



COMMUNITY SAFETY DEPARTMENT
OFFICE OF RESEARCH & OCCUPATIONAL SAFETY
LOS ANGELES, CALIFORNIA 90024

February 15, 1985

Mr. Harold Denton, Director
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: SSPB

Docket No. 50-142
License No. R-71

Dear Mr. Denton:

This will follow up on my letter of 16 January, 1985, regarding disassembly of the UCLA reactor. The attachment herewith responds to a verbal request from the NRC technical staff for more information concerning UCLA plans. The attachment derives in part from a "Request for Proposal" that UCLA is preparing, to solicit bids for the work there described.

As described in the attachment, the Work Plan is to be a contractors task and UCLA does not intend to submit a dismantlement plan until contractor proposals have been received and reviewed.

In the interim, the reactor staff is proceeding with the selective sampling of reactor constituents to gain a better perspective of realistic decommissioning alternatives. We believe it is in the best interests of the University and the public to utilize the collective knowledge of the present staff to the fullest extent while that staff still exists.

At the present time, approximately 0.6 cubic feet (420 lbs.) of lead and 12 cubic feet (1200 lbs.) of graphite have been removed from the central region of the core. After sampling these materials to determine the principle radio-nuclides present, some of these materials will be packaged for transport and burial. The information gained in this program will contribute materially to our understanding of decommissioning procedures. We hope you will concur.

Sincerely,

Walter F. Wegst
Walter F. Wegst
Director, Office of
Research & Occupational Safety

WFW:si

cc: Director, U.S. NRC Region V

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PREPARATIONS FOR DECOMMISSIONING
THE UCLA REACTOR

1.0 OBJECTIVE:

To evaluate decommissioning alternatives for the UCLA argonaut research reactor located on the UCLA campus in the School of Engineering and Applied Science.

2.0 THE WORK PLAN:

2.1 Conduct a radiation survey of the core constituents, the concrete biological shield, and such other facilities as must be assayed to define the decommissioning requirements and costs. The survey is to be in sufficient detail to provide:

- a. A shipper's description of radioactive materials.
- b. A prognosis of the future radioactivity of major materials (principally graphite, lead, concrete and embedded components).
- c. Data for predicting man-rem doses for various decommissioning alternatives.

2.2 To accomplish the radiation survey, the reactor core is to be disassembled and sorted into major categories: Graphite, lead, other metals.

The metallic parts (non-lead) are to be surveyed only to the extent necessary to satisfy 2.1.a. Those materials are to be cut as necessary, packaged for transport and burial, and shipped to a burial site.

The removal of metallic parts is to include the protruding portions of partially embedded parts, but excludes the embedded portions of those parts.

The graphite and lead are to be palletized in such a way as to conveniently permit:

- a. Their packaging for transport and burial.
- b. Their restacking in the empty core space for shipment at a later date.

2.3 The concrete is to be sampled and assayed to the extent necessary to distinguish between radioactive material and exempt material, and to identify the principal nuclides responsible for the radioactivity.

- 2.4 The process pit is regarded as a potential decontamination site, and is to be cleared of extraneous equipment and piping. The heat exchanger, primary water piping, related flow meters and valves are to be removed. The holding tanks, primary water pumps, and sump pump are to be retained for use in holding, diluting, or otherwise purifying any contaminated water produced by dismantlement-decontamination work.
- 2.5 Based upon the results of the radiation survey and the volumes and masses of the principal constituents, cost estimates are to be prepared for both prompt and deferred decommissioning.
- 2.6 Deferred decommissioning is not yet defined in detail, but in general a viable plan would hinge upon certain key transitions such as the passage of a material into a "low specific activity" or "exempt" status. Radiation worker exposure and cost can be expected to decline with time.
- 3.0 PRESENT STATUS:
- 3.1 The reactor fuel has been removed from the site. The control blade drive shafts have been severed at the exterior surface of the biological shield and the external drive systems removed. All primary water and shield tank water have been drained and removed.
- 3.2 The reactor core has been uncovered and fifteen graphite stringers have been removed from the central region of the core. The stringers are to be sampled for Wigner energy and specific activity measurements.
- 3.3 Removal of the central graphite created a void 12 inches by 20 inches by five feet deep which extends from the core top to the concrete pedestal. The radiation field in the void has a fairly uniform value of one rem per hour.
- 3.4 The staff and others are assembling a Request for Proposal to solicit bids for the continuation toward decommissioning.
- 3.5 The reactor operating staff remains at nearly full level, a level which will not be sustained very much longer. Meanwhile, the staff is acquiring some of the information essential to an informed decision regarding decommissioning alternatives.
- 3.6 All concrete shielding remains on the site and could be readily restored to its usual geometry to create a SAFSTOR or ENTOMB mode of decommissioning.