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ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION
ENERGY/ENVIRONMENT SYSTEMS DIVISION

February 5, 1993

Anthony F. Kluk, Ph.D
Director, San Francisco Operations Division
EM-443
Trevion II
U.S. Department of Energy
Washington, DC 20545-0002

**SUBJECT: TYPE A VERIFICATION OF BUILDING T029 SANTA SUSANA FIELD
LABORATORY, ROCKWELL INTERNATIONAL, CANOGA PARK,
CALIFORNIA**

Dear Dr. Kluk:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) has conducted a Type A verification of Building T029 which is located at the Santa Susana Field Laboratory (SSFL) in Canoga Park, California. The SSFL is operated by Rockwell International under contract to the Department of Energy (DOE).

Building T029, formerly known as both the Radiation Measurements Facility and the Old Calibration Facility, is located on 10th Street in the western portion of the SSFL (Figure 1). The building measures 12 m x 6 m (40 ft x 20 ft) and formerly housed a radium-226 (Ra-226) storage well and a cobalt-60 (Co-60) source cell. On March 23, 1964, a Ra-226 source developed a leak after being dropped into the storage well. The limited contamination outside of the well was remediated at that time and operations resumed. In 1974, decommissioning was initiated by removal of all radioactive source materials from the building. The building was then used as a storage facility for waste alkali metals until 1988 when a survey identified residual alpha contamination on interior portions of the well, and additional remediation was performed. The remedial actions within the building included removal of the storage well and associated concrete flooring and underlying soils. The Co-60 source cell was also removed. The area was then resurveyed and restored. The results of Rockwell's post-remedial action survey indicated that the facility met all applicable guidelines for release without radiological restrictions. The building is currently used for the storage of RCRA hazardous wastes.

It is the policy of the DOE to perform independent verifications of remedial actions conducted at DOE owned facilities, and ORISE has been designated as the organization responsible for this task at the SSFL.

ESSAP reviewed the decontamination and radiological survey report and supporting documentation prepared by Rockwell and provided the DOE with comments suggested for incorporation into future

documents.^{1,2} Overall, the report provided an adequate description of the remedial action conducted and survey procedures used. Statements regarding the final radiological status of the building, relative to the DOE guidelines for release without radiological restrictions, were also provided.³ The applicable surface contamination guidelines were those for Ra-226 which are:

Total Activity

100 dpm/100 cm², average in a 1 m² area
300 dpm/100 cm², maximum in a 100 cm² area

Removable Activity

20 dpm/100 cm²

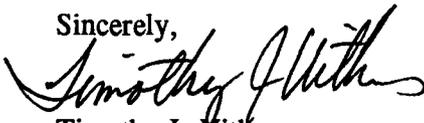
The DOE guideline for exposure rate is 20 μ R/h above background. However, Rockwell has elected to use a more conservative value of 5 μ R/h above background.

The exposure rate data presented by Rockwell met the more restrictive value and satisfies the DOE guideline. Although the decommissioning report did not provide residual surface activity levels for affected portions of the building, past surveillance surveys, conducted by Rockwell, did not identify any direct radiation levels in excess of ambient background. ESSAP also performed scans of the floor surfaces contiguous with the source well's former location using ZnS detectors coupled to ratemeter-scalers. The surface scans did not identify any locations of elevated direct radiation.

It is ESSAP's opinion that Building T029 at the Santa Susana Field Laboratory satisfies the requirements for release without radiological restrictions. This opinion is based on the limited area affected by the Ra-226 leak, the methods employed to remediate the affected area, and the results of the post-remedial action surveys.

Please do not hesitate to contact either Michele Landis at (615) 576-2908 or myself at (615) 576-5073 should you have any questions.

