

U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I

CO Inspection Report No. 50-310/71-01

Subject: Commonwealth of Pennsylvania and
Nuclear Materials & Equipment Corporation

License No. R-72

Location: Quehanna, Pennsylvania

Priority

Category G

Type of Licensee: Light water research reactor (possess but
not operate)

Type of Inspection: Announced closeout

Dates of Inspection: September 21, 1971

Dates of Previous Inspection: August 7 - 8, 1968

Principal Inspector: J. P. Stohr
J. P. Stohr, Radiation Specialist

10/13/71
Date

Accompanying Inspectors: E. R. Leibl
E. R. Leibl, Reactor Inspector

10/13/71
Date

Date

Other Accompanying Personnel: None

Date

Reviewed By: R. T. Carlson
R. T. Carlson, Senior Reactor Inspector

10/13/71
Date

Proprietary Information: None

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SECTION I

Enforcement Action - None

Licensee Action on Previously Identified Enforcement Matters - None

Unresolved Items - None

Status of Previously Reported Unresolved Items - None

Design Changes - None

Unusual Occurrences - None

Persons Contacted

Dr. Alvin Witt, Site Manager

Mr. Henry Bicehouse, Health and Safety Supervisor

Management Interview

The following subjects were discussed with Dr. Witt on September 22, 1971:

A. Transfer of Material

The inspectors stated that: based upon a review of records and discussions with Mr. Bicehouse, it appeared that unirradiated fuel and irradiated components had been properly transferred or disposed of; however, Material Transfer Form AEC-388 and Material Status Report Form AEC-578 were not on hand. Dr. Witt stated that he would have Mr. Lovett, Manager, Nuclear Materials Control for NUMEC, send copies of these forms to CO:1. (Copies of these forms were subsequently received as attachments to a letter dated 9/22/71 from Mr. Lovett.)

B. Residual Contamination

The inspector reminded Dr. Witt that the termination of the reactor license would not relieve him of any contamination control requirements. Dr. Witt stated that controls would continue to be exercised over those areas, such as the rad waste system, which were now covered by the Materials License.

SECTION II

Additional Subjects Inspected, Not Identified in Section I, Where No Deficiencies or Unresolved Items Were Found

1. General

This reactor has not been operated since transfer of ownership from Curtis-Wright to Pennsylvania State University in 1960. The reactor had been dismantled, and the pool is being used as a Co-60 irradiation facility. The original request for license termination was dated 1/1/71. Supplemental information was supplied to DRL in letters dated 3/5/71 and 3/23/71.

During this inspection it was observed that material which was present during the last CO inspection, i.e., unirradiated fuel elements and activated components, had been transferred. A general tour was made of the entire facility.

2. Records

- a. Radioactive waste transfer, 8/68 - 9/71
- b. Survey records, 8/68 - 9/71
- c. Material transfer, 8/68 - 9/71

3. Primary System

- a. The stainless steel heat exchanger was surveyed for residual activity. There was none detected.
- b. Pool water clean up system.

Details of Subjects Discussed in Section I

4. Core and Internals

- a. Twenty-six reflector elements, 4 mock fuel rods, 2 safety shims and 3 core access elements were transferred on 3/18/71 to Nuclear Engineering Company in six 55 gallon drums. All of the above read less than 100 mR/hr at contact.
- b. Two safety shims remained at the facility after the above shipment due to radiation levels slightly greater than 200 mR/hr at contact. These shims were transferred on 9/15/71 to Nuclear Engineering Company in a concrete shielded 55 gallon drum. The activity was estimated at about 325 mCi of primarily Co-60.

- c. Fourteen drums of miscellaneous waste were transferred to Nuclear Engineering Company on 2/24/69.

5. Fuel Handling

- a. Licensee's shipping records indicated that 5.2 kgms of U-235 contained in 30 unirradiated fuel elements was transferred to Brookhaven National Laboratory on 3/6/69. This action was authorized in License Amendment No. 5 dated 3/5/69.
- b. Copies of Form AEC-388, Material Transfer Form, and Form AEC-578, Material Status Report, were not on hand at the time of the inspection. Copies were subsequently sent to CO:I by Mr. James E. Lovett, Manager of Nuclear Materials Control, NUMEC, as attachments to his letter dated 9/22/71. These forms indicated that the above transfer was reported as was the ending inventory of zero.

6. Radiation Protection

- a. Residual contamination in certain areas is due to prior hot cell work with Sr-90. This contamination is covered by Material License No. 37-12307-02.
- b. Mr. Bicehouse stated that he would continue surveys including those made of equipment before leaving suspect areas.

7. Radioactive Waste System

Contamination remaining in the liquid radioactive waste system is covered by Material License No. 37-12307-02.