RETURN TO 396-SS

FJ-1257

SNM-1227

ADVANCED NUCLEAR FUELS CORPORATION

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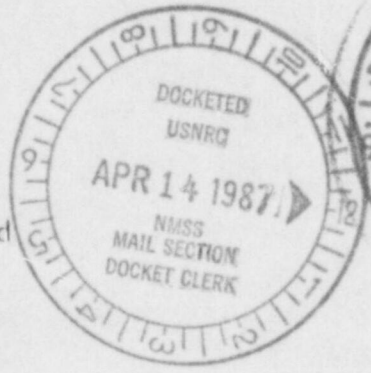
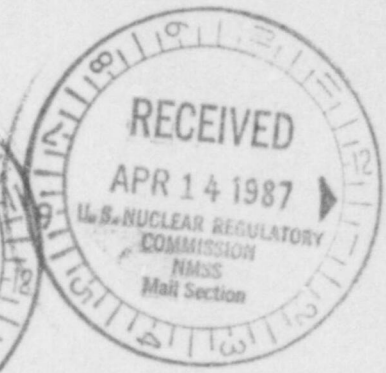
(509) 375-8100 TELEX: 15-2878

CORPORATE LICENSING

March 31, 1987





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

Dear Mr. Rouse:

This is in reply to W.T. Crow's letter dated March 2, 1987 concerning the prevention of the introduction of hydrocarbons into UF_6 cylinders and process systems.

An assessment of the controls which prevent the introduction of hydrocarbons into UF_6 cylinders or processing equipment at our Richland facility has been completed and the controls found adequate. A summary assessment is outlined below for your review.

Advanced Nuclear Fuels Corporation uses 30B cylinders for the transport of UF_6. Any cylinders purchased in the future will be manufactured according to ANSI N14.1. That standard, among other things, requires a thorough cleaning of the finished cylinder including the manufacturers certification to that effect. Flushing and cleaning procedures prior to maintenance, inspection and testing specifically exclude the introduction of hydrocarbons and follow the recommendations in ANSI 14.1.

The design of the UF_6 process system for emptying cylinders specifically excludes hydrocarbons. For example, the vacuum pump used for heel draw-down is a diaphragm pump rather than an oil-filled pump. Any equipment or system modifications, other than replacement in kind, require authorization by an Equipment Change Notice (ECN). The ECN is signed by appropriate Licensing, Safety, Engineering and Operating personnel which will preclude inappropriate equipment pieces from being substituted.

Full cylinders are found sealed upon receipt and cylinders with heels are sealed prior to shipment.

The synopsis above covers the specific points in Mr. Crow's request. The controls described above are not all included in our license; therefore, appropriate amended pages are enclosed. We have recently submitted a license application for renewal which is under review. As part of the review process, we will submit revised pages for that application.

Applicant's ....
Check No. 02476
Amount Fee Category $150-1C
Type of Fee Amd
Date Check Rec'd 4/15/87
Received By ....

AN AFFILIATE OF KRAFTWERK UNION

RECEIVED
APR 15
NO.

28071

8705120232 870331
PDR ADOCK 07001257
C PDR

A check for $150 is enclosed as the amendment fee.

Sincerely,

C. W. Malody

C. W. Malody, Manager
Corporate Licensing

CWM:jrs

Enclosures
As Stated

ATTACHMENT Q

SAFETY FEATURES AND ACCIDENT ANALYSES

CONTENTS

3. Discussion

The reactions of hydrocarbons with UF_6, even in small quantities, can be vigorous to the point of serious explosions. Therefore, ANF has assessed its controls to prevent the introduction of hydrocarbons into cylinders or UF_6 systems and find them adequate. These various controls are outlined below.

The purchase specification of new 30B cylinders require conformance to ANSI N14.1 which includes certification by the vendor that cleanliness requirements specified therein have been met. Recertification and maintenance on cylinders is also performed within the requirements of ANSI N14.1. The procedures for cylinder heel removal and washing prior to maintenance or recertification specifically exclude the use of hydrocarbons. 14

The equipment used for processing UF_6 is designed to exclude the need for hydrocarbons (oil). For example, the vacuum pump used to reduce cylinder heels is a diaphragm vacuum pump rather than an oil filled pump. An Equipment Change Notice (ECN) must be authorized to modify equipment which requires review and approval in accordance with Figure 2.3-2 and would therefore protect against hydrocarbons being utilized in the future.

