

LA-4037-SOP, Rev. 2, Suppl. 1
Standard Operating Procedures

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*Pajarito Plan for
Radiation Emergency*

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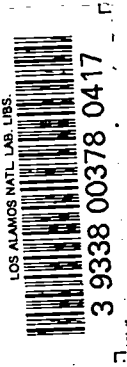
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UC-46

Issued: June 1983

Pajarito Plan for Radiation Emergency

R. E. Malenfant



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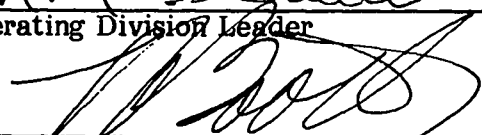
For Operating Group Nuclear Safety Committee



Operating Group Leader



Operating Division Leader



For Laboratory Reactor Safety Committee

PAJARITO PLAN FOR RADIATION EMERGENCY

by

R. E. Malenfant

ABSTRACT

The Pajarito Plan for Radiation Emergency identifies possible accidents specific to the operations of the Los Alamos Critical Assemblies Facility, specifies the appropriate actions to take in the event of an accident, and assigns responsibility for those actions.

I. INTRODUCTION

This Standard Operating Procedure is a revision of the Pajarito Plan for Radiation Emergency with modifications to correct references to former designations of the Operating Group and to update procedures. All references to the organization responsible for operation of the Los Alamos Critical Assemblies Facility will refer to the Operating Group or Operating Division with the expectation that the reference will be completely clear from context. The layout of Pajarito Site appears in the Figure.

II. EXCURSION IN KIVA WITH PERSONNEL PRESENT

An excursion that occurs during handling of fissile material* would create an emergency requiring prompt action.

A. Indications

1. Inside the Kiva. Personnel involved may notice abnormal response of audible counters, shock effects including falling parts of an assembly, or blue glow.

*Except when it is in the kivas, fissile material in significant quantities is either in containers designed for safe handling or subject to procedures for maintaining safe configurations.

