

APPLICATION FOR AMENDMENT


to

BRIGHAM YOUNG UNIVERSITY REACTOR FACILITY

OPERATING LICENSE NO. R-109

DOCKET 50-262

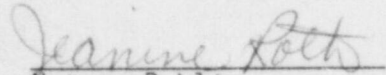
Submitted: \_\_\_\_\_

  
John B. Stohlton  
Executive Vice President  
Brigham Young University

STATE OF UTAH  
COUNTY OF UTAH

John B. Stohlton, being duly sworn, states that he is Executive Vice President of Brigham Young University; that he executed this document for the purpose set forth; that the statements made herein are true to the best of his knowledge, information, and belief; and he is authorized to execute this document on behalf of said university.

Sworn and attested this day before me 26<sup>th</sup> of May, 1987

  
Notary Public

*Residing in Provo, UT*

My commission expires 3-18-90

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## I. GENERAL INFORMATION

- A. This amendment request applies to the homogeneous solution research reactor, designated as the Atomics International Type L-77, owned by Brigham Young University and located on the campus in Provo, Utah 84602.
1. The uranyl sulfate fuel in the reactor has been unloaded and shipped off site. This was done May 4th and 5th, 1987. There is still a 0.5 curie plutonium-beryllium neutron source in the reactor. DOE is making arrangements to have it returned to them.
- B. The Brigham Young University L-77 reactor was delivered to the University by Atomic International, Division of North American Aviation, Inc. in August of 1967. Prior to that, this reactor had been used by Atomics International at several expositions in foreign countries (in the Far East and in Europe) where it had been loaded and operated for demonstration purposes.

When the reactor arrived at Brigham Young University it was loaded with uranyl sulfate solution on the days of the 12th to the 15th of September 1967, with a final U-235 mass of 1447 grams. The reactor was used for the next 15 years until all operations ceased on May 12, 1982. The reactor was used mostly in conjunction with reactor-physics classes but there were also a few operations for research purposes; such as the production of short-lived gamma-ray sources. There were 355 separate operations undertaken prior to the end of operations in May of 1982 and the cumulative watt-hours total for these operations was 1779 watt hours.

- C. Pursuant to the Code of Federal Regulations, Title 10, Chapter 1, Part 50.90, Brigham Young University (BYU) hereby applies for an amendment to its Reactor Facility License R-109, Docket 50-262, to:
1. Change the reactor facility to "Possession Only" status permitting BYU to possess but not operate the BYU L-77 reactor and,
  2. Possess up to a 0.5 curies of plutonium-beryllium source while DOE arranges to have it returned to them and,

3. To possess such byproduct material as may have been produced by the operation of the reactor and that still may be present after the removal of the fuel.
- D. This amendment is being requested because:
1. All reactor operations have been terminated.
  2. The fuel has been unloaded and shipped off site.
  3. To allow sufficient time to plan for the decommissioning of the reactor and to prepare the necessary documentation requesting authorization to decommission the reactor.
    - a. It is anticipated that the documentation requesting authorization to decommission the reactor facility will be submitted within six months after receiving approval for this amendment.
    - b. It is hoped that the decommissioning of the reactor can be completed, at the latest by July 1989.

## II. FACILITY MODIFICATIONS

- A. Reactor Fuel and Neutron Source. The reactor fuel has been removed from the reactor and shipped off site to EG&G Idaho, for reprocessing. This was accomplished on May 4 & 5, 1987. Therefore, BYU does not possess any uranyl sulfate.

The 0.5 curie sealed source of plutonium-beryllium will be stored in the reactor until: 1) DOE authorized the return of this source to their facilities; or 2) we receive authorization to transfer this material to our SNM license.

- B. Reactor Components. The reactor assembly shall remain completely assembled. The access covers and all ports shall remain closed and locked.

However, it is requested that permission be granted to drain and dispose of the water shielding in order to reduce the potential for corrosion. There are approximately 2400 gallons of water in the shielding tank. Before disposing of the water it would be sampled for radioactivity using appropriate methods. The water will be disposed of in accordance to 10 CFR 20.303.

III. It is proposed that the following license conditions be deleted or modified as follows:

- A. Maximum Power Level. Delete because reactor will not be operated and has no fuel.
- B. The Technical Specifications be amended as described in Appendix A.
- C. The following records be kept:
  - 1. Records of any operations involving additions to or deletions of reactor equipment or components.
  - 2. Records of tests and measurements performed pursuant to the Technical Specifications.
  - 3. Records of radiation monitoring.
- D. The following reports will be made to the Campus Radiation Safety Committee at the regular meetings:
  - 1. Reports of the results of radiation surveys.
  - 2. Reports of any preventative maintenance operations.
  - 3. Reports of facility security systems including locks on doors and the alarm system.