PDR

EXXON NUCLEAR COMPANY, Inc.

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June 22, 1979

Mr. William T. Crow
Fuel Reprocessing & Fabrication Branch
Division of Fuel Cycle & Material Safety
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

License No. SNM-1227
Docket No. 70-1257

Dear Mr. Crow:

Exxon Nuclear Company, Inc. intends to modify and expand its Horn Rapids Fuel Fabrication Plant facilities. The bases for these additions, expansions and modifications are listed below:

1. Increase UO_2 fuel production capacity to 550 metric tonnes uranium (MTU) per year;

2. Improve the capability to remove uranium from liquid wastes generated in the UF_6-UO_2 conversion facility;

3. Improve SNM accountability sampling of liquid wastes discharged to the lagoon system;

4. Improve economics and control of laundering uranium-contaminated protective clothing and equipment;

5. Recover uranium from uranium-contaminated solid waste and volume reduction; recover uranium from the lagoons and dispose of solids removed from the lagoons;

6. Eliminate the need for trucks entering the exclusion area to deliver and remove UF_6 cylinders and to deliver bulk chemicals; and

7. Eliminate the use of trailers for office and storage space.

A summary of the activities involved in the individual parts of this program and our estimated schedules is enclosed for your information and review. A number of the identified facilities will not be used to conduct activities licensed by the NRC, and are identified for information only. Detailed environmental impact information and license amendment applications, where and when required, will be submitted separately at appropriate future dates.

Sincerely,

H. Paul Estey

H. Paul Estey, Manager
Licensing and Compliance,
Richland Facilities

HPE:gf
Enclosures
As noted

CC: Mr. W. J. Cooley (USNRC)

ENCLOSURE

SUMMARY

The items listed and described below are identified by respective numbers on the attached Site Plan.

1. Office Building Complex Addition

Start Schedule: 6/1/79

Size: 12,000 sq.ft., 1 story building

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

2. New Process Chemical Waste Storage Lagoon

Start Schedule: 6/1/79

Size: 70,000 sq.ft., 6 ft. deep

Environmental Impact: Construction activities; the use of this lagoon will not increase the environmental impact of the lagoon system as it is currently being used.

Additional Information to be Submitted: None

Comments: Two additional test wells will be drilled into the ground water, and these will be incorporated into the lagoon leak monitoring program. This expansion project was scoped in Phase III of the overall expansion plans outlined in ENC's letter of June 7, 1973. The construction of this lagoon at this time provides the extra storage capacity required to allow relining of the other three lagoons this year. However, it will also provide the additional storage capacity and surface area required for the increased fuel fabrication capacity described in Item No. 11.

3. P.I. Tool Examination Facility

Start Schedule: 9/1/79

Size: 1200 sq.ft., 1 story building

Environmental Impact: Construction activities; the operation to be housed in this building will be moved out of an existing building.

Additional Information to be Submitted: None

Comments: Inspection tools used by ENC at nuclear power plants (and which are contaminated with mixed fission products) are examined, maintained, and stored in this facility. The operation of this facility is licensed by the State of Washington.

4. Materials Warehouse Expansion

Start Schedule: 1/1/80

Size: 8000 sq.ft., 1 story building addition

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

5. New UF_6 Cylinder & Chemical Storage Facilities

Start Schedule: 9/1/79

Size: 21,600 sq.ft. of ground area

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

Comments: A fenced area with external and internal gates will be provided so that deliveries of these materials can be made without trucks entering the exclusion area. Existing facilities will be relocated to this area.

6. Temporary (Evaluation) Laundry Facility

Start Schedule: 7/1/79

Size: 320 sq.ft., 1 story, pre-fabricated module

Environmental Impact: The only effluent from this facility will be gaseous, which will be double HEPA filtered. Uranium-contaminated protective clothing will be laundered (dry-cleaned) in this facility. The volume of the gaseous effluent will be $\sim$ 1000 cu.ft. per minute, and the uranium concentration will be less than 2×10^{-12} µCi/ml. The exhaust air will be continuously sampled, and the samples will be analyzed weekly and the results properly documented.

Additional Information to be Submitted: None

Comments: This is a commercial facility designed and built by Health Physics Systems, Inc., and offered as a service to nuclear facilities. Exxon Nuclear intends to rent this facility for a 6-month period in order to evaluate the adequacy of the system for our protective clothing laundering needs. The facility will be operated as a uranium-contamination controlled area in accordance with established UO_2 facility radiation protection procedures and controls. Prior to release from Exxon Nuclear control, the facility will be decontaminated to acceptable levels specified in "Guidelines for Decontamination of Facilities & Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material", USNRC, November 1976.