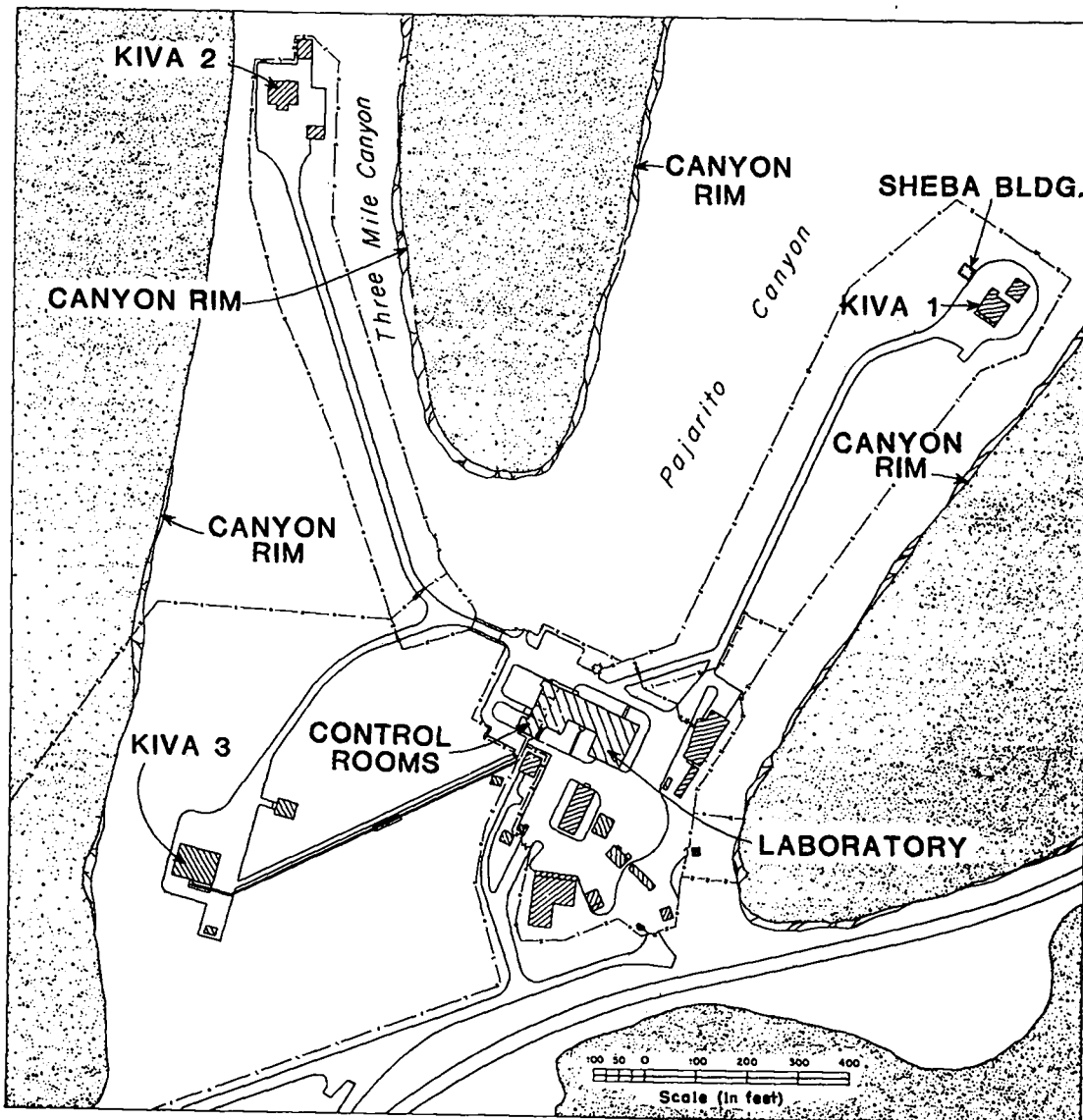


Figure. Building layout at Pajarito Site.

2. Health Physics Surveyor's Office. The radiation alarm may respond. However, response of the alarm is not proof that an excursion has taken place. Unless the reason for the alarm can be verified (e.g., a Godiva burst will normally actuate the alarm), it should be assumed that an accidental excursion has occurred and appropriate action taken. The Operating Group should familiarize every person resident at Pajarito Site with the radiation alarm.

B. Action to Take

1. Personnel involved will evacuate the kiva as promptly as is consistent with necessary rescue operations. A high-level portable radiation

detector located near the main kiva entrance may be used to evaluate the radiation levels in the area.

2. Personnel involved will notify the Operating Group Office or any crew chief not involved in the accident immediately upon reaching a safe location. Although this notification will normally be given by telephone, any technique will suffice.

3. A person designated by the Group Office or the crew chief in charge will advise the Operating Group Leader about further action.

4. Prompt notification of the accident must be conveyed to the Operating Division Leader, Health Division Leader, Laboratory Director, and Chairman of the Laboratory Reactor Safety Committee.

III. ACCIDENTAL EXCURSION DURING REMOTE OPERATION

An accidental excursion during remote operation of a critical assembly is unlikely to create an emergency requiring prompt action.

A. Indications

Such an excursion would be indicated by abnormal response of instrumentation in the control room, and possibly by the radiation alarm in the health physics surveyor's office. The monitoring television would give an idea of the extent of damage, if any.

B. Action to Take

1. Personnel on the operating crew will keep the gate to the kiva area locked until the Operating Group Leader or the crew chief in charge permits reentry.

2. Contact a health physics surveyor to advise the Operating Group Leader about further action in accordance with Ref. 1. In particular, seek the health physics surveyor's advice before permitting reentry into the kiva area.

3. The Operating Group Leader or the crew chief in charge shall promptly notify the Operating Division Leader, Laboratory Director, and Chairman of the Laboratory Reactor Safety Committee.

IV. EMERGENCY REQUIRING SITE EVACUATION

The remote location of each kiva from other buildings at Pajarito Site precludes radiation emergencies outside the kiva areas. Even an excursion that is an order of magnitude greater than the largest excursion that has accidentally occurred in a kiva would not create a radiation emergency.

A disaster of external origin, which might require site evacuation, would call into effect the procedures outlined in the Health and Safety Manual.¹

The Operating Group secretary will assist with required communication between the Operating Group Office and other buildings at Pajarito Site. A listing must be posted in the Group Office of telephone numbers and intercom stations at Pajarito Site to be called in case of such an emergency.

