

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 30-13089/79-01

Docket No. 030-13089

License No. 17-16109-01

Priority: E

Category: 4

Licensee: Nuclear Systems, Incorporated
P.O. Box 2543
Baton Rouge, Louisiana 70821

Facility Name: Gamma Industries Division

Inspection at: Port Norris, New Jersey

Inspection conducted: May 22, 1979

Inspectors:

John E. Glenn
J. E. Glenn, Radiation Specialist

July 11, 1979
date signed

Approved by:

Robert O. McClintock
Robert O. McClintock, Chief Materials
Radiological Protection Section

7/11/79
date signed

Inspection Summary:

Inspection on May 22, 1979 (Report No. 30-13089/79-01)

Areas Inspected: Special, announced inspection of operations security of materials, disposal of materials by burial, and independent measurements. The inspection involved 8 inspector-hours on site by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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1. Persons Contacted

- * Jack Richard, Vice President
- * Roy Parker, Consultant
- Jim Halgruen, Part Time Employee

The inspectors also talked with and/or were accompanied by representatives of the State of New Jersey, of Cumberland County, and of the local press. In addition the inspectors briefly interviewed a former officer of Cumberland Research Corporation.

* Denotes those attending the exit interview.

2. Scope of Operations

Present activities authorized under License No. 17-16109-01 are limited to possession of a contaminated hot cell facility and storage of contaminated waste. Licensee representatives stated that no other activities had taken place and that none were planned at this time. Observations and measurements by the inspectors confirmed that radioactive materials were not being used on the day of the inspection.

No items of noncompliance or deviations were identified.

3. Security of Materials

The inspectors observed that a chain link fence surrounded the property adjacent to the building containing the hot cell. The front door was noted to be secured by a lock and thick iron bar. The licensee had reinforced the garage entrance door with plywood as specified in their application dated June 30, 1977. Vandals had broken this door despite the plywood reinforcement. On the day of the inspection, the entrance was noted to be secured by welded metal plates covering all but a twelve inch gap at the top of the entry way. The hot cell door was secured by two padlocks and by a metal plate bolted to the adjoining wall.

Although vandals had gained access to the building, licensee representatives stated that there was no indication that entrance had been made into the hot cell. Licensee representatives stated that they believed that the additional bar across the front

door and the welded iron barrier across the garage entrance were adequate to prevent entry into the facility except by the most determined individuals.

Although no items of noncompliance or deviations were identified, licensee representatives indicated that an additional security device would be installed across the hot cell door.

4. Disposal of Materials by Burial

Licensee representatives stated that Nuclear Systems, Inc., Gamma Industries Division was not aware of any burials of licensed material subsequent to the purchase of the assets of Cumberland Research Corporation on November 1, 1972. A former officer of Cumberland Research Corporation stated that up to fifty burials may have occurred from 1969 through 1972. Inspection reports of AEC inspectors indicate that burials were made, and that records reviewed during the period 1969 to 1972 showed the burials met the requirements of 10 CFR 20.304.

The inspectors made surveys to determine if past burials were likely to cause exposure to individuals in the unrestricted areas surrounding the facility. No radiation levels distinguishable from natural background were found outside the fenced area. One location inside the fenced area was found to read 0.08 MR per hour at ground level.

A hole was dug inside the fenced area at the location where radiation levels above background had been located. Radiation levels were observed to increase to about 0.2 mR/hr. at eighteen inches below the surface. Radiation levels decreased rapidly below that depth. Dirt removed from the hole was determined to contain radioactive material using an Eberline E-120 Geiger Counter, SN 3175, last calibrated March 21, 1979.

Another hole was dug in the area outside the fenced area in an area believed to contain buried waste. Radiation levels at the surface using the Geiger counter were not distinguishable from background. Radiation levels at a depth of 3 feet in a small diameter hole were measured to be 0.5mR/hr. These measured radiation levels are consistent with burials of less than 1 millicurie of cobalt-60 at a minimum depth of four feet in accordance with 10 CFR 20.304.

No items of noncompliance or deviations were identified. Licensee representatives agreed to attempt to locate records of burials

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under the previous licence and to make these records available for inspection by the Commission.

5. Independent Measurements

During the inspection, dirt samples were collected at the location inside the fence where radiation levels were detected and from the hole dug at the apparent burial site.

Measurements at the Region I Mobile Laboratory indicated no detectable activity in the soil from the apparent burial site. Cobalt-60 was detected in concentrations of 3×10^{-5} microcuries per gram in soil from the fenced in area. The Part 20, Appendix B limits for Co-60 concentrations in liquid effluents to unrestricted areas are 5×10^{-5} and 3×10^{-5} microcuries per milliliter for soluble and insoluble forms respectively.

In addition, a water sample was taken from a well on the property adjacent to the licensee's facility. Measurements indicated no detectable activity above background.

Items of noncompliance or deficiencies were identified.

6. Ownership of Property

During the inspection, representatives of Nuclear Systems, Inc. stated that they did not believe that their firm owned the property where Cumberland Research Corporation apparently had buried radioactive material. On May 24, 1979, Mr. J. Jaglowski of the Cumberland County Health Department reported that deed records showed that Nuclear Systems, Inc. owned the property extending 396 feet past the fence line. Thus, the apparent burial site would be on Nuclear Systems, Incorporated's property.

7. Exit Interview

The inspector and Mr. Robert O. McClintock, Chief, Materials Radiological Protection Section met with Mr. Richard at the conclusion of the inspection on May 22, 1979. Mr. McClintock and the inspector summarized the purpose and scope of the inspection and the findings. With regard to security, Mr. Richard, said that although the present system of securing the hot cell met NRC requirements, an additional, more tamper-proof lock would be installed. Mr. Richard and Dr. Parker, his consultant, agreed to

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perform a new survey of the facilities and grounds to assure that conditions had not changed since the previous survey in 1977.

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Mailing List Gamma Industries Division Inspection 79-01

Nuclear Systems, Inc.

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