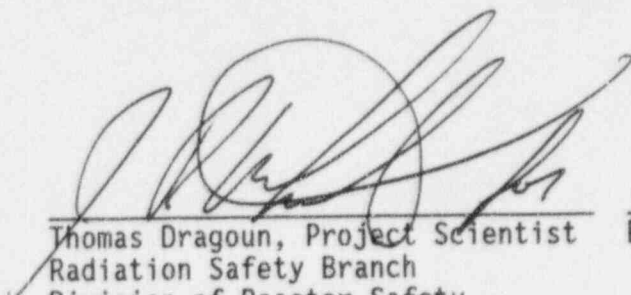


U.S. NUCLEAR REGULATORY COMMISSION
REGION I

REPORT/LICENSE NO: 95-01/R-31
LICENSEE: The Catholic University of America
FACILITY: AGN 201 Nuclear Research Reactor
LOCATION: Washington, D.C.
DATES: November 7-9, 1995

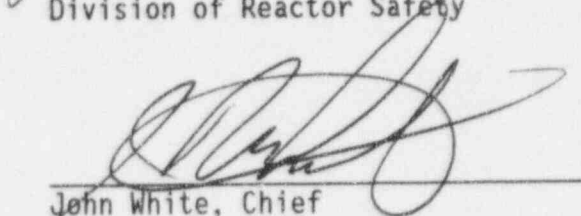
INSPECTOR:



Thomas Dragoun, Project Scientist
Radiation Safety Branch
Division of Reactor Safety

11/28/95
Date

APPROVED:



John White, Chief
Radiation Safety Branch
Division of Reactor Safety

11/28/95
Date

Areas Inspected: Performed a confirmatory radiation survey, reviewed changes to the decommissioning plan, and reviewed selected records.

Results: The inspection confirmed that the facility was successfully decommissioned and is unconditionally releasable.

DETAILS

1.0 INDIVIDUALS CONTACTED

J. Beres, Director of Environmental Health and Safety
Sister R. Donley, Executive Vice President
D. Luster, Radiation Safety Officer and Reactor Administrator

Above personnel attended the exit meeting on November 9, 1995

2.0 REVIEW OF RECORDS

The inspector reviewed the licensee's final radiation survey, records of reactor operation, and monthly radiation surveys to determine areas for increased attention during the confirmatory radiation survey. Records indicated that assorted sealed sources and a small linear accelerator were used in the reactor room. However, no radiological accidents or areas of concern were identified. In addition, the very low power of the reactor and limited operating history implied that production of radioactive fission products and neutron activation of structural material was minimal. For example, licensee calculations conservatively estimated the fission product inventory in the core was 71 microcuries prior to the start of decommissioning. The inspector concluded that no areas required special attention during the confirmatory survey.

3.0 DECOMMISSIONING PLAN CHANGES

The decommissioning plan for this facility was approved by the NRC on September 24, 1992. On December 29, 1994, the licensee submitted a final status survey report. The NRC reviewed this report, requested additional information, and noted that an area in the power plant building, previously occupied by the reactor, was not included in the report. In reply, the licensee submitted a radiation survey plan for this area, which was approved on July 17, 1995. On September 22, 1995, the licensee submitted a final status survey data for the power plant area and supplied the additional information requested by the NRC. The inspector reviewed the licensee's submittals and concluded that all requested information and clarifications had been provided. No additional information was required.

4.0 CONFIRMATORY RADIATION SURVEY

There are two affected areas associated with operation of the reactor. The first is a room in the power plant building where the reactor was used from 1957 to 1961. In 1961 it was relocated to a room in Pangborn Hall. The original location was converted to a machine shop which is still in use. Room B-16R of Pangborn Hall, also known as the nuclear reactor room, housed the reactor for the remainder of its use.

The inspector used the following instruments to perform a confirmatory survey:

- Ludlum Model 19 "Micro R Meter", NRC Tag #033515
- Ludlum Model 18 "Analyzer", NRC Tag #054822, coupled with Ludlum Model 44-9 "Alpha-Beta-Gamma Detector", serial #PR 120892
- Ludlum Model 239-1F "Floor Monitor" coupled with a Ludlum Model 2221 "Portable Scaler Ratemeter", NRC Tag #054827

(Above instruments manufactured by Ludlum Measurements, Inc., Sweetwater, TX)

The survey technique was based on recommendations contained in Draft NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination". Background radiation levels were determined using multiple locations in room B-16 (adjacent to B-16R) in Pangborn Hall and in the mezzanine hallway of the power plant building. Instrument operability and efficiency factors were verified at the beginning and end of each part of the survey using a thorium 230 (alpha), technicium 99 (beta), or cesium 137 button source.

The survey of both the reactor room in Pangborn Hall and the machine shop in the power plant building began with a slow scan radiation survey of the accessible floor area with the Floor Monitor set for audible output. The Analyzer with a model 44-9 probe was similarly used to survey the walls and other horizontal surfaces. No radioactive contamination above background was detected. A slow scan survey was conducted with the Micro R Meter held at one meter from the surface with the audible output enabled. No radiation above ambient background was detected. The Floor Monitor was then used to take stationary, time-integrated measurements at 8 grid-square locations in the reactor room and 7 locations in the machine shop. The inspector used the licensee's grid coordinates. No contaminated areas were found. The inspector also took stationary Micro R Meter readings at 37 locations in the reactor room and 7 locations in the machine shop. No readings above background were detected. There were 28 dry smear samples taken in the reactor room and 7 in the machine shop. These were analyzed for alpha and beta emission in the Region I Counting Laboratory using a Tennelec Model LB5100 gas flow proportional counter. No contaminated areas were detected.

Based on the above sampling, the inspector's survey confirmed the licensee's survey results. Those results indicated that remediation of the facility was complete and all areas were below the limits specified in the decommissioning plan.

5.0 EXIT MEETING

The inspector met with the licensee representatives denoted in Section 1.0 of this report at the conclusion of the inspection on November 9, 1995. The inspector summarized the purpose, scope and findings of the inspection. The licensee acknowledged the inspection findings.