

In reply refer to:
RO:MPPB
70-36

APR 9 1973

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Gulf United Nuclear Fuels Corporation
ATTN: Mr. Peter Loysen, Manager
Regulatory Administration
Grasslands Road
Elmsford, New York 10523

Gentlemen:

This will acknowledge receipt of your letter dated March 12, 1973, informing us of the steps taken to correct those deficiencies in your material control program at the Hematite facility which were brought to your attention in our notice of February 9, 1973.

Your response to Items 1 and 4 of our notice with respect to UF_6 measurements and records does not specify the corrective action required in order to achieve full compliance with the safeguards conditions of your license and with the requirements of 10 CFR 70.54. Our letter of December 23, 1971, stipulated, in addition to the items listed in Items 1 and 3(b) of your response, that a downstream correlation measurement must be performed on UF_6 receipts, if the receiver accepts the shipper's assigned element and isotopic values. Since your proposed UF_6 accountability program does not comply with all of the above conditions, it is necessary that you obtain an amendment to your license. However, until such time as your application is approved by the Directorate of Licensing, Gulf United must comply with all existing AEC safeguards accountability requirements.

In addition, your response to Item A of the enclosure to our notice fails to specify the corrective action required to achieve full compliance with the physical protection requirements of 10 CFR 73. The special nuclear material located outside your gamma count area must be stored within a locked building as required by 10 CFR 73.32(b) or within a locked fenced enclosure as permitted by 10 CFR 73.32(c). Please inform this office by April 30, 1973, of the corrective action you have taken or planned with respect to the above matter.

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Gulf United Nuclear
Fuels Corporation

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The above matters, as well as the other corrective actions described in your March 12 letter, will be examined during the next safeguards inspection of your facilities. The results of the inspection and your response to this letter will provide the basis for determining what further enforcement action will be taken by this office.

Your cooperation with us is appreciated.

Sincerely,

F. E. Kruesi



Donald F. Knuth, Deputy Director
for Field Operations
Directorate of Regulatory Operations

bcc: M&PPB Reading, w/o incom
M&PPB File, w/incom
JGDavis, w/o incom
Docket No. 70-36, w/incom
PDR, w/incom
SHSmiley, L, w/incom
DKnuth, w/incom
RO-III; w/incom
JAHind, RO-III, w/incom
ELM File, w/o incom

cc: (added)

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New Haven, Connecticut 06508

Mr. G. O. Amy, Plant Manager
Chemical Operations
Route 21 A
Hematite, Missouri 63047

OFFICE ▶	M&PPB:RO	M&PPB:RO	RO	RO		
SURNAME ▶	ELMay:leg	VJB Amico	JGDavis	DKnuth	JEK	
DATE ▶	4/3/73	4/4/73	4/1/73	4/1/73	4/6/73	

GULF UNITED
NUCLEAR FUELS CORPORATION

GRASSLANDS ROAD
ELMSFORD, NEW YORK 10523
914-592-9000

March 12, 1973

In reply, refer to MRA-73-52

Mr. F. E. Kruesi
Director of Regulatory Operations
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: Region III Inspection - Nov. 29 - December 8, 1972
of Chemical Operations

Ref: RO:MPPB 70-36, 2/9/73

Dear Mr. Kruesi:

In response to your letter of February 9, 1973 concerning an inspection of safeguards control and in which you found that certain of our activities were not conducted in full compliance with license conditions and AEC regulations, we have the following comments.

A. Safeguards Amendment SG-4

1. Receipts Measurements on UF₆ (License Condition 3.1)

Dr. Thornton's letter of December 23, 1971 regarding independent measurements of UF₆ received directly from AEC-owned, contractor-operated facilities stated that compliance could be achieved alternatively as follows:

- a. Provide tamper-indicating devices and receipt of containers in an inviolate condition.
- b. Verify gross weights and limits of error upon receipt of containers.
- c. Witness the weighing and/or sampling of cylinders when they are loaded at the gaseous diffusion plant.

In every instance during the inspection review period, Gulf United or its agent did witness, sample and measure all new orders for UF₆.

The subject of accepting shipper's values and booking of independent measurements is discussed in the comments which follow on 10 CFR 70.54.

