



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

MAR 8 1979

PDR

SGML:GEG
70-820

United Nuclear Corporation
Fuel Recovery Operation
ATTN: Mr. C. E. Bowers
General Manager
Wood River Junction, Rhode Island
02893

Gentlemen:

We have reviewed and accepted the revised measurement control plan submitted with your May 1978 (undated) letter and the revisions submitted with your letters dated June 28 and December 31, 1978, all of which were submitted pursuant to 10 CFR 70.57(c) and to our request dated November 17, 1977.

In order to ensure complete compliance with the requirements of 10 CFR 70.57, we have found it necessary to require that your material control and accounting program be strengthened in certain respects. Accordingly, the new conditions listed in Enclosure I to this letter are being added to your license. These new conditions were discussed with Mr. Daigler of your staff on February 27, 1979 and consensual agreement concerning their acceptability and wording was reached. In order to consolidate these conditions and withdraw obsolete conditions, License Condition 2.1 and Section 4.0 of Amendment MPP-2 to Special Nuclear Material (SNM) License No. SNM-777 are hereby revised as set forth in Enclosure II to be implemented within thirty (30) days from the date of this letter.

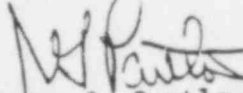
We have determined that your method of determining rounding errors is incorrect as presented in the example of Section 4.5.1.2.1 which is excluded from incorporation in the plan. The correct method of determining rounding errors is presented in TID-26298 "Statistical Methods in Nuclear Material Control."

We have established that your initial and revised Measurement Control Plans transmitted with your letters of May 1978 (undated), June 28 and December 29, 1978 contain information of a type specified in 10 CFR 2.790(d). Accordingly, pursuant to Section 2.790(d)(1), such

622 089
7908180362

information is deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12.

Sincerely,



James G. Partlow, Chief
Material Control and Accountability
Licensing Branch
Division of Safeguards

Enclosures:

1. New License Conditions
2. Revised Amendment MPP-2

622 090

Enclosure I

New License Conditions For Materials And Plant Protection Amendment MPP-2 To License No. SNM-777

2.0 FACILITY OPERATION

- 2.1 The licensee shall follow the Fundamental Nuclear Material Control Plan dated November 1, 1976; as amended by the attachments to letters dated February 24, and June 23, 1977, June 28, and December 29, 1978, and as revised in accordance with the provisions of 10 CFR 70.32(c). The following sections to the June 23, 1977 revision are excluded from incorporation in this Condition: a) The last sentence of paragraph 5.4, and b) Paragraph 7.i.2 in its entirety. Also, the following sections to the December 29, 1978 revision are excluded from incorporation in this condition: a) The paragraph in Exhibit 4.2.1.1, and b) The second paragraph of 4.5.1.2.1.

4.0 MEASUREMENT CONTROL

- 4.1 Notwithstanding the requirement of 10 CFR 70.57(b)(4) to determine systematic sampling errors and perform engineering tests to establish or verify the applicability of existing mixing and sampling procedures, the licensee shall follow Section 4.3 of the Plan identified in License Condition 2.1.
- 4.2 Notwithstanding the requirement of 10 CFR 70.57(b)(8) to run standards and replicates for volume systems, to perform replicate sampling and replicate analysis for environmental releases, to perform replicate isotopic analysis, to generate bulk and random errors from process materials, and to require separate random errors for sampling and analytical on all sampling systems, the licensee shall follow Sections 4.2.2 and 4.4.1 of the Plan identified in License Condition 2.1.
- 4.3 Notwithstanding the requirements of 10 CFR 70.57(b)(10) to perform bias calculations and corrections and determine limits for systematic errors, the licensee shall follow Section 4.2.4.2 in the Plan identified in License Condition 2.1.
- 4.4 Notwithstanding the requirements of 10 CFR 70.57(b)(8) to use reference standards for control and calibration purposes, the licensee may use multi-channel gamma analyzer standards identified in Exhibit 4.2.1.1 of the Plan identified in License Condition 2.1 for materials which cannot be dissolved and measured by destructive analytical techniques provided that not more than 25 grams of U-235 are measured using this system per physical inventory period.

