

JUL 3 1985

DOCKET NO: 70-1257  
LICENSEE: Exxon Nuclear Company, Inc. (ENC)  
FACILITY: Richland, Washington  
SUBJECT: ENVIRONMENTAL ASSESSMENT - OPERATION  
OF A URANIUM RECOVERY FACILITY

### Introduction

By application dated March 20, 1985, ENC requested authorization to permit the construction and operation of a uranium recovery facility. This facility is designed to recover uranium from chemical process waste solutions for recycle to the fuel conversion process. Although operation of the uranium recovery facility is expected to provide some environmental benefit, there may be an associated increase in effluents from the ENC plant. Accordingly, pursuant to 10 CFR Part 51.21, the Nuclear Regulatory Commission (NRC) has prepared this assessment of the resulting impacts.

### Background

Since 1974, ENC has been authorized under Special Nuclear Material License No. SNM-1227 for the manufacture of low-enriched uranium fuel for light water reactors (LWR).

On September 6, 1983, the NRC issued Amendment No. 11 to SNM-1227 which authorized the construction and operation of a uranium recovery demonstration plant. The purpose of the facility was to demonstrate the feasibility to recover uranium from chemical process waste solutions. Subsequent demonstration runs of the facility have proven the process to be successful. Therefore, ENC proposes to expand the equipment and facilities used in the demonstration unit for the proposed uranium recovery facility.

### The Proposed Action

The proposed action is an amendment to License No. SNM-1227 to authorize ENC to operate a uranium recovery facility. ENC will use the existing uranium recovery demonstration plant and in addition, ENC plans to construct a second process line and support facilities for the uranium recovery from liquid waste. Construction approval was given to ENC on June 14, 1985.

### Need for the Proposed Action

Currently, ENC's liquid process waste solutions are discharged into evaporating lagoons located onsite or into the sanitary waste discharge.

Operation of the uranium recovery facility will reduce the uranium concentration presently found in some stored chemical process waste solutions. As a result, benefits are realized in terms of: (1) reduction in the quantity of uranium which might ultimately have been disposed of by burial or released into the sanitary discharge by allowing for recovery and recycle back into the process, and (2) reduction in the quantity of stored waste thereby reducing the potential for groundwater contamination through future potential leakage.

#### Alternatives to the Proposed Action

Alternatives to the proposed action include complete denial of ENC's application. This would not present an important advantage because current plant emissions are well below standards for environmental protection. The slight increase in effluents that may result from the proposed uranium recovery as discussed below, can be accommodated without violating these standards or significantly increasing environmental impacts. In addition, this alternative would prevent the environmental benefits that would be gained from the recovery of uranium.

#### Environmental Impacts of the Proposed Action

##### A. Construction Impacts

The land intended for the uranium recovery facility is already committed for industrial use. Thus, there will be no significant impact as a result of the construction of the uranium recovery facility.

##### B. Liquid Effluents

Although the volume of liquid discharged from the ENC plant is expected to increase as a result of uranium recovery operations, the discharge into the sanitary waste discharge will meet with the State of Washington Waste Discharge Permit 3919 and 10 CFR Part 20.303 requirements. Therefore, the environmental impact is minimal.

##### C. Gaseous Emissions

Because of the nature of the uranium recovery process, the gaseous emissions are expected to be minimal. This expectation is supported by the findings during operation of the uranium recovery demonstration plant.

##### D. Solid Waste

Solid waste, as a result of uranium recovery operations, will be general contaminated trash, such as paper, filters, clothing, etc. These items will be packaged into approved containers for disposal offsite.

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<sup>1</sup> U.S. Nuclear Regulatory Commission, "Environmental Impact Appraisal Related to License Renewal of Special Nuclear Materials License No. SNM-1227, Exxon Nuclear Company," August 1981.

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Summary and Conclusion

The uranium recovery facility will extract uranium from liquid waste for recycle into the fuel conversion process. As a result, this will eliminate potential storage problems, i.e., leakage, soil contamination, associated with the liquid waste. Although a small quantity of uranium will be discharged into sanitary waste discharge and eventually into the Columbia River, the impact is small. By reducing the total quantity of uranium released to the environment, the operation of the uranium recovery facility will result in an overall environmental improvement. Therefore, in accordance with 10 CFR Part 51.31, a Finding of No Significant Impact is considered appropriate for this action.

Original signed by:  
**Kishore Kodali**

Kishore K. Kodali  
Uranium Process Licensing Section  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

Approved by      Original signed by:  
                    **W. T. Crow**  
                    W. T. Crow, Section Leader

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NAME: KKodali/as: VLTharpe	: WTCrow	:	:	:	:	:	:	:
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