7. Permanent Laundry Facility

Start Schedule: 1/1/80

Information to be Submitted: Following the evaluation described in Item No. 6, Exxon Nuclear will submit pertinent information on its' permanent laundry facility to the USNRC for review and approval prior to start of installation.

8. Liquid Waste Mixing/Monitoring Facility

Start Schedule: 7/15/79

Size: 600 sq.ft., 1 story building

Environmental Impact: Construction activities. There will be no additional liquid nor gaseous effluents.

Additional Information to be Submitted: None

Comments: Presently, all liquid waste streams going to the Process Chemical Waste Storage Lagoon System are combined prior to discharge into the lagoons. Under the future concept, uranium-bearing liquid waste streams will be maintained separate from non-uranium-bearing liquid waste streams until they are discharged into the lagoons. The several uranium-bearing liquid waste streams will be combined in a surge tank in the new Liquid Waste Mixing/Monitoring Facility. As the combined flow is discharged from the surge tank, the volume will be accurately measured, and a continuous sampler will accumulate representative samples. The flow will then be neutralized in a mixing device and discharged to the lagoons. The purpose of this facility will be to provide improved SNM accountability.

9. Ion-Exchange System & Facilities

Start Schedule: 9/1/79

Size: Separate building, 1200 sq.ft., 1 story, 24 ft. high; 200 sq.ft. addition to the UO_2 Building tank gallery

Environmental Impact: Construction activities; no additional liquid nor gaseous effluents; decrease in the uranium content of UF_6-UO_2 conversion liquid wastes.

Additional Information to be Submitted: Criticality safety demonstration.

10. Waste Uranium Recovery Facility

Start Schedule: Phase I - 9/1/79
Phase II - 7/1/80

Size: Phase I - Two-story building with 2400 sq.ft. on the ground floor
Phase II - Two-story building addition with 1600 sq.ft. on the ground floor

Information to be Submitted: Environmental impact information and criticality safety demonstration.

11. Increase UO_2 Fuel Production Capacity to 550 MTU/Yr.

This will involve construction of satellite buildings to house non-uranium operations, expansion of UO_2 Building additions, adding additional production equipment, and rearranging existing production equipment. This project will cover the approximate time period from 7/15/79 to 7/1/82. The major individual steps of this project are described below.

11.1 Maintenance Building

Start Schedule: 7/15/79

Size: 12,500 sq.ft., 1 story building

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

Comments: Maintenance equipment currently located in the UO_2 Building and used for "non-contaminated" maintenance activities will be moved to the Maintenance Building. This expansion project was scoped in Phase III of the overall expansion plans outlined in ENC's letter of June 7, 1973. Uranium processing equipment will be installed in the space in the UO_2 Building vacated by equipment moved to the Maintenance Building.

11.2 Component Fabrication Building

Start Schedule: 9/1/79

Size: 24,000 sq.ft., 1 story building

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

Comments: Component fabrication and tubing receiving, inspection and cleaning operations currently located in the UO_2 Building will be moved to the Component Fabrication Building. This expansion project was scoped in Phase III of the overall expansion plans outlined in ENC's letter of June 7, 1973. Uranium processing equipment will be rearranged and additional (and similar to existing equipment) equipment will be installed in the space in the UO_2 Building vacated by equipment moved to the Component Fabrication Building.

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11.3 Physical Testing Laboratory Building

Start Schedule: 9/1/79

Size: Two-story building with 1400 sq.ft. on each floor

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

Comments: Non-radioactive material physical testing and analytical laboratory operations will be moved out of the UO_2 Building and into the Physical Testing Laboratory Building. Uranium analytical laboratory operations will be expanded in the UO_2 Building in the space vacated by operations moved to the Physical Testing Laboratory Building. This expansion project was scoped in Phase III of the overall expansion plans outlined in ENC's letter of June 7, 1973.

11.4 UO_2 Powder Storage Facility Expansion

Start Schedule: 1/1/80

Size: 1300 sq.ft., 1 story building addition

Environmental Impact: Construction activities; there will be no liquid nor gaseous effluents from this facility.

Additional Information to be Submitted: None

Comments: Only closed containers (externally free of significant uranium contamination) of UO_2 powder are allowed in this facility.

11.5 UO_2 Building Office Expansion

Start Schedule: 3/1/80

Size: Two-story addition with 1700 sq.ft. on each floor

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

11.6 Operating Mezzanine Over the Pellet Press Area of the UO_2 Building

Start Schedule: 7/1/80

Size: 1700 sq.ft.

Environmental Impact: Construction activities.