Application - License Conditions	REV.

f) The exterior surfaces of each package surveyed to be within the release limits specified in Section 3.1.4.3(B)(2) prior to being removed from the process building.

g) Radioactive material storage areas are not sprinklered.

h) The accumulation of combustible materials in building used for the storage of radioactive materials is maintained at a minimum. Solvents, oils, and flammable liquids are not allowed in such buildings unless they are separated from containers of uranium and uranium-contaminated materials by fire walls of at least one-hour rating.

All outside enriched uranium storage areas are identified, posted and controlled as Radioactive Materials Areas, and all such areas are established within the fenced exclusion area.

3.7.2.1 UF_6 Cylinders

New UF_6 cylinders purchased by ANF shall conform to ANSI N14.1 which includes certification by the vendor that the cylinders comply with all fabrication, test and cleanliness requirements specified therein. Periodic inspection and testing of cylinders is performed following heel removal. The heel removal procedures specifically exclude the use of hydrocarbons. 14

Cylinders of UF_6 are received, unloaded and stored on a barricaded pad. As needed for processing, cylinders of UF_6 are transferred to either an elevated dock or a barricaded pad adjacent to the UO_2 Building. UF_6 cylinders are stored bare in cradles providing

Application - License Conditions	REV.
spacing and stability. The cylinder valve seals which were installed by the shipper are left intact until the cylinder is moved into the plant for emptying.	14
Evacuated UF_6 cylinders (containing heels) are also stored in these locations.	
Elevated or barricaded storage of bare UF_6 cylinders is designed to guard the cylinders against vehicular damage.	
Prior to shipping bare cylinders containing heels, the valves are covered and sealed. When the cylinders are shipped in overpacks, the valves are not covered and sealed but the overpack is sealed.	14

procedures, each employee affected is promptly informed and properly instructed.

Safety topics are routinely discussed in monthly safety meetings. Additionally, each employee routinely working with special nuclear material receives annual refresher instruction as part of Advanced Nuclear Fuel's continuing program in radiation protection and criticality safety awareness.

3.10.2 Health Physics Technician Training

Health Physics Technicians are given special training related to their radiation protection assignment. Previous training is accepted if considered equivalent to the Advanced Nuclear Fuel training program. Despite previous acceptable training, the Health Physics Technicians are required to become proficient in Advanced Nuclear Fuel radiation protection and criticality safety programs, criteria, specifications, procedures, and routines, as demonstrated by successfully passing an Advanced Nuclear Fuels certification examination within six months after employment as a Health Physics Technician.

3.11 Process and Equipment Modifications

Operations involving radioactive and fissionable materials are conducted in accordance with written Radiation Work Procedures (Section 3.1.1.3) and Criticality Safety Specifications (Section 3.2.1.1). When process, equipment or storage modifications are to be made, a review of the radiation, criticality and industrial safety aspects are made. Such modifications are only made following authorization of an Equipment Change Notice (ECN) which requires | 14

approvals in accordance with Figure 2.3-2. The ECN system assures review of all modifications by appropriate engineering and safety personnel. Where modifications are substantial or significant safety issues are involved, a Startup Review Board may conduct a final review prior to equipment startup. 14

When process or equipment modifications are made, new or appropriately revised written procedures and specifications are issued for the modified operation.

When temporary or special operations, which are not covered by existing operating procedures and which can affect radiation and/or criticality safety, are needed and warranted, written Process Test Authorizations are issued. Process Test Authorizations are reviewed by the Radiological Safety Supervisor and the plant Criticality Safety Engineer of Safety and Security Operations, and by the Health Criticality Safety Components of Corporate Licensing. Process Test Authorizations involving special nuclear material specify special control limits and procedures under which the nonroutine work must be done, and specify the authorized duration of the test. Process Test Authorizations are approved in accordance with Figure 2.3-2.

DOCKET NO. 70-1257
CONTROL NO. 28071
DATE OF DOC. 03/31/87
DATE RCVD. 04/14/87
FCUF ✓ PDR ✓
FCAF ____ LPDR ____
I&E REF. ✓
SAFEGUARDS ✓
FCTC ____ OTHER ____
DATE 4/14/87 INITIAL CER