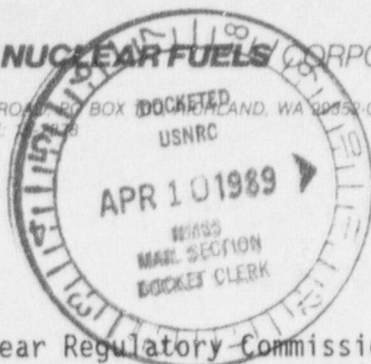


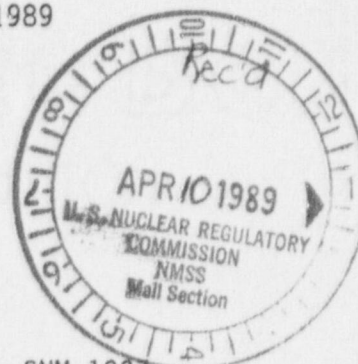
ADVANCED NUCLEAR FUELS CORPORATION

2101 HORN RAPIDS ROAD, BOX 100, BELLINGHAM, WA 98250-0130
(509) 375-8100 TELEX: 100000

CORPORATE LICENSING



March 30, 1989
CWM:89:028



U.S. Nuclear Regulatory Commission
Attention: Mr. L. C. Rouse, Chief
Fuel Cycle Safety Branch
Division of Industrial and Medical Nuclear Safety
Washington, DC 20555

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

Dear Mr. Rouse:

Advanced Nuclear Fuels Corporation (ANF) hereby submits modified pages of License No. SNM-1227 for your review. These pages alter the authorized possession limit, reference the letter of financial assurance for decommissioning funding to new regulation 10 CFR 70.25, and record the latest revision to the radiological contingency plan.

The possession limits authorized by the current license need to be revised so that the amount of uranium enriched to greater than 10 percent in the U-235 isotope is limited to an amount commensurate with our safeguards plan. The new amounts are included in a revised page 1-2 to the reference license which is enclosed for your review.

At the time of our last license renewal, the requirement for financial assurance of decommissioning costs was not included in the Code of Federal Regulations. It since has been added as a regulation and page 7-6 of the reference license has been revised to reflect that the financial assurance letter in Appendix A of the license reflects the new regulatory requirement.

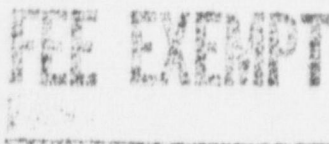
The radiological contingency plan has been revised to include chemical emergencies and to reflect the name change from Exxon Nuclear Company, Inc., to Advanced Nuclear Fuels Corporation. It is judged that none of the modifications nor additions to the plan have decreased its effectiveness.

It is our understanding that these are housekeeping items and no fee is required. If no comments are forthcoming, the revised pages will be officially issued by ANF Document Control.

Very truly yours,

C. W. Malody

C. W. Malody, Manager
Corporate Licensing



DF03
11

PART I - LICENSE CONDITIONS		REV. 18
1.4 <u>Possession Limits</u>		
1.4.1 <u>Uranium-235</u>		
1. One hundred grams, in addition to the limits listed below, of any enrichment or form for analytical purposes. 2. Nine and one-half kilograms contained in uranium compounds enriched from 10.00 wt% to a maximum of 19.99 wt% in the U-235 isotope (see Section 1.6.2 for restrictions). 3. Two hundred kilograms contained in uranium compounds enriched from 5.00 wt% to a maximum of 9.99 wt% in the U-235 isotope (see Section 1.6.2 for restrictions). 4. Twenty thousand kilograms contained in uranium compounds in any form enriched to a maximum of 5 wt% in the U-235 isotope.		
1.4.2 <u>Plutonium (<500 grams)</u>		
1. One milligram and not more than 1.5 millicuries as contained in sealed sources and standards. 2. Less than 500 grams as PuO₂ or PuO₂-UO₂ as stored waste.		
1.5 <u>Authorized Activities</u>		
Specific locations of authorized activities involving special nuclear materials are identified in Table I-1.1.		
1.6 <u>Exemptions and Special Authorizations</u>		
1.6.1 <u>Criticality Accident Alarm System Exemption</u>		
Pursuant to 10 CFR 70.24(d), Advanced Nuclear Fuels has previously requested exemption in part from the requirements of 10 CFR 70.24(a), and has been duly authorized to use the criticality accident alarm system described below in its facilities. In addition, the waste storage lagoons have been exempted from coverage by the criticality accident alarm system. The criticality accident alarm system used in the Advanced Nuclear Fuels facilities employs neutron criticality detectors (NCDs), which are operated in two-out-of-n (where n = 3 to 6 per comparator panel) coincidence to minimize the possibility of spurious trips due to NCD malfunction or response to radiation other than neutrons characteristic of a criticality accident.		
AMENDMENT APPLICATION DATE:		PAGE NO:
April 1, 1989		1-2

PART I - LICENSE CONDITIONS

REV.
18

The Advanced Nuclear Fuels criticality accident alarm system consists of NCDs, comparator units, associated control panels, an annunciator panel, and howlers. Each comparator unit is capable of monitoring the failure and trip signals of up to six NCDs.

