



SGMC:CWE
70-371

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

PDR

FEB 21 1979

United Nuclear Corporation
ATTN: Mr. W. F. Kirk, Manager
Nuclear and Industrial Safety
Department
67 Sandy Desert Road
Uncasville, Connecticut 06382

Gentlemen:

We have reviewed and accepted the revised Measurement Control Plan (MCP) submitted with your letter dated November 30, 1978 and the revision dated January 10, 1979 all of which were submitted pursuant to 10 CFR 70.57(c) and our request dated November 17, 1977.

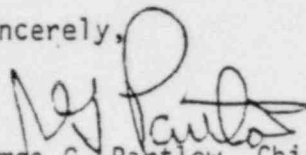
In order to ensure complete compliance with the requirements of 10 CFR 70.57, we have found it necessary to require that your material control and accounting program be strengthened in certain respects. Accordingly, the new conditions listed in Enclosure 1 to this letter are being added to your license. These new conditions were discussed with Messrs. Collopy and Gutman of your staff on January 24, 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-1 to Special Nuclear Material (SNM) License No. SNM-368 are hereby revised as set forth in Enclosure 2 to be implemented within thirty (30) days from the date of this letter.

We have also determined that the degree of standards verification is not adequately addressed in Section 4.2.1.b.2 of your plan. In view of your present practice of employing shipper's values for material control and accounting, your evaluation should address the degree of verification necessary to minimize the effect of any undetected bias on your shipper/receiver comparison. Accordingly, we request that you submit, within two months of the date of this letter, an assessment of the potential magnitude of undetected bias resulting from the degree of verification that you currently perform on each reference standard. If, in the future, you are required to use your own measured values, the degree of standards verification will need to be reevaluated.

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We have determined that your initial and revised Measurement Control Plans of November 6, 1975 and the revisions of June 28, 1978; September 12 and November 30, 1978 and January 10, 1979 contain information of a type specified in 10 CFR 2.790(d). Accordingly, pursuant to Section 2.790(d)(1), such 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. Since the information contained in those documents is also classified, it will be handled accordingly.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J. Partlow', written over the typed name.

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

Enclosures:

1. New Conditions
2. Revised MPP-1

Enclosure 1

- 4.1 The licensee shall perform appropriate process and engineering tests to establish the validity of sampling whenever:
 - (a) a change in process parameter affects the physical properties of the material, and
 - (b) the sampling technique or the sampling equipment is changed.
- 4.2 The licensee shall assure that all measurements, including those performed to establish correction factors applied due to (1) non-representativeness between reference standards and process materials and (2) variability in measurement conditions, are traceable to national standards or nationally accepted measurement systems.
- 4.3 Notwithstanding the requirements of 10 CFR 70.57(b)(3) to perform reviews and audits of the measurement control programs of contractors who perform material control and accounting measurement services, the licensee is exempt from reviewing and auditing the measurement control program at the UNC Wood River Junction site.
- 4.4 Notwithstanding the requirements of 10 CFR 70.57(b)(8) to measure standards and replicates for volume systems, to not provide de minimis quantities for bias calculations, bias corrections and systematic errors, to determine separate random errors for sampling and analytical, to generate random errors for bulk and NDA from replicate measurements of process materials, to perform replicate isotopic analyses and to perform replicate sampling and replicate analyses of liquid and stack discards, the licensee shall follow Sections 4.2.2, 4.2.4, and 4.4 of the Plan identified in License Condition 2.1.
- 4.5 Notwithstanding the requirements of 10 CFR 70.57(b)(4) to determine systematic sampling error and to conduct engineering tests on all material types, the licensee shall follow Section 4.3 of the Plan identified in License Condition 2.1.
- 4.6 Notwithstanding the requirements of 10 CFR 70.57(b)(11) to use Control Charts to monitor the quality of each program measurement, for control of scales and balances, the licensee shall follow Section 4.5.1.1 of the Plan identified in License Condition 2.1.

Enclosure 2

Revision of Sections 1.0 Through 8.0 In Their Entirety To Materials and Plant Protection Amendment MPP-1 To License No. SNM-368

Effective March 21, 1979

1.0 FACILITY ORGANIZATION

- 1.1 The Nuclear Materials Manager shall have the responsibility for the overall planning, coordination, and administration of the material control functions for special nuclear material (SNM).

2.0 FACILITY OPERATION

- 2.1 The licensee shall follow the fundamental nuclear material control plan dated January 24, 1975, as amended July 14, 1975, March 5, 1976, and November 30, 1978 and as revised January 10, 1979 and in accordance with the provisions of 10 CFR 70.32(c).
- 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.
- 2.6 The entire Montville facility is designated as a plant for material control and accounting purposes.

3.0 MEASUREMENTS

- 3.1 The licensee or his designated agent shall measure, except as specified in 10 CFR 70.58(e), the uranium and U-235 content of all special nuclear material receipts, shipments, waste discards and material inventoried.
- 3.2 All internal transfers of uranium from MBAs shall be based on measurements for element and isotope, except as specified in Condition 3.1.