Sincerely,



Timothy J. Vitkus
Environmental Project Leader
Environmental Survey and
Site Assessment Program

TJV:dac

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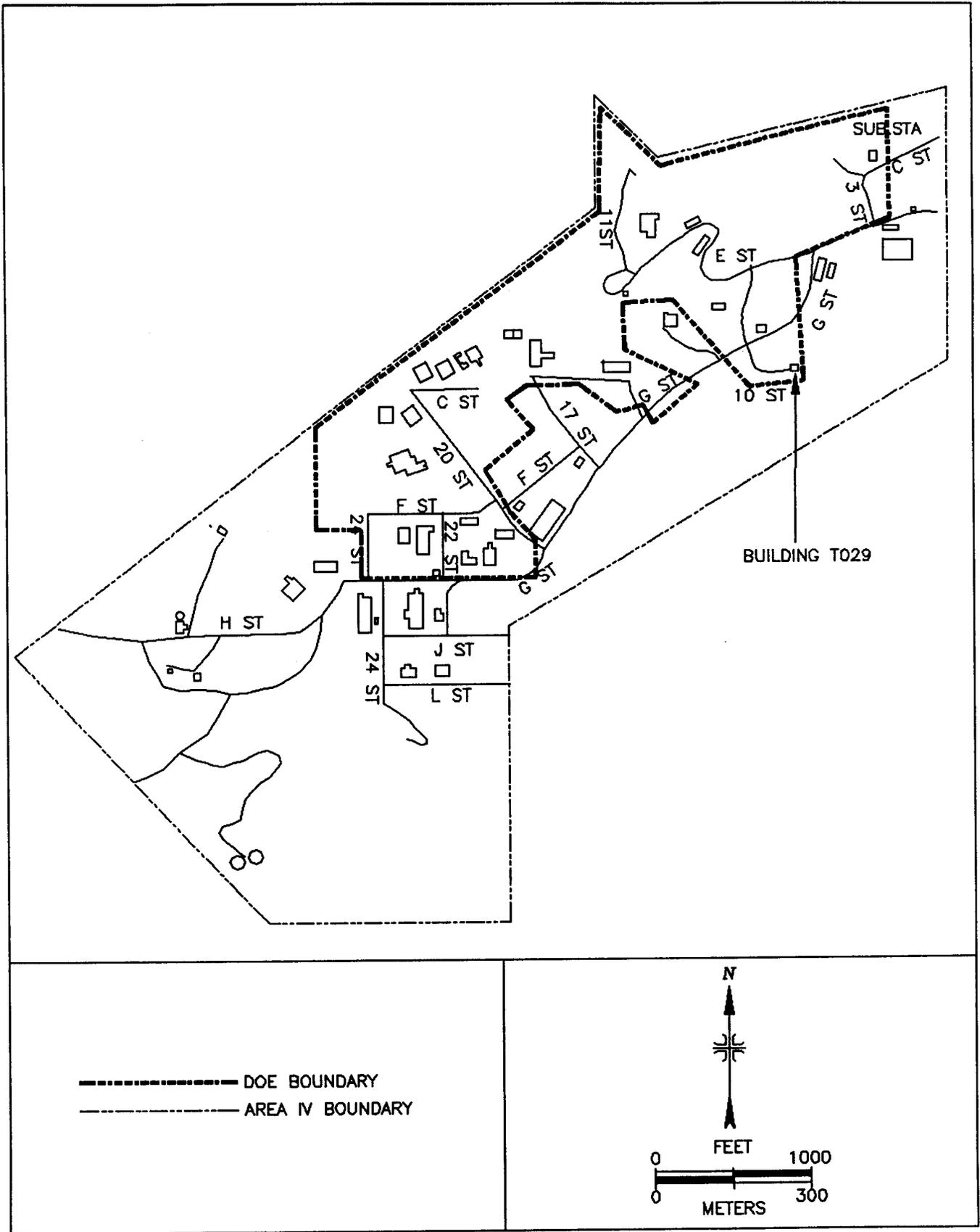


FIGURE 1: Plot Plan of Santa Susana Field Lab Area 4 – Location of Building T029

REFERENCES

1. Subbaraman, G. "Final Decontamination and Radiological Survey of Building T029," Rockwell International Safety Review Report N704SRR99029, June 1990.
2. T.J. Vitkus, Letter to A. Kluk, June 5, 1992, U.S. Department of Energy, Washington, DC.
3. "Radiation Protection of the Public and the Environment," DOE order 5400.5, U.S. Department of Energy, February 8, 1990.