. An additional background bore hole was drilled at the northeast corner of the site area for the purpose of ascertaining the soil background concentrations in this area. The choice of bore hole locations was somewhat limited by the presence of overhead power lines. The drill rig cannot be located within 5 ft of a power line, hence, a section of the area somewhat more than 10 ft wide was unavailable for investigation.

Soil samples were analyzed using uranium fluorometric and gamma spectroscopic techniques.

### RADIOLOGICAL SURVEY RESULTS

The radiological survey of the surface of the entire site indicated no contamination above background. However, it should be noted that backgrounds at this site are relatively high (e.g. 40  $\mu$ R/h with the PRM-7 and 8 k cts/min with the PRM-5-3) as a result of "shine" from the Radioactive Materials Disposal Facility (RMDF) which is located nearby. (See Buildings 021 and 022, Fig. 2.)

The results of the analyses of the soil samples revealed no radionuclide concentration above background levels. No anomalies were detected as a result of the bore hole logging.

### CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this survey, the following conclusions can be drawn.

No radioactive material was detected at this site above background levels.

Based on the above conclusion the following recommendation can be made.

This site can be released for unrestricted use.

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Senior Health Physicist

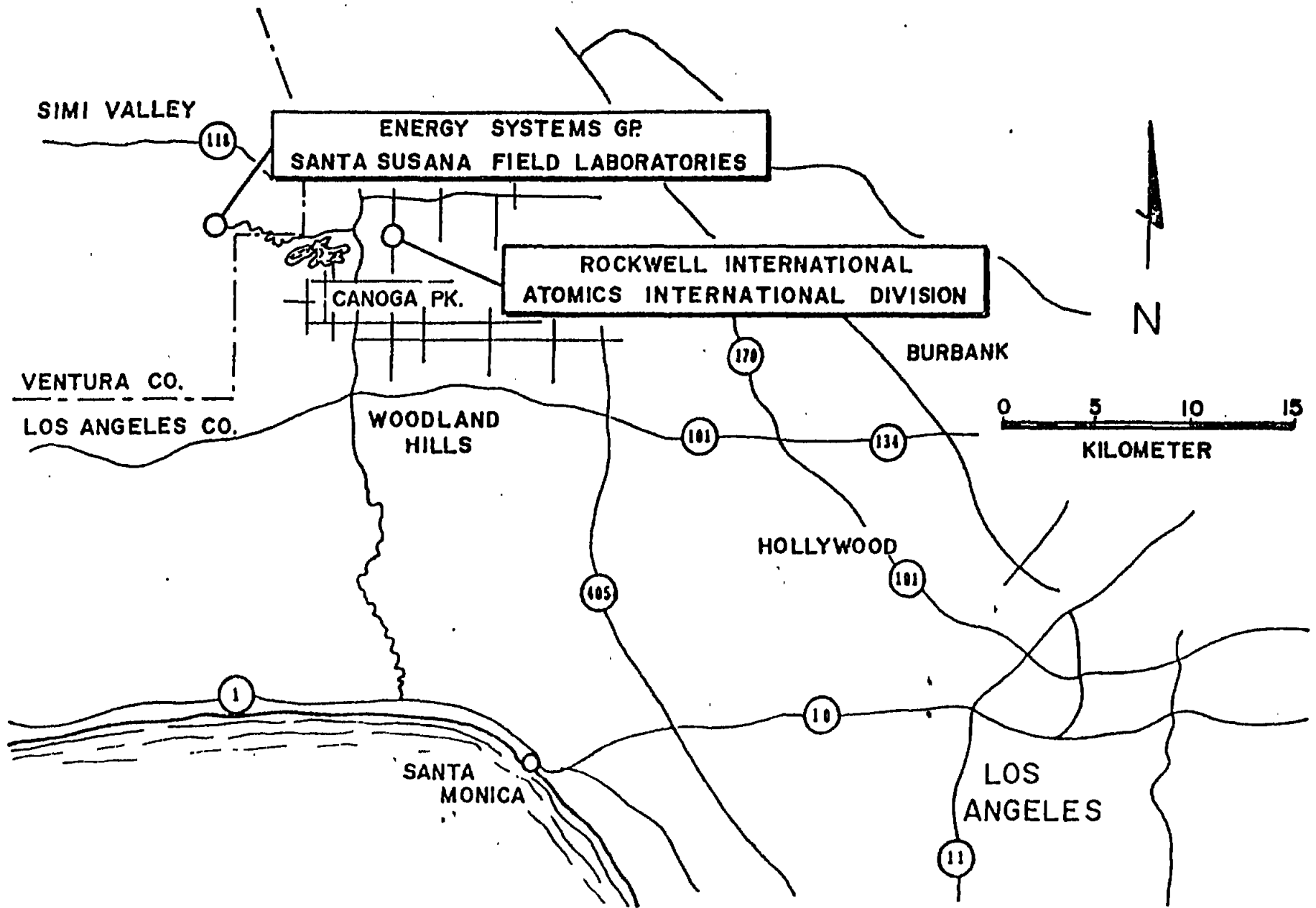


Figure 1

ENERGY SYSTEMS GROUP  
SANTA SUSANA FIELD LABORATORIES

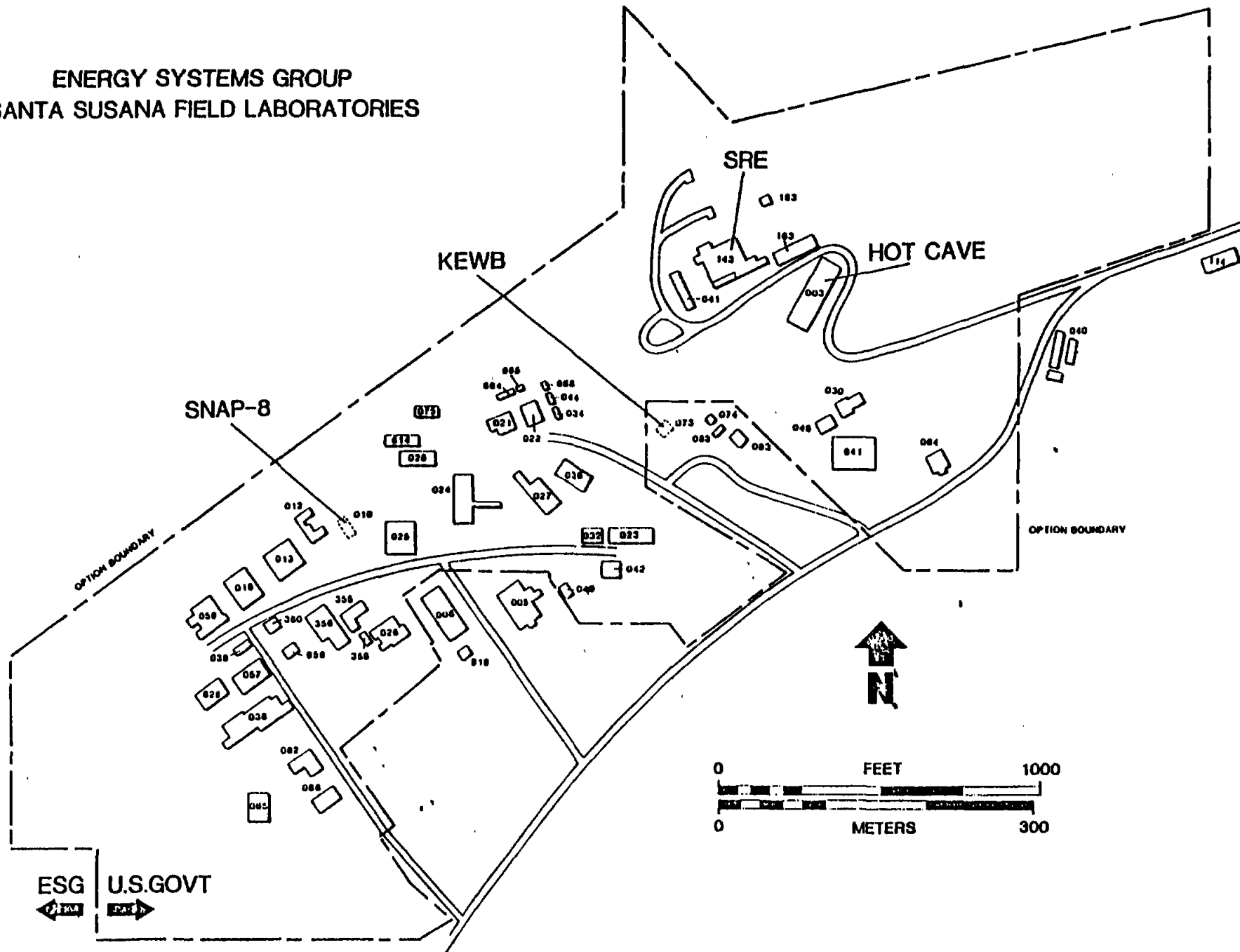


FIGURE 2



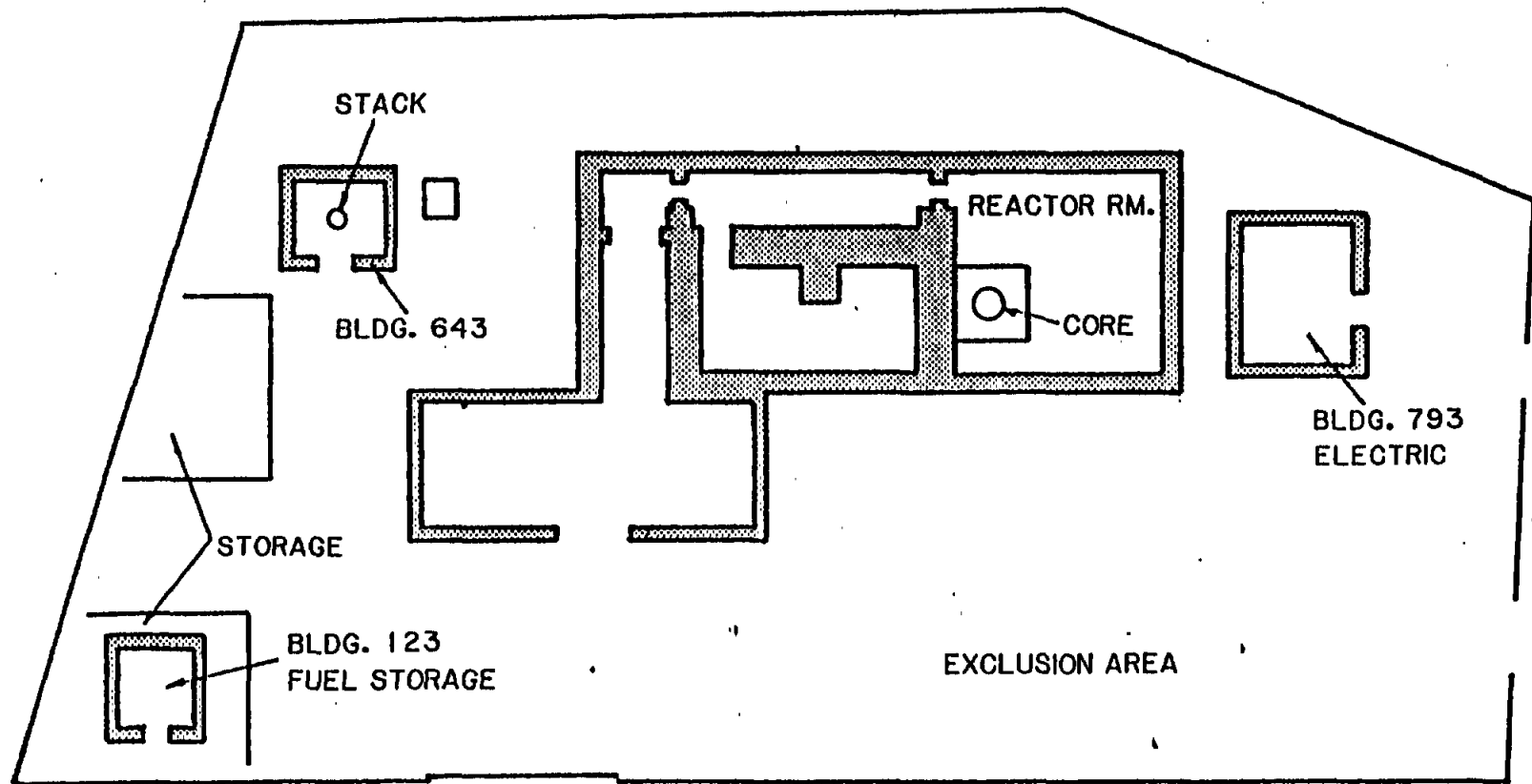


FIGURE 3



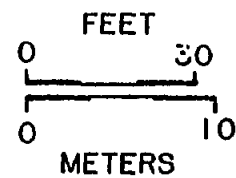
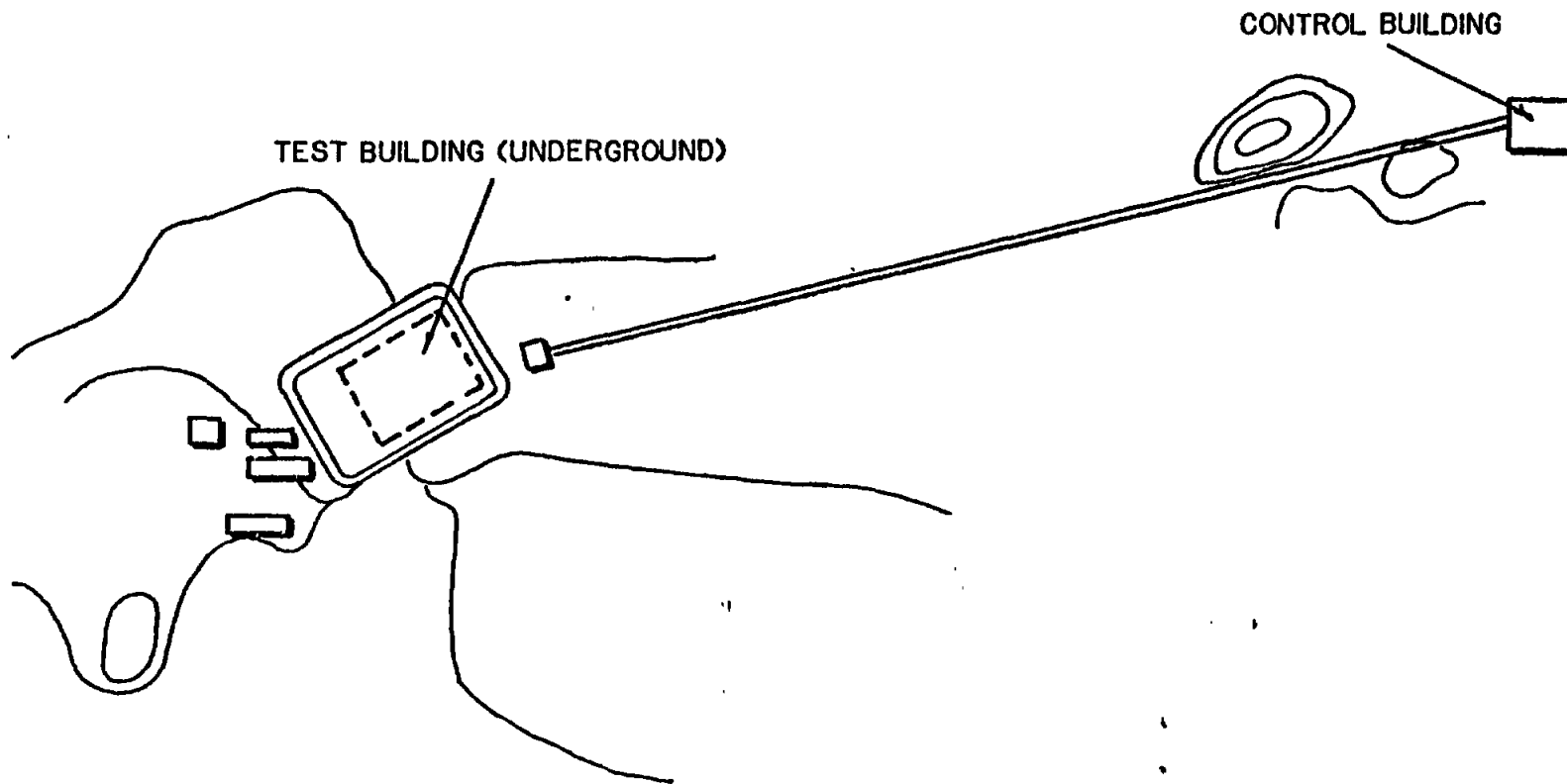


FIGURE 4