Each NCD consists of a BF₃ tube (externally moderated) with associated pulse amplifiers, trip circuits, performance audit circuits, and associated power supplies.

Failure audit circuits check the operation of each BF₃ tube, pulse amplifier, multivibrator, and low and high voltage supplies by requiring a minimum background count rate of 100 counts per minute. This background count rate is provided by an internal radiation source in each BF₃ tube. If the minimum background is not detected by the audit circuit, a failure (indicating malfunction) is signaled. Such failure signals do not interfere with operation of the criticality accident alarm system.

Because the trip circuitry is not audited, redundant trip circuits are provided in each NCD. Failure and trip signals from all NCDs are fed to comparator units. Redundant trip detection is provided in the comparator units. The comparator panels display all failure and trip signals. When two or more NCDs connected to the same comparator unit are tripped, the criticality accident alarm (howlers) is activated.

An annunciator unit monitors the status of the comparator units, and an audible alarm is actuated in the Central Guard Station in the event that the annunciator unit detects either a failure or trip signal.

The minimum detectable criticality burst width for the Advanced Nuclear Fuels criticality accident alarm system is 50 microseconds.

An overall system reliability test is conducted quarterly.

The trip point of each NCD is set to trip within 1-5 seconds at 80 mrem/hr (fast neutrons).

The neutron dose rate delivered through 12 inches of concrete to an NCD at 300 feet as a result of a minimum burst of 10^{14} fissions (taken as the minimum criticality accident which must be detectable) has been calculated to be approximately 350 mrem/hr.

Except for the waste lagoons which have been exempted from coverage by the criticality accident alarm system all special nuclear material at the Advanced Nuclear Fuels plant shall be located such that a

AMENDMENT APPLICATION DATE

April 1, 1989

PAGE NO.

1-3

PART I - LICENSE CONDITIONS

REV.
18

criticality accident of 10^{14} fissions occurring in the material would produce a minimum of 350 mrem/hr at a set of three NCDs, considering distance and intervening shielding materials.

1.6.2 Special Processing of Uranium Enriched From 5 to 19.99 wt% U-235

Uranium compounds enriched in the U-235 isotope in excess of 5 wt%, but not exceeding 19.99 wt%, may be received, stored, processed and transferred.

All License Conditions described in this application shall apply to the handling, processing and storage of these materials. However, in addition, the Special Conditions described below shall also apply.

1.6.2.1 Receipt and Storage

These materials shall be received on-site and stored in containers distinctly different (e.g., size, color) from those routinely used for uranium enriched in the U-235 isotope to less than or equal to 5 wt%.

Containers of these materials, including scrap and contaminated solid wastes, shall be labeled identifying the enrichment and form, and shall be stored separate from (not commingled with) uranium enriched in the U-235 isotope to less than or equal to 5 wt%.

1.6.2.2 Processing

These materials shall be handled and processed on a safe batch (less than or equal to 45% of the minimum critical mass) basis, and each processing station shall be limited to an inventory of one safe batch, regardless of material form, unless it is demonstrated that:

1. Existing equipment and/or vessels to be used are shown to be adequately subcritical, for the special enrichment uranium to be processed, in accordance with criticality safety analysis methods described in the License Conditions; or
2. Existing equipment and/or vessels can be appropriately modified or replaced to conform to criticality limits, for the special enrichment uranium to be processed, established in accordance with criticality safety methods described in the License Conditions.

In all cases, appropriate labels shall be located with the material to identify it as special enrichment uranium. These materials shall be segregated from other fissile materials throughout the process.

AMENDMENT APPLICATION DATE:

April 1, 1989

PAGE NO.:

1-4

PART I - LICENSE CONDITIONS

**REV.
18**

A letter from the President of Siemens Capital Corporation, which gives specific assurance of the availability of the required funds, is appended to this chapter. (See Appendix A.) This letter is submitted in compliance with 10 CFR 70.25 requirement for financial assurance of decommissioning.

Uranium to be enriched in the U-235 isotope in excess of 5 wt%, but not exceeding 19.99 wt%, may be received, stored, processed and transferred.

All license conditions described in this application shall apply to the handling, storing, processing of these materials. However, the following conditions shall also apply.

1.4.2.1 Handling and Storage

These materials shall be received on-site and stored in containers distinctly different (e.g., size, color) from those routinely used for uranium enriched in the U-235 isotope to less than or equal to 5 wt%.

