

PDR ✓

**EXXON NUCLEAR COMPANY, Inc.**

RESEARCH AND TECHNOLOGY CENTER

2955 George Washington Way, Richland, Washington 99362

PHONE: (509) 943-7100

February 26, 1979

Mr. William Dircks, Director  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20553

Attention: Mr. R. E. Cunningham:



Re: Docket 70-2219

Gentlemen:

On October 4, 1976, the Nuclear Regulatory Commission issued an Environmental Impact Appraisal and a Negative Declaration towards the proposed action of issuing a Special Nuclear Material License to Exxon Nuclear Company, Inc. for a proposed Experimental Test Facility (ETF) which it proposes to construct and operate under a services contract agreement with Jersey Nuclear-Avco Isotopes, Inc., which is a corporation jointly owned by Exxon Nuclear Company and Avco Everett Research Laboratories, Inc. The documentation attached to this letter updates or replaces information furnished earlier, and appraises the Staff of current plans.

Attachments 1 and 2 are intended to replace, in total, the two previously submitted documents, XN-EL-29 and XN-EL-29 SUPP. We request that the Staff return the four copies of the proprietary document XN-EL-29-SUPP previously submitted and return, or destroy, document XN-EL-29 since these are being replaced in their entirety. The copies of XN-EL-29-SUPP, Rev. 1 are transmitted to the NRC in confidence and a request for confidential treatment of the proprietary data therein is enclosed as Attachment 3.

Attachment 4 is a current list of principal Company officers.

Attachment 5 contains descriptive material assessing the environmental consideration resulting from the evolving ETF design and adjustment of the site location. We find that there will be no significant changes in the environmental impact resulting from our evolving design or adjustment of site location over those previously determined.

**FREE EXEMPT**

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AN AFFILIATE OF EXXON CORPORATION

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February 26, 1979

When the original application was submitted in 1976, an application fee of \$10,300 was enclosed. Pursuant to 10CFR 170.31, the application fee for this type of license is currently \$3,000 and an amendment fee, \$1,400. Since the material submitted herewith covers material not yet reviewed by the NRC staff, an amendment fee may not apply. We request that the staff evaluate the appropriate fee and refund any overpayment appropriate to the present situation.

Following issuance of the SNM license, it is Exxon Nuclear's current intent to begin construction of the ETF. Our target date is July 1, 1979, and we request that the staff proceed with an expedited review of the enclosed application materials with an objective of issuing the Special Nuclear Material License on or before that date. If there is a need for clarification or additional information, please address all communications to:

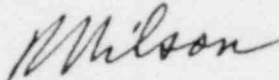
Roy Nilson, Manager, Licensing  
Exxon Nuclear Company, Inc.  
2955 George Washington Way  
Richland, WA 99352

with copy to:

Harold K. Forsen  
Vice President and Executive-in-Charge,  
Laser Enrichment  
Exxon Nuclear Company, Inc.  
777 - 106th Avenue NE  
C-00777  
Bellevue, WA 98009

Very truly yours,

EXXON NUCLEAR COMPANY, INC.



Roy Nilson, Manager Licensing

RN:jes

attachments

ATTACHMENT 3

A F F I D A V I T

STATE OF Washington

)  
) ss.

COUNTY OF Benton

I, Roy Nilson, being duly sworn, hereby say and depose:

1. I am Manager, Licensing, for Exxon Nuclear Company, Inc., ("ENC") and Vice President of Jersey Nuclear-Avco Isotopes, Inc. ("JNAI") and as such I am authorized to execute this Affidavit.

2. I am familiar with ENC's and JNAI's detailed document control system and policies which govern the protection and control of information.

3. I am familiar with the document XN-EL-29 SUPP, Revision 1, entitled "License Application for Special Nuclear Material: Experimental Test Facility", referred to as "Document", which is being submitted by ENC in support of its SNM license application for the Experimental Test Facility, which ENC plans to construct and operate under contract with JNAI, which is partially owned by ENC. Information contained in this Document has been classified by ENC and JNAI as proprietary in accordance with the control system and policies established for the control and protection of information.

4. The Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by ENC and JNAI and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in the Document as being proprietary and confidential.

5. The Document has been made available to the United States Nuclear Regulatory Commission in confidence, with the request that the information contained in the Document not be disclosed or divulged.

