

## EXECUTIVE SUMMARY

This routine, announced inspection included onsite review of selected aspects of the staffing and audit program, radiation protection program, surveillance program, emergency preparedness program, safeguards program, security program, and decommissioning program since the last NRC inspection.

### STAFFING AND AUDITS

The organization was consistent with Technical Specification and Decommissioning Plan requirements.

### RADIATION PROTECTION

The radiation protection program satisfied NRC requirements.

### SURVEILLANCE

The surveillance program satisfied Technical Specification requirements.

### EMERGENCY PREPAREDNESS

The emergency preparedness program was conducted in accordance with the Emergency Plan.

### SAFEGUARDS

Special Nuclear Materials were acceptably controlled and inventoried.

### SECURITY

Security activities and systems satisfied Physical Protection Plan requirements.

### DECOMMISSIONING

Decommissioning activities were in conformance with the approved Decommissioning Plan and Technical Specifications.

## Report Details

### Summary of Plant Status

The reactor tank was drained and the fuel stored in shipping containers. Reactor systems remained intact. Periodic entries were made into the reactor room for routine surveillances. The subcritical carbon pile and the water moderated subcritical assembly in the area adjacent to the reactor room had been removed. Clean items had been staged for removal in several locations but remained in place.

#### 1. STAFFING AND AUDITS

##### a. Scope (40755)

The inspector reviewed selected aspects of:

- organization and staffing
- qualifications
- audits

##### b. Observations and Findings

Key positions in the decommissioning organization and the Radiation Safety Committee (RSC) were filled by knowledgeable and experienced personnel. The Acting Reactor Administrator stated that ex-staff members and several reliable students were available as needed to assist with decommissioning tasks. The first annual meeting of the RSC was scheduled for September 29, 1999, at which time the first biennial audit was to be scheduled.

##### c. Conclusions

The organization was consistent with Technical Specification and Decommissioning Plan requirements.

#### 2. RADIATION PROTECTION

##### a. Scope (40755)

The inspector reviewed selected aspects of:

- the Radiation Protection Program
- radiological signs and posting
- routine surveys and monitoring
- dosimetry records
- maintenance and calibration of radiation monitoring equipment
- as low as reasonably achievable (ALARA) reviews
- control of effluents

b. Observations and Findings

The radiation protection and radiation worker training program were unchanged from the reactor operations phase. Caution signs and postings were as required in 10 CFR Part 20, Subpart J. Radiological exposure records showed that occupational doses and doses to the public were within 10 CFR Part 20 limitations.

Radiation monitoring and survey activities were as required. Equipment used for these activities were maintained and calibrated.

A documented ALARA program was implemented. No exposures exceeded the action levels to trigger a formal review.

Reactor tank water and ion exchange resin were analyzed by a contractor (Nuclear Diagnostic Laboratory) prior to discharge of the water. No radioactive material was detected.

c. Conclusions

The radiation protection program satisfied NRC requirements.

3. SURVEILLANCE

a. Scope (40755)

The inspector reviewed selected aspects of:

- surveillance procedures
- surveillance records

b. Observations and Findings

Surveillance were completed in accordance with licensee procedures. The records reviewed were completed and were being maintained as required.

c. Conclusions

The surveillance program satisfied Technical Specification requirements.

4. EMERGENCY PREPAREDNESS

a. Scope (40755)

The inspector reviewed selected aspects of:

- the Emergency Plan
- emergency response facilities and equipment
- offsite support

b. Observations and Findings

The Emergency Plan (E-Plan) in use and emergency facilities were the same as used during reactor operations. The notification roster, facilities, and equipment were being maintained as required in the E-Plan. Off-site support was also as required by the E-Plan.

c. Conclusions

The emergency preparedness program was conducted in accordance with the Emergency Plan.

5. SAFEGUARDS

a. Scope (85102)

The inspector reviewed selected aspects of:

- nuclear material inventory and locations
- accountability records

b. Observations and Findings

The reactor fuel, plutonium-beryllium startup source, and fission chambers, including spares, held under License No. R-94 remain onsite. The fuel was stored in the shipping containers in which it arrived during the 1991 conversion from HEU to LEU fuel. Custody of all SNM and management of the accountability program were the responsibility of the Acting Reactor Administrator. The material control and accountability forms (DOE/NRC Forms 741 and 742) were prepared and transmitted in digital format as required.

c. Conclusions

Special Nuclear Materials were acceptably controlled and inventoried.

6. SECURITY

a. Scope (81431)

The inspector reviewed selected aspects of:

- the Physical Protection Plan
- security systems and equipment
- implementation of the Physical Protection Plan

b. Observations and Findings

There was no change to the Physical Protection Plan or physical protection systems (barriers and alarms) since cessation of reactor operations. Utilization of the rest of the building was unchanged. Periodic tests of the alarm system were conducted and documented as required.

c. Conclusions

Security activities and systems satisfied Physical Protection Plan requirements.

7. DECOMMISSIONING

a. Scope

The inspector reviewed selected aspects of:

- decommissioning progress
- procedures
- termination survey

b. Observations and Findings

Progress relative to the ten step schedule in Section 2.3.2 of the Decommissioning plan is as follows: Step 1 - disposal of moderating water is complete; Step 2 - the interim survey is scheduled to begin on October 16, 1999; Step 3 - removal of components exceeding release criteria, and Step 4 - decontamination of floors and walls will begin pending the results of the Step 2 survey. Completion of the remaining steps depend on transfer of the fuel and startup source to DOE which has not been scheduled by DOE.

No remediation procedures were developed. The Acting Reactor Administrator stated that only sealed sources were used in the facility, the reactor was operated in the milliwatt range, and routine surveys during reactor operations did not detect any radioactive material. No activation or contamination is expected to be found during decommissioning. If radioactive material is found, an appropriate remediation procedure will be developed and approved by the RSC.

Reference grids were marked in the facility in preparation for the license termination survey. Appropriate survey meters and laboratory counting equipment were available.

c. Conclusions

Decommissioning activities were in conformance with the approved Decommissioning Plan and Technical Specifications.

8. EXIT MEETING

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on September 27, 1999. The licensee acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

H. Hollein, Interim Dean of Engineering  
C. Stanton, Acting Reactor Administrator

INSPECTION PROCEDURES USED

IP 40755 CLASS III NON-POWER REACTORS  
IP 81431 FIXED SITE PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL OF  
LOW STRATEGIC SIGNIFICANCE  
IP 85102 MATERIAL CONTROL AND ACCOUNTING

ITEMS OPENED, CLOSED, AND DISCUSSED

OPENED:

none

CLOSED:

none

LIST OF ACRONYMS USED

CFR Code of Federal Regulations  
DOE Department of Energy  
HEU High enrichment uranium fuel  
LEU Low enrichment uranium fuel  
RSC Radiation Safety Committee  
SNM Special Nuclear Material