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UNC UNITED NUCLEAR CORPORATION
FUEL RECOVERY OPERATION/WOOD RIVER JUNCTION, R. I. 02894

TELEPHONE 401-364-7701

December 20, 1978
CEB 78-252

U. S. Nuclear Regulatory Commission
Mr. John B. Martin, Assistant Director
Fuel Cycle Safety and Licensing
7915 Eastern Avenue
Silver Spring, Maryland 20910

Gentlemen:

Subject: UNC Fuel Recovery Operation Waste Management Program

Reference: NRC-FRO Meeting, Silver Spring, 12-14-78

As you know, FRO has been actively engaged for over two years in a program to improve the handling of processed uranium wastes. Our program has had two objectives: the short-term orderly disposition of existing process lagoons and the long-term minimization or elimination of process waste requiring special handling. In that program, we have had numerous contacts with NRC and Rhode Island State officials in an effort to keep all interested parties informed.

At the FRO-requested meeting on December 14, we discussed both short-term and long-term aspects with your Messrs. Crow, Shum, and Stevenson. We believe that the meeting was constructive and mutually beneficial, and appreciate the helpful and professional attention given us by your staff. We left the meeting with the impression that our plan for orderly disposition of existing lagoons over a three-year period was accepted as reasonable and proper, with due regard to accountability, safeguards, and environmental concerns.

Attached to this letter is a summary of the various activities which have been and are being directed toward a positive, orderly waste management program. We believe that the program meets all regulatory requirements and existing commitments to NRC. Further, we believe that the proposed resolution time-frame is responsive to genuine needs, potential risk, and sound business management principals; to compress the schedule significantly would negate the careful planning which has preceded current programming.

EXEMPT 11695

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At the December 14 meeting, we were advised that the following dates were appropriate and acceptable to NRC:

July 1979	- Submission of Waste Management Plan (Objective: Minimization of Process Effluent)
September 1979	- Start Lagoon Recovery
March 1982	- Complete Lagoon Recovery

Accordingly, we will proceed along this schedule until and unless it is mutually modified, assuming your approval. We will be happy to discuss it with you in detail at your convenience.

Very truly yours,
UNITED NUCLEAR CORPORATION

C. E. Bowers
General Manager
Fuel Recovery Operation

CEB:amc

Attachment

cc: J. A. Aseltine, UNC
K. A. Cunningham, UNC
Sheldon Meyers, NRC

WASTE MANAGEMENT PROGRAM REVIEW
Program Abstract

In general, FRO's approach has been to schedule orderly, safe disposition of process residues. Temporary, "holding" actions have been implemented, with full knowledge of NRