LOCKHEED-GEORGIA COMPANY
A DIVISION OF LOCKHEED AIRCRAFT CORPORATION
MARIETTA, GEORGIA 30060

12 April 1971

LGD/305347

United States Atomic Energy Commission
Division of Reactor Licensing
Washington, D. C. 20545

Subject: Decommissioning of Radiation Effects Reactor
License R-86, Docket No. 50-172

Enclosures: (a) Decommissioning Plan
(b) Disposal of Reactor Components

Gentlemen:

Pursuant to Section 50.82 of Part 50, Title 10, CFR, Lockheed hereby applies for authority to decommission the Radiation Effects Reactor in accordance with Enclosure (a).

In addition, Lockheed requests authority to dispose of several reactor components in accordance with Enclosure (b), but that disposal of these components not be considered a criterion for decommissioning the RER.

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If you have any questions about the enclosed information, please contact B. D. Dodd, Department 72-86, Zone 400, Lockheed-Georgia Company, Marietta, Georgia 30060, phone Area Code 404, 424-4471.

Your early consideration will be appreciated.

Very truly yours,

LOCKHEED AIRCRAFT CORPORATION

H. L. Poore
Vice President

HLP:pb

Enclosures

H. L. Poore, under oath, states that the above and attached statements are true to the best of his knowledge and belief.

Subscribed and sworn to before me this 12th day of April, 1971, at Marietta, Georgia.

Gertrude B. Rachels

Notary Public
My Commission expires: February 28, 1975

Enclosure (a)

DECOMMISSIONING PLAN

A. OBJECTIVE

The overall objective is to restore the Radiation Effects Reactor (RER) site to such a low radiation environment that surveillance requirements will be greatly reduced or eliminated and that part or all of the 10,000 acre laboratory site may be released for unrestricted occupancy.

With respect to regulatory control, the stated objective will be accomplished in two phases:

Phase I. Decommission RER

Phase II. Dispose of By-product Material

Upon completion of Phase I, Lockheed will request termination of Facility License R-86 with simultaneous issuance of a state by-product material license, thereby initiating transfer of regulatory control from the Atomic Energy Commission to the Radiological Health Service of the Georgia Department of Public Health.

B. DECOMMISSIONING OF RER

Lockheed proposes that the RER be considered decommissioned when the following criteria are met:

1. All reactor fuel transferred to a licensed receiver and shipped from the site.

2. All control rod drives transferred to a licensed receiver and shipped from the site.

C. PRESENT STATUS OF RER

The fuel has been removed from the reactor and transferred to fuel element storage racks in the storage pool.

The upper closure, the shield tanks, and the internal components have been removed from the reactor pressure vessel and transferred to storage in the storage pool or on the reactor building floor. All of these components have been removed in the same manner in

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which they have been removed in the past for maintenance purposes, and in accordance with procedures approved by the Procedure Review Committee. In addition, all drives have been removed from the upper closure. The regulating rod has been detached from the drive and is stored in the storage pool.

All other RER systems remain intact.

D. DISPOSAL OF COMPONENTS

Authority to dispose of the reactor fuel is contained in the existing license. Lockheed will dispose of the entire fuel inventory, consisting of 94 fuel elements and the fuel sections of 13 control rods.

Lockheed presently has in its possession 13 control rod drives which constitute all drives which were initially intended for use in the Radiation Effects Reactor, the Critical Experiment Reactor (CER), and the Shield Development Reactor (SDR).

The CER was operated prior to 1961 under DOD authorization but has not operated since, and was never licensed for operation by the Atomic Energy Commission. The SDR was never assembled and was never licensed for operation.

Lockheed has in its possession the component parts of the CER, and some of the component parts of the SDR.

Lockheed will dispose of the entire inventory of control rod drives by transfer to a licensed commercial radioactive waste disposal firm in accordance with applicable AEC/DOT regulations.

The drives will be partially disassembled in preparation for shipment, but there will be no cutting or torching involved.

The maximum dose rate measured at contact at any portion of the drives is 100 mr/hr. The disassembly work will involve average dose rates of approximately 5 mr/hr.

During the period of operation of the RER, there has been no detectable release of fission products. Since shutdown of the RER, the concentration of radiation material in the primary coolant and in the storage and reactor pools has consistently been less than 5.0×10^{-7} microcuries per ml gross beta-gamma. Because of the low levels of activity present, there is not expected to be significant smearable contamination on any of the reactor.

All handling of components will be in accordance with the Radiological Control Plan, Section E.

E. RADIOLOGICAL CONTROL PLAN

Radiological Safety responsibility will remain with Lockheed-Georgia Company personnel and safe practices will be maintained at all times during decommissioning work. Radiological safety will be governed by the "LGNL Safety Manual," revised January 1968; "Lockheed Management Directive" J-17, dated December, 1970; the "United States Atomic Energy Commission Rules and Regulations, Title 10, Part 20." and the "Rules and Regulations for Radioactive Materials. Chapter 270-5-20. Georgia Department of Public Health."

Radiological Safety Procedures and Practices, and the LGNL Safety Manual, which were utilized in the normal conduct of the facility as an "operating plant" are considered satisfactory for decommissioning work.

The Lockheed-Georgia Company Radiological Safety Officer is responsible for administering the Radiological Safety Controls Plan within the limits and practices as stated in the above listed documents.

The Lockheed-Georgia Company Isotopes Committee provides surveillance over all activities within the Company associated with radiation hazards.

F. ADMINISTRATIVE ORGANIZATION AND STAFFING

Decommissioning of the RER will be accomplished within the framework already established by the current Technical Specifications of License R-86. Any restrictions imposed as a result of this request shall be supplementary to, but shall not supersede, the requirements of the Technical Specifications.

Lockheed shall be responsible for all activities within the site boundary and shall be responsible for the health and safety of all persons engaged in these activities, and for the health and safety of the general public as it is affected by these activities.

G. DISPOSITION OF FACILITY AND PROPERTY

Plans for final disposition of the facility and the property occupied by the facility are not complete. A sampling program aimed at determining the extent of activation of the soil, structural components, and auxiliary reactor systems has been underway since October, 1970. Since some areas are inaccessible at this time, it is not feasible to complete this program until the reactor fuel and reactor components are removed from the site. In any event, further disposition of property and activated materials will be coordinated with the appropriate regulatory agency.

Enclosure (b)

DISPOSAL OF REACTOR COMPONENTS

Lockheed will dispose of the following reactor components by transfer to a licensed commercial waste disposal firm in accordance with applicable AEC/DOT regulations.

COMPONENT	RADIATION LEVEL*
Inner Tank	3 R/HR
Flow Baffles (12)	135 R/HR
Grid and Scram Damper Assembly	500 R/HR
Hold-Down Plates (3)	15 R/HR
Dummy Fuel Elements	6 R/HR
Regulating Rods (2)	120 R/HR
Separable Guides Attached to Upper Closure	1.2 R/HR

*Reported dose rates were measured in air, at contact (within 2"), and represent the maximum radiation level observed to emanate from any portion of the component.

Sections E and F of the Decommissioning Plan, Enclosure (a) shall apply to handling of the components listed above.

The components have been removed from the reactor as stated in Section C of the Decommissioning Plan.

There have been no destructive or irreversible actions taken in the removal of the components from the reactor, and there will be no cutting or torching involved in the preparation of the listed components for shipment.

The components are of such a size that they can be accommodated by licensed shipping containers currently in the inventory of licensed radioactive waste disposal agencies.

Methods and/or procedures for handling components shall be reviewed by, and shall require the approval of the Procedure Review Committee.