622 091

- 4.5 In lieu of the requirement in 10 CFR 70.57(b)(11) to establish control chart limits at the 0.001 level of significance, the licensee shall follow Section 4.5.1.3 of the Plan identified in License Condition 2.1.
- 4.6 All instruments used for measurement control or for accounting purposes shall be calibrated over the range of operation.
- 4.7 Notwithstanding the requirements of 10 CFR 70.57(b)(11) to establish control limits at the 0.05 level of significance, the licensee may establish the control limit for scales and balances at a value which is equal to the readability of the device.
- 4.8 Notwithstanding Sections 4.5.1.2 and 4.5.1.2.1 of the Plan identified in Condition 2.1, the licensee shall establish both \bar{X} -Bar and R charts to monitor special nuclear material control measurements, except as specified below. The licensee may use only \bar{X} -Bar charts:
 - a. For those measurement devices controlled pursuant to Condition 4.7, and
 - b. For those measurement devices controlled with a trend analysis designed to detect changes in measurement variability. These trend analyses shall be conducted every two weeks.
- 4.9 Except as specified in Condition 4.4, the licensee shall assure that all measurements, including those performed to establish correction factors applied due to (1) nonrepresentativeness between reference standards and process materials, and (2) variability in measurement conditions, are traceable to national standards or nationally accepted measurement systems.

622 092

Enclosure II

Revision of Sections 1.0 Through 3.0 In Their Entirety To Materials and Plant Protection Amendment MPP-2 To License No. SNM-777

Effective April 7, 1979

- 1.0 FACILITY ORGANIZATION: Currently there are no license conditions in this Section. The necessary information has been incorporated into an approved plan.
- 2.0 FACILITY OPERATION
- 2.1 The licensee shall follow the Fundamental Nuclear Material Control Plan dated November 1, 1976; as amended by the attachment to letters dated February 24, and June 23, 1977, June 28, and December 29, 1978, and as revised in accordance with the provisions of 10 CFR 70.32(c). The following sections to the June 23, 1977 revision are excluded from incorporation in this Condition: a) The last sentence of paragraph 5.4, and b) Paragraph 7.1.2 in its entirety. Also, the following sections to the December 29, 1978 revision are excluded from incorporation in this condition: a) The paragraph in Exhibit 4.2.1.1, and b) The second paragraph of 4.5.1.2.1.
- 2.2 No statement in the licensee's Plan identified in Condition 2.1 shall relieve the licensee of a requirement of 10 CFR Part 70 unless granted in a specific exemption or exception set forth as a condition of this license.
- 2.3 Operations involving special nuclear material which are not described in the Plan identified in Condition 2.1 shall not be initiated until an appropriate safeguards plan has been approved by the Nuclear Regulatory Commission.
- 2.4 All SNM not in transit shall be physically within an MBA or an ICA.
- 2.5 The custody of all special nuclear material within each MBA and ICA shall be the responsibility of a single designated individual. Each MBA shall have a different custodian and no individual shall be the custodian of a MBA and an ICA.
- 3.0 MEASUREMENTS
- 3.1 The licensee or his designated agent shall measure, except as specified in 10 CFR 70.58(e) and Condition 3.2, the uranium and U-235 content of all special nuclear material receipts, shipments, waste discards, internal transfers from MBAs and material inventoried.

622 093

- 3.2 Notwithstanding the requirements of Condition 3.1, the licensee may receive, store, and ship retainer samples from NRC licensed facilities provided;
- 3.2.1 The shipping container shall be sealed by the shipper with an NRC approved tamper-indicating device.
- 3.2.2 The shipper shall provide a listing of the contents of each shipping container. The listing shall be in sufficient detail to uniquely identify each item contained and its uranium and U-235 content.
- 3.2.3 Shipping containers with violated tamper-indicating devices shall immediately be inventoried by two authorized individuals. The container shall be resealed using approved tamper-indicating devices. The inventory shall be reconciled to the listing identified in Condition 3.2.2. The Manager, Quality Assurance shall document an investigation of the incident including how the tamper-indicating device was violated and the results of the inventory. This report shall be retained for the longer of;
- a. five years,
 - b. the material is possessed, or
 - c. the receiver acknowledges receipt of the material on Form NRC-741.
- 3.2.4 The shipping containers shall be stored in the ICA-1 warehouse.
- 3.2.5 The sealed shipping containers shall be returned to the original shipper or the contents thereof shall be processed by the licensee using procedures of the Fundamental Nuclear Material Control Plan identified in Condition 2.1.
- 4.0 MEASUREMENT CONTROL
- 4.1 Notwithstanding the requirement of 10 CFR 70.57(b)(4) to determine systematic sampling errors and perform engineering tests to establish or verify the applicability of existing mixing and sampling procedures, the licensee shall follow Section 4.3 of the Plan identified in License Condition 2.1.