6. The Document contains information which is vital to a competitive advantage of JNAI and would be helpful to competitors of JNAI when competing with JNAI.

7. The information contained in the Document is considered to be proprietary by ENC and JNAI because it reveals certain distinguishing aspects of the laser isotope separation methods which secure competitive economic advantage to JNAI by unique design. For example, the document contains detailed process flow data which would provide competitors with significant information which could be used to the substantial detriment of JNAI and its shareholders and hamper JNAI's efforts to compete in the marketplace.

8. The disclosure of the proprietary information contained in the Document to a competitor would permit the competitor to reduce its expenditure of money and manpower and to improve its competitive position by giving it extremely valuable insights into JNAI's design and proposed operations and would result in substantial harm to the competitive position of JNAI.

9. The Document contains proprietary information which is held in confidence by JNAI and is not available in public sources.

10. In accordance with JNAI's policies governing the protection and control of information, proprietary information contained in the Document has been made available, on a limited basis, to others outside JNAI only as required and under suitable agreement providing for non-disclosure and limited use of the information.

11. JNAI policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis. Checks are made routinely to assure the policy procedures are being met.

12. This Document provides information which reveals technology developed by JNAI over the past several years. JNAI has invested many millions of dollars and many man-years of effort in the related process development efforts. Assuming a competitor had available the same background data and incentives as JNAI the competitor might, at a minimum, develop the information for the same expenditure of manpower and money as JNAI.

13. Based on my experience in the industry, I do not believe that the background data and incentives of JNAI's competitors are sufficiently similar to the corresponding background data and incentives of JNAI to reasonably expect such competitors would be in a position to duplicate JNAI's proprietary information contained in the documents.

THAT the statements made hereinabove are, to the best of my knowledge, information, and belief, truthful and complete.

FURTHER AFFIANT SAYETH NOT.

*Milson*

SWORN TO AND SUBSCRIBED

before me this 27<sup>th</sup> day of

February, 1979.

*Delores L. Lund*  
NOTARY PUBLIC

ATTACHMENT 4

EXXON NUCLEAR COMPANY, INC.

Principal Officers

H. E. McBrayer, Chairman and  
Chief Executive Officer\*

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009

Lee R. Raymond, President and  
Chief Executive Officer\*\*

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009

E. R. Astley, Vice President and  
Executive-In-Charge, Projects

Exxon Nuclear Company, Inc.  
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L. P. Bupp, Vice President and  
Executive-In-Charge, Technology and  
Overseas Nuclear Fuel Supply

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
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W. T. England, Vice President and  
Executive-In-Charge, Corporate Affairs

Exxon Nuclear Company, Inc.  
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Bellevue, Washington 98009

H. K. Forsen, Vice President and  
Executive-In-Charge, Laser Enrichment

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
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Bellevue, Washington 98009

P. R. McMurray, Vice President and  
Executive-In-Charge, Marketing and  
Uranium Operations

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009

R. K. Robinson, Vice President and  
Executive-In-Charge, Nuclear Fuels Dept.

Exxon Nuclear Company, Inc.  
2101 Horn Rapids Road  
Richland, Washington 99352

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\* Chief Executive Officer until March 15, 1979.

\*\* Effective March 15, 1979.

L. J. Brown, Controller

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009

J. W. Fredericks, Secretary

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009

F. A. Risch, Treasurer

Exxon Nuclear Company, Inc.  
777 106th Avenue N.E.  
C-00777  
Bellevue, Washington 98009



ATTACHMENT 5

EXXON NUCLEAR COMPANY, INC.

DOCKET NO. 70-2219

Environmental Appraisal Information

For The Proposed

Exxon Nuclear Experimental Test Facility

The proposed Exxon Nuclear Experimental Test Facility (ETF) design has been further developed and the facility location on the site revised from that described in documents XN-EL-19,<sup>(1)</sup> XN-EL-19-SUPP,<sup>(2)</sup> XN-EL-29,<sup>(3)</sup> and XN-EL-29-SUPP.<sup>(4)</sup> The design revisions do not significantly affect the projected environmental impact.

The Nuclear Regulatory Commission, on the basis of documents XN-EL-19 and XN-EL-19-SUPP and supplemental correspondence and meetings, concluded that "there will be no significant environmental impact attributable to the proposed action" (issuing an SNM license). The NRC issued an Environmental Appraisal and Negative Declaration. It is our opinion that the revisions in the ETF Facility and location should not lead to any change in those findings. The information presented herein supports this finding.