REFERENCE

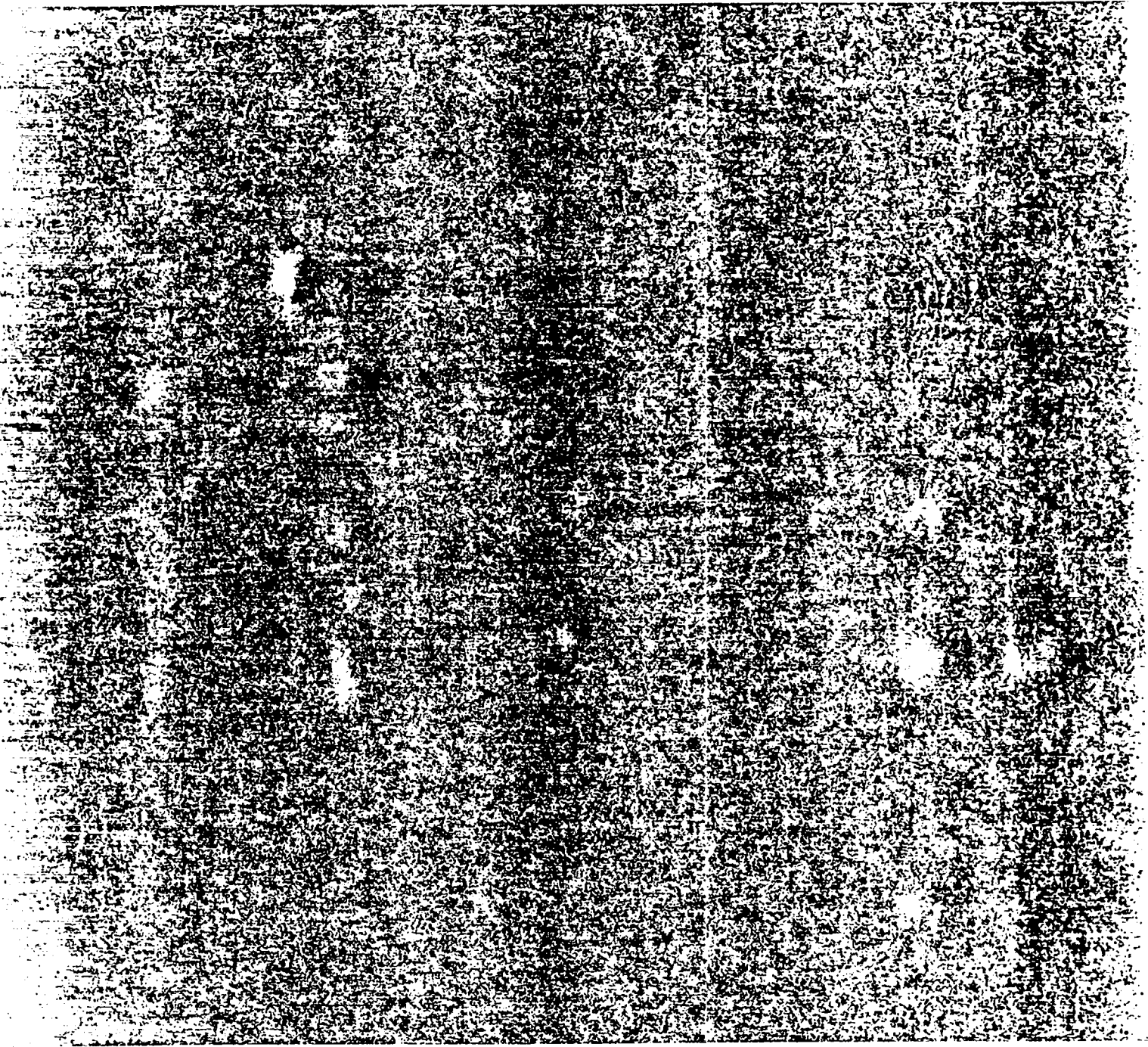
1. "Health and Safety," Los Alamos National Laboratory Manual, Chapter 1 (1983).

Printed in the United States of America
Available from
National Technical Information Service
US Department of Commerce
5285 Port Royal Road
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Microfiche (A01)

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