OCT 12 1964

Mr. John Lindberg
Vice President
United Nuclear Corporation
Fuels Division
P. O. Box 1883
New Haven 4, Connecticut

Dear Mr. Lindberg:

I am enclosing a letter from Mr. Eber H. Price, Director, Division of State and Licensee Relations, dated October 12, 1964, dealing with certain items of noncompliance and other matters relating to safety of operation of your Wood River Junction Scrap Recovery Plant, and a letter from Mr. Donald A. Nussbaumer, Chief, Source and Special Nuclear Materials Branch, Division of Materials Licensing, dated October 12, 1964, relating to your request for an amendment to your license applicable to that plant.

Some items in the enclosed letters have been discussed in your report of August 24, 1964, in your application for amendment, dated September 15, 1964, or in discussions between UNC and Regulatory staff members. Where appropriate, you may wish to refer to either of the documents previously submitted.

We understand that you will need to perform certain interim test operations which are a prerequisite to resumption of normal production operation, and that you will send us your plan for these test operations in a few days for our approval. We expect to be able to act on this matter without delay.

However, before acting on your request for approval to resume normal production operations, your reply to the enclosed letters will be required.

Sincerely yours,

(signed) Harold L. Price

Harold L. Price
Director of Regulation

C-53

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

IN REPLY REFER TO:
SLR:GWK
70-320

OCT 12 1964

United Nuclear Corporation
Fuels Division
New Haven, Connecticut

Attention: Mr. John Lindberg
Vice President

Gentlemen:

As a result of our investigation of the criticality incident which occurred in the United Nuclear scrap recovery facility at Wood River Junction, Rhode Island on July 24, 1964, and of our investigation of conditions existing in that plant prior to the criticality incident, it appears that certain of your activities were not conducted in full compliance with conditions of your AEC Special Nuclear Material License No. SNM-777 and the requirements of the AEC's "Standards for Protection Against Radiation," Part 20, Title 10, Code of Federal Regulations, in that:

1. Contrary to License Condition No. 8, trichloroethane (TCE) wash solutions containing uranium were introduced into Tank No. 1-D-11. Page 55 of your "Nuclear Safety Calculations and Reference Sheets" stated that this tank would contain no uranium.

2. Contrary to License Condition No. 8, TCE wash solutions containing uranium were processed without approved operating procedures covering those operations. Section 207.2 of your "General Information and Procedures Applicable to the Handling of Special Nuclear Material," states that changes in operating procedures shall be described in writing, subject to approval by the Supervisor, Nuclear Safety, before such changes are made.

3. Contrary to License Conditions No. 14 and No. 8, TCE wash solutions containing uranium were processed in a manner not authorized by the license. Section

3. continued

207.2.1 of your "General Information and Procedures Applicable to the Handling of Special Nuclear Material," states that each process in which enriched uranium is handled must be approved by the AEC.

4. Contrary to License Condition No. 8, plant audits were not made by the Nuclear Safety Supervisor on a continuing basis as specified in Section 207.2.2 of your "General Information and Procedures Applicable to the Handling of Special Nuclear Material."

5. Contrary to License Condition No. 8, the procedures described in Section VII of your "Emergency Control Plan," were not followed when re-entering the facility following the criticality incident on July 24, 1964.

6. Surveys were inadequate to fully evaluate the hazards associated with re-entry to the facility following the criticality incident, contrary to 10 CFR 20.201, "Surveys."

7. Two employees who entered the facility following the criticality incident did not wear personnel monitoring equipment as required by 10 CFR 20.202(a), "Personnel monitoring.

8. Surveys were inadequate to determine compliance with 10 CFR 20.106(b) with respect to the concentrations of airborne radioactive materials released to unrestricted areas during the period April through July, 1964, contrary to 10 CFR 20.201(b), "Surveys."

9. A report, showing (a) the results of airborne radioactivity surveys and concentrations of radioactivity in the liquid waste effluent from

9. continued

the lagoon and (b) a proposed future survey program, was not submitted to the AEC within ninety (90) days after start-up of the plant as required by License Condition No. 13.

10. Contrary to License Condition No. 8, (a) the nuclear alarm system had not been activated weekly with a gamma source; (b) the nuclear alarm system had not been calibrated at three-month intervals; and (c) the emergency beta-gamma meters and other survey meters had not been calibrated at three-month intervals. These requirements are specified in Section XIV of your "Health Physics Manual."

11. TCE solutions contaminated with special nuclear material were disposed of by dumping onto the ground at the rear of the plant, contrary to 10 CFR 20.301, "General requirements," for waste disposal."

12. Contrary to License Condition No. 8, the roof of the facility was not decontaminated to the extent specified in Section VIII.A of your "Health Physics Manual," following the spill which occurred on July 20, 1964.

13. The process area and the storage area for incoming shipments of raw "pickle liquor" were not posted as required by 10 CFR 20.203(e)(1), "Caution signs, labels, and signals."

14. The radiation area existing in the storage area of the process room was not posted as required by 10 CFR 20.203(b), "Caution signs, labels, and signals." We note that this had been corrected as of September 2, 1964.

This notice is sent to you pursuant to the provisions of Section 2.201 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a

written statement or explanation in reply including (1) corrective steps which have been taken by you, and the results achieved; (2) corrective steps which will be taken; and (3) the date when full compliance will be achieved.

In addition to the matters mentioned above, we believe that the following items have affected operational safety. We ask that you consider them carefully and give us your views thereon in writing.

A. The controls over the identification and movement of special nuclear materials within the plant appear to have not always functioned properly, in that:

(i) Supervisors have not routinely checked to assure that operators follow established procedures;

(ii) containers of special nuclear materials have not in all cases been tagged or correctly identified; and

(iii) some of the containers of special nuclear materials have been identified by tags attached by rubber bands only. The tags appeared capable of being easily knocked off, thereby rendering the contents difficult to identify without recourse to resampling and analysis.

B. The equipment available in the emergency shed appeared inadequate to cope with an emergency situation requiring an immediate entry of employees into the plant, in that:

(i) There was no radiation survey instrument available for evaluating the high levels of radiation associated with a criticality incident;

(ii) personnel monitoring equipment and self-contained breathing apparatus were not available for use when re-entering; and

(iii) except for indium foil, there was no monitoring equipment available for determining neutron doses or the presence of neutrons.

C. Results of analyses of smears, airborne samples, and liquid effluent samples were not available to the plant for initiating necessary corrective actions until several days after the samples were collected.

D. The calciner was operated on June 22, 1964 when the scrubber on the exhaust of the calciner chamber was not functioning properly.

E. It was noted on September 2, 1964 that uranium solutions were leaking directly on to the floor from some columns and vessels. Safe geometry drip pans were not being utilized in all cases and the floor was being contaminated.

Very truly yours,

Eber R. Price
Director
Division of State and
Licensee Relations