The ETF has been relocated from a point just south of the existent Exxon Nuclear Fuel Fabrication Plant to a point just to the west of the Fuel Fabrication Plant. This location was considered as an alternative in XN-EL-19. At that time (1976), the land to the south was preferred because it was owned by ENC whereas the west location was then under

option and required additional capital outlay. During the intervening years, the Fuels Plant has expanded to the south. While the actual land on which the ETF would have been located is still not occupied, it is now less desirable to build there with the added limitation on flexibility of space between the ETF and the Fuels Plant. Also, Exxon Nuclear now has plans to purchase the west location.

With respect to environmental impact, the two locations are so similar as to be nearly indistinguishable. The move 3/4-mile west places the ETF slightly farther from the Richland population center and the nearest residential areas. Thus, the relocation itself would tend to reduce the already small impact of any radiological releases on the neighboring population. However, this is not a significant factor in the overall appraisal.

Research work over the past three years has caused some changes in the details of the research to be accomplished in the ETF and has affected the equipment required. The conceptual design has also matured. None of these changes have any significant effect on environmental impact. The principal advances have been in:

- a) Uranium vaporization and collection module design.
- b) Equipment design to handle the metallic uranium.
- c) Equipment arrangements and resulting building size and shape.
- d) Definition of requirements for a waste lagoon (which was described in XN-EL-19). The lagoon now is included in the plan.

The advances follow mainly from an effort to partially automate and expedite the flow of metallic uranium into and out of the vaporization module. It is important to evaluate the problems to be encountered in handling the uranium under high flow conditions and it is important to have reliable high material flows to permit the experimental enrichment studies to proceed unimpeded by inadequate handling methods.

The advances in materials handling design have virtually no effect on the overall environmental impact of facility operation, or expected equipment failures and accidents. For the class of lower probability accidents (treated in XN-EL-19 and summarized by the NRC Staff in Table 12 of NR-FM-010),<sup>(5)</sup> the breach of the vaporization module, if analyzed on the same conservative basis, leads to the release of  $4.5 \times 10^{-3}$  grams of uranium. A breach of the disassembler enclosure could release a similar quantity. These releases are not significant in the overall impact assessment because the most severe consequence for an individual at the nearest site boundary is a 50-year dose commitment to the lung of only  $2.2 \times 10^{-3}$  mrem.

The ETF designers have weighed the costs versus the benefits of the alternatives for contaminated waste water disposal. In the initial licensing submission, principally document XN-EL-19, a waste lagoon was chosen for evaporation of the waste water. The lagoon was later removed from the scope at the time of the XN-EL-29 submission in favor of volume reduction by reverse osmosis combined with thermal evaporation. Exxon Nuclear has accumulated experience with a double-lined lagoon system for the Fuel Fabrication Plant and this has now been chosen for evaporation of waste water also in the ETF. The lagoon system has the advantage of substantial savings in electrical consumption and can more readily accommodate the process upsets to be expected in an experimental operation. The balance of benefits strongly favors the lagoon.

SUMMARY

Advances in the ETF building and equipment design and a move from property south of the Fuel Plant to property west of the Fuel Plant and firming of a decision to use a lagoon for waste water evaporation have no significant effect on environmental impact over that previously estimated.

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- (1) XN-EL-19, "Environmental Appraisal Report: Experimental Test Facility", January, 1976.
  - (2) XN-EL-19-SUPP, "Environmental Appraisal Report: Experimental Test Facility Proprietary Supplement", January, 1976.
  - (3) XN-EL-29, "License Application for Special Nuclear Material: Experimental Test Facility", May, 1976.
  - (4) XN-EL-29-SUPP, "License Application for Special Nuclear Material: Experimental Test Facility Proprietary Supplement", May, 1976.
  - (5) NR-FM-010, "USNRC Environmental Impact Appraisal by the Division of Fuel Cycle and Material Safety Related to the Issuance of Special Nuclear Material License Experimental Test Facility for Exxon Nuclear Company, Inc., Docket No. 70-2219", October 4, 1976.

DOCKET NO. 70-2219

DATE: 3-6-79

NOTICE TO NRC PUBLIC DOCUMENT ROOM

The following item(s) are being withheld from public disclosure pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974.

Proprietary Supplement XN-EL-29-SUPP  
Rev 1