Containers for these materials, including scrap and components, shall be clearly labeled identifying the enrichment and shall be clearly marked with (not commingled with) uranium enriched in the U-235 isotope to less than or equal to 5 wt%.

1.4.2.2 Criticality

These materials shall not be handled and processed on-site in quantities greater than or equal to 48% of the minimum critical mass) basis, and each processing station shall be limited to an inventory of one safe batch of materials, unless it is demonstrated that:

1. This equipment can be used at a level of enrichment which is adequately subcritical for the special enrichment system to be processed, in accordance with criticality limits established in 10 CFR 70.25, and

2. Criticality control measures can be demonstrated which will be required to conform to criticality limits for the special enrichment system to be processed, established in accordance with the special enrichment methods described in 10 CFR 70.25.

These materials shall be received on-site and stored in containers distinctly different (e.g., size, color) from those routinely used for uranium enriched in the U-235 isotope to less than or equal to 5 wt%.

AMENDMENT APPLICATION DATE

April 1, 1989

PAGE NO.

7-7

PART I - LICENSE CONDITIONS

REV.
18CHAPTER 8 RADIOLOGICAL CONTINGENCY PLAN

Advanced Nuclear Fuels developed and published a radiological contingency plan as document ANF-32, Part I entitled, "Advanced Nuclear Fuels Corporation Richland Fuels Fabrication Plant Emergency Plan, Part I, The Plan." The latest revision to the plan was issued on January 31, 1989.

The licensee shall maintain implementing procedures for the plan. In addition, the licensee shall make no change in the plan, without the approval of the Commission, if the change would decrease the effectiveness of the plan. The licensee may make changes to the plan provided the changes do not decrease the effectiveness of the plan. In addition, the licensee shall provide a description of each change to the Chief, Fuel Cycle Safety Branch, within six months after each change is made.

AMENDMENT APPLICATION DATE:

April 1, 1989

PAGE NO.

8-1

Issue Date:

PART I - LICENSE CONDITIONS

REV.
18

CHAPTER 3 RADIOLOGICAL CONTINGENCY PLAN

APPLICATION FOR RENEWAL

OF

SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-1227

(NRC DOCKET NO. 70-1257)

The licensee has developed and published a radiological contingency plan for document No. 100-1000, "Advanced Nuclear Fuel Corporation Emergency Plan, Part I, The Plan". The latest revision to the plan was issued on January 1, 1968.

The licensee shall maintain implementing procedures for the plan. In addition, the licensee shall make changes in the plan, without the prior approval of the Commission, if a change would decrease the effectiveness of the plan.

DISTRIBUTION

L.A. Bisping
H.L. Caudill
D.L. Condotta
E.L. Foster
R.G. Frain
C.J. Francis
J.W. Fredericks
L.D. Gerrald
J.L. Glesener
D.C. Lehfeldt
C.W. Malody
R.W. McCullugh
G.V. Mulligan
J.E. Pieper
T.C. Probasco (3)
G.L. Ritter
I.J. Samaritano
L.J. Seigny
J.R. Singleton
W.E. Stavig
M.K. Valentine
N.A. Vaught
C.J. Volmer

USNRC (6)
DSHS (2)
Document Control (5)

DOCKET NO. 70-1257
CONTROL NO. 25404
DATE OF DOC. March 30, 1989
DATE RCVD. April 10, 1989
FCUF ☒ PDR ☒
FCAF _____ LPDR _____
I & E REF. ☒
SAFEGUARDS ☒
FCTC _____ OTHER _____
DATE 4/10/89 INITIAL MC



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FEB 08 1989

Handwritten signatures and initials:
- *Kantor*
- *Jos*
- *Long*

Docket Nos. 70-1113
70-1257

MEMORANDUM FOR: Robert M. Bernero, Director
Office of Nuclear Materials
Safety and Safeguards

FROM: Ronald M. Scroggins, Controller
Office of the Controller

SUBJECT: WAIVER OF FEE FOR MODIFYING LICENSED POSSESSION
LIMITS FOR TWO FUEL CYCLE LICENSEES

This is in response to C. N. (Mike) Smith's December 14, 1988 memorandum requesting a waiver of the fee for applications submitted by General Electric (GE) and Advanced Nuclear Fuels (ANF) for amendments to reduce their possession limits in response to NMSS's October 20, 1988 letter.

Since the need for licensing actions to reduce the possession limits is the result of an NRC oversight, and additional workload would be created for the NRC licensing and inspection staff if either licensee chose not to decrease the possession limits, the license amendment fees are waived for ANF's November 3, 1988 application to amend License SNM-1227, and GE's December 12, 1988 application to amend License SNM-1097.

Handwritten signature of Ronald M. Scroggins
Ronald M. Scroggins, Controller
Office of the Controller

cc: Robert F. Burnett, NMSS
C. N. (Mike) Smith, NMSS

8903130114 *lp.*