Additional Information to be Submitted: None

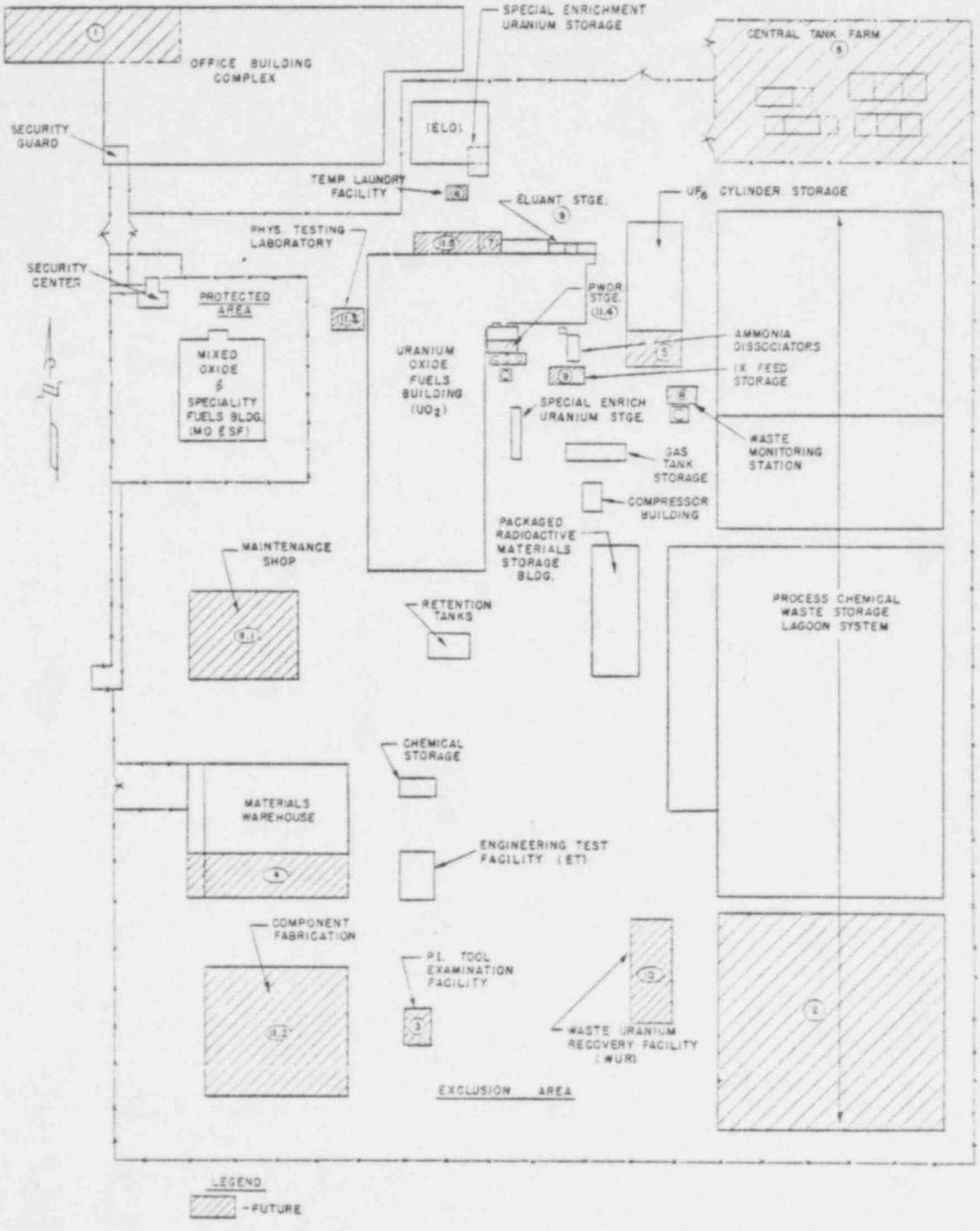
Comments: UO_2 blending with lubricant and green scrap materials and pellet press feed operations will be performed on this mezzanine.

11.7 Addition & Rearrangement of UO_2 Building Process Equipment

Schedule: 9/1/79 to 7/1/82

Information to be Submitted: Revised floor plans of the UO_2 Building and environmental impact information.

Comments: A third UF_6-UO_2 conversion line and a fourth pelletizing and rod loading line will be added in existing space in the UO_2 Building vacated by relocation of non-uranium operations to satellite facilities and rearrangement of process equipment.



SITE PLAN

EXXON NUCLEAR COMPANY, INC.
HORN RAPIDS UO_2 FUEL FABRICATION PLANT

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