622 094

- 4.2. Notwithstanding the requirement of 10 CFR 70.57(b)(8) to run standards and replicates for volume systems, to perform replicate sampling and replicate analysis for environmental releases, to perform replicate isotopic analysis, to generate bulk and random errors from process materials, and to require separate random errors for sampling and analytical on all sampling systems, the licensee shall follow Sections 4.2.2 and 4.4.1 of the Plan identified in License Condition 2.1.
- 4.3. Notwithstanding the requirements of 10 CFR 70.57(b)(10) to perform bias calculations and corrections and determine limits for systematic errors, the licensee shall follow Section 4.2.4.2 in the Plan identified in License Condition 2.1.
- 4.4. Notwithstanding the requirements of 10 CFR 70.57(b)(8) to use reference standards for control and calibration purposes, the licensee may use multi-channel gamma analyzer standards identified in Exhibit 4.2.1.1 of the Plan identified in License Condition 2.1 for materials which cannot be dissolved and measured by destructive analytical techniques provided that not more than 25 grams of U-235 are measured using this system per physical inventory period.
- 4.5. In lieu of the requirement in 10 CFR 70.57(b)(11) to establish control chart limits at the 0.001 level of significance, the licensee shall follow Section 4.5.1.3 of the Plan identified in License Condition 2.1.
- 4.6. All instruments used for measurement control or for accounting purposes shall be calibrated over the range of operation.
- 4.7. Notwithstanding the requirements of 10 CFR 70.57(b)(11) to establish control limits at the 0.05 level of significance, the licensee may establish the control limit for scales and balances at a value which is equal to the readability of the device.
- 4.8. Notwithstanding Sections 4.5.1.2 and 4.5.1.2.1 of the Plan identified in Condition 2.1, the licensee shall establish both X-Bar and R charts to monitor special nuclear material control measurements, except as specified below. The licensee may use only X-Bar charts:
- a. For those measurement devices controlled pursuant to Condition 4.7, and
 - b. For those measurement devices controlled with a trend analysis designed to detect changes in measurement variability. These trend analyses shall be conducted every two weeks.

622 095

4.9 Except as specified in Condition 4.4, the licensee shall assure that all measurements, including those performed to establish correction factors applied due to (1) nonrepresentativeness between reference standards and process materials, and (2) variability in measurement conditions, are traceable to national standards or nationally accepted measurement systems.

5.0 INVENTORY

5.1 All special nuclear material shall be measured at the time of physical inventory except those items, including unopened scrap receipts, previously measured whose integrity has been maintained by acceptable tamper-safing devices, and those items excepted by Condition 3.1. Each such item shall be checked for verification of its physical presence in its assigned location and for the identity and integrity of the tamper-indicating seals.

6.0 RECORDS AND REPORTS

6.1 The licensee shall use his or his designated agent's measured values for SNM accounting, except as provided in Condition 3.1.

6.2 The licensee shall report on a monthly basis all intentional discards and material unaccounted for. The MUF shall be that which has been determined during the month as a result of completing a material balance around a single operation, a number of operations, or the entire plant. This report shall be made within fifteen (15) days after the end of the month in which the discard was made or the material unaccounted for was determined. Reports shall be sent to the Regional Office of the Nuclear Regulatory Commission.

6.3 All accounting records, including measurement source data documents and internal transfer records shall be included in the accounting records retained for five years.

7.0 INTERNAL CONTROL

7.1 The same individual shall not sign a document as both the Shipper and the Receiver.

7.2 Accurate records shall be established and maintained which provide on a daily basis knowledge of the identity, location, and quantity of all SNM within each plant in discrete items and containers.

622 096

- 7.3 All shipper-receiver differences shall be brought to the attention of the Manager, Quality Assurance who shall review and evaluate shipper-receiver differences on an individual container or lot basis, as appropriate, on a shipment basis, and on a cumulative basis for shipments of like type material; take investigative and corrective action to reconcile shipper-receiver differences that are statistically significant at the 95 percent confidence level except those shipments which involve differences of 50 grams or less of U-235; and maintain records of shipper-receiver difference evaluation, investigations, and corrective actions on file at the plant for a period of five years.
- 7.4 Tamper-safing records shall be maintained which show the issuance date and time, disposal date and time, seal number and type, item number, and names of persons who apply and destroy the seals.
- 7.5 The licensee shall monitor the integrity of the shippers' tamper-safing devices on all items received, and verify, by weighing, the contents of all containers received with compromised or missing seals within 24 hours of receipt.
- 7.6 Tamper-safing devices shall be stored in locked cabinets.
- 8.0 MANAGEMENT: Currently there are no license conditions in this section. The necessary information has been incorporated into an approved plan.

622 097