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2. Annual Review of Measurements System (License Condition 3.3)

An annual review of the measurements system and a quantitative calculation of the limit of error of the measurement system was not performed in 1972 due to a severe reduction in force. During this period of reduced plant activity, insufficient personnel resulted in the failure to continue calibration and validation of the measurement system. Since data was not available for a meaningful review, no review was conducted. A review of the measurements system will be made during the current period, as was the practice in past years when data were available.

3. Reconciliation of Plant Records to MBA Records (License Condition 7.1)

Reconciliation of Plant records to MBA records has been completed for the periods 12/2/72 through 12/31/72 and 1/1/73 through 1/31/73. Results of these reconciliations were reported in memos NMMH-73-5 and NMMH-73-20. Copies of these memos were forwarded to your Region III Office, Glen Ellyn, Illinois. Monthly reconciliations will continue to be made, using guidelines furnished by Region III personnel.

B. Special Nuclear Material (10 CFR 70)

1. Nuclear Material Transfer Reports (10 CFR 70.54)

a. Reporting Independent Receipt Measurements on Forms AEC-741

Receipt measurements will be reported on Forms AEC-741 beginning April 1, 1973.

During the inspection period, the facility received the following receipt documents:

<u>Type</u>	<u>No. of Documents</u>	<u>% of Documents</u>
Sample Residues	62	58
Scrap	18	17
UF ₆	27	25

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The UF₆ received represented only 25% of the documents received, but 93.5% of the U²³⁵ received. On all UF₆ documents, the independent gross weight check was reported on the AEC-741. All gross weight checks made by the facility during the inspection period were within the required 0.1% acceptance criterion established for the facility.

On all future documents for UF₆ receipts, Gulf United will accept the AEC tare, apply the AEC tare to the independent receiver's gross measurement, and calculate a receiver's net. The AEC percent U and percent U²³⁵ values will be applied to the receiver's net, and a calculated element and isotope quality will be determined. All these values together with the limit of error of element and isotope (as discussed in 4.c., below) will be recorded in the receiver's section of the AEC-741.

Sample residues returned to Hematite even though representing 58% of the documents received, constitute only 0.2% of the U²³⁵ received. Other than the gross weight check to verify that the shipper has returned the sample residues stated on the AEC-741, sample residues do not warrant an independent measurement of SNM received. The SNM responsibility for samples shipped to off-site laboratories for assay is never transferred to the respective laboratory, and any SNM consumed during assay is a penalty against the MUF of the shipper.

Scrap returned to the facility is always measured at a later date than received. Receiver's measurements are not transmitted to the shipper on the AEC-741, but by way of a notice of s/r difference. The shipper reissues the original AEC-741 to correct the s/r difference to the receiver's values. The receiver then acknowledges acceptance of the reissued (his measured) values. To clarify that the reissued document for scrap materials shows that the receiver's independent measured values are the ones being accepted, we will mark the corrected document "OWN ADJUSTMENT ACCEPTED" rather than "SHIPPER'S VALUE ACCEPTED."

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b. Booking of Independent Receiver's Measurements

The conduct of independent receiver's measurements and the booking of such measurements is complicated and frustrating. As noted above, in the case of scrap receipts, the final measured receiver's values are eventually booked when corrected AEC-741 copies are received from the shipper. In the case of samples, independent measurements are not warranted, and, therefore, shipper's values are booked.

In 4.a., a description was given of how the AEC-741 form will be completed to reflect measured and calculated receiver's values.

The receipt of UF₆, constituting 93.5% of the U²³⁵ received at the Hematite facility, has been booked at AEC values. This action properly completed the AEC-741 and permitted timely dispatch of the document. In the case of all UF₆ received (all from AEC-owned, contractor-operated facilities) during the inspection period, Hematite personnel (or our agent) witnessed, sampled and sealed the UF₆ withdrawn. Independent commercial laboratory overcheck was (or is in the process of assay) conducted for percent U and percent U²³⁵ content of the UF₆ which was withdrawn. Commercial labs, to our knowledge, have experienced difficulty in percent U assay of UF₆, and, in all cases, must convert the UF₆ sample to another chemical form prior to assay. These measurements have attendant wide limits of error. The AEC has by far the best facilities and expertise for the timely assay of UF₆. We choose to book the most accurate assay value on UF₆ that is obtainable, and our experience to date suggests that this is the AEC shipper's value. We, in no way suggest that we relinquish our responsibility of independent overcheck of UF₆, but we do feel that, since our experience on UF₆ received to date from AEC-owned, contractor-operated facilities has shown no significant differences in assay values, the AEC consider that the practice of booking AEC shipper's values be acceptable for Gulf United's booking purposes, if:

- (1) The receiver does witness, sample and seal the UF₆ procured.
- (2) The analytical overcheck values obtained by the receiver are not statistically significant from the AEC shipper's values.

Please advise me if a license amendment is required

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c. Limits of Error on Receipts Measurements

The Hematite facility received during the inspection period the following SNM:

<u>Type</u>	<u>Kgs. U235</u>	<u>% on U235 Basis</u>
UF ₆	1,038	93.5
Sample Residues	2	0.2
UAl Scrap	62	5.5
Pellet Scrap	9	0.8

The returned sample shipments did not exceed 350 grams U²³⁵ for any one shipment. The UAl scrap and the pellet scrap were all received with the following notation - "Shipper's values accepted pending further measurements." Once the scrap has been assayed and AEC-741 transfer documents reissued, limits of error will be stated on the receiver's measurements. Even though the Hematite facility does receive whole pellets as return shipments, these pellets are considered as scrap. The pellets are converted to oxide, assayed, and reused in future pellet manufacture. In summary, the only product material received at the Hematite facility is UF₆ (93.5% of receipts) and limits of error are now reported on all such receipts.

d. Forms AEC-741 Dispatch Time

Every effort has been made to dispatch shipment documents the day of shipment and receipt documents in the specified time, according to the type of receipt.

The major problem with document dispatch as already discussed in 4.a. and 4.b., above, has been the inability to obtain continuously reliable isotopic assay services from commercial laboratories consistent with scheduled shipping dates.

To alleviate part of the problem, we will utilize Forms AEC-284 to acknowledge receipt of scrap on a piece count basis only until measurements can be completed. Execution of an AEC-741 for the same shipment for which the AEC-284 was used on receipt will be made when receipt measurements are completed.

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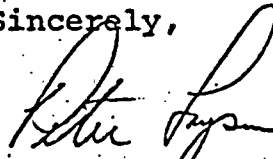
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In addition, effective April 1, 1973, no shipment will be made without measurement results and associated limits of error (where applicable) included on the AEC-741.

Comments on the enclosure to your letter are attached.

In the future, please direct any correspondence pertaining to inspections and related matters to my attention with a copy to the Plant Manager and the Vice President of Manufacturing. In this way, you may be assured of more prompt and appropriate action, as our management control system is designed to function accordingly.

Sincerely,



Peter Loysen, Manager
Regulatory Administration

PL:am
Attachment

GULF UNITED
NUCLEAR FUELS CORPORATION

Mr. F. E. Kruesi

Attachment

March 12, 1973
MRA-73-52

Physical Protection of SNM (10 CFR Part 73)

A. Physical Protection of SNM in Use or Storage (10 CFR 73.32.b.)

1. Outside Product Storage

Effective immediately, product uranium metal and UF₆ samples will be stored in the locked UF₆ building. These actions will result in wastes for off-site burial, scrap for off-site processing, and scrap for on-site processing, all in 55 gallon drums, as the only materials stored in the locked outside storage area.

2. Outside Gamma Count Area

The outside gamma count area is an area just outside the Hematite laboratory. This area is used for the collection, assay, and disposition of low grade residues. Low grade residues are assayed using a gamma scintillation system, then positioned for burial or storage, and then finally drummed for burial or storage.

Effective immediately, low grade residues (>20% U²³⁵) will only be stored in this area when the plant is continuously manned and the material is under surveillance (i.e., no storage of residues over weekends).

B. Testing and Maintenance of Intrusion Alarms (10 CFR 73.33)

Effective immediately after the inspection, the intrusion alarm on the emergency exit gate was tested and inspected at intervals of seven days or less. A record of the test and inspection is included as a part of the security guard patrol log.