4.0 MEASUREMENT CONTROL

- 4.1 The licensee shall perform appropriate process and engineering tests to establish the validity of sampling whenever:
- (a) a change in process parameter affects the physical properties of the material, and
 - (b) the sampling technique or the sampling equipment is changed.
- 4.2 The licensee shall assure that all measurements, including those performed to establish correction factors applied due to (1) non-representativeness between reference standards and process materials and (2) variability in measurement conditions, are traceable to national standards or nationally accepted measurement systems.
- 4.3 Notwithstanding the requirements of 10 CFR 70.57(b)(3) to perform reviews and audits of the measurement control programs of contractors who perform material control and accounting measurement services, the licensee is exempt from reviewing and auditing the measurement control program at the UNC Wood River Junction site.
- 4.4 Notwithstanding the requirements of 10 CFR 70.57(b)(8) to measure standards and replicates for volume systems, to not provide de minimis quantities for bias calculations, bias corrections and systematic errors, to determine separate random errors for sampling and analytical, to generate random errors for bulk and NDA from replicate measurements of process materials, to perform replicate isotopic analyses and to perform replicate sampling and replicate analyses of liquid and stack discards, the licensee shall follow Sections 4.2.2, 4.2.4, and 4.4 of the Plan identified in License Condition 2.1.
- 4.5 Notwithstanding the requirements of 10 CFR 70.57(b)(4) to determine systematic sampling error and to conduct engineering tests on all material types, the licensee shall follow Section 4.3 of the Plan identified in License Condition 2.1.
- 4.6 Notwithstanding the requirements of 10 CFR 70.57(b)(11) to use Control Charts to monitor the quality of each program measurement, for control of scales and balances, the licensee shall follow Section 4.5.1.1 of the Plan identified in License Condition 2.1.
- 4.7 All identifiable covariance affects shall be taken into account in the calculation of LEID.
- #### 5.0 INVENTORY
- 5.1 The licensee shall follow the material control and accounting plan entitled, "Accounting and Control Plan, UNC-Montville" dated March 6, 1974 and revised May 2, 1974 with the exception of paragraphs 1.2, 4.0, 5.11a, 6.1, 6.3, 6.4, Figures 5 and 6, Exhibit C, and further revised by your letters of May 19, 1975 and Item 2 of your letter dated October 29, 1975.

- 5.2 No statement in the licensee's material control and accounting plan 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.
- 5.3 The Nuclear Materials Manager or his designated representative shall verify the completeness of each physical inventory.
- 5.4 Each plant MUF and LEMUF determination shall be verified by any individual not involved in the original calculations.
- 5.5 In lieu of the requirement of 10 CFR 70.51(e)(3)(i) for scheduling physical inventories of special nuclear material, as it applies to calendar year 1976, the licensee shall conduct physical inventories in accordance with the schedule specified in the letter dated January 12, 1976.
- 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 Conditions 3.1 and 6.4.
- 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 Region Office of the Nuclear Regulatory Commission.
- 6.3 In lieu of the requirement in 10 CFR 70.54 that the Form NRC-741 be completed and distributed within 10 days after receipt of nuclear material, the licensee may use a Form NRC-284 to acknowledge receipt where measurements cannot be completed in the time specified. Receipt measurements shall be completed and reported on the Form NRC-741 within 30 days after receipt of material.
- 6.4 Shippers' values may be posted in the accounting records provided:
- 6.4.1 Shippers' limit of error values on grams uranium and uranium-235 are less than 0.5% for each material type in each shipment.
- 6.4.2 Independent receiver measurements shall be made for the total element and isotope content with limit of error values less than 0.5% for each material type in each shipment.
- 6.4.3 Shipper-receiver differences are not statistically significant at the 95% confidence level for each shipment.

- 6.4 4 Shippers' values are posted as a standard procedure subject to Conditions 6.4.1, 6.4.2 and 6.4.3.
- 6.5 If the licensee posts shippers' values in his accounting record pursuant to Condition 6.4, the following procedures shall be followed in completing the Form NRC-741:
 - 6.5.1 The results of the receiver's measurements made pursuant to Condition 6.4.2 shall be recorded on Form NRC-741 in accordance with Condition 5.3.
 - 6.5.2 The licensee shall clearly certify on Form NRC-741 that shippers' values are accepted on the basis of independent measurement verification.
- 6.6 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.
 - 7.3 Upon receipt of a quantity of SNM for shipment, the shipping clerks shall check the item and tamper-safing tag information, and the tag quantities against the information on the transfer documents and shall attest to the completeness and to the consistency of the information.
- 8.0 MANAGEMENT
 - 8.1 Any apparent loss of a discrete item or container of special nuclear material which cannot be resolved by an immediate investigation shall be reported to the Nuclear Materials Manager, who shall promptly notify the Region Office of the Nuclear Regulatory Commission, and shall conduct an investigation of the loss. The Nuclear Materials Manager shall document the results of his investigation and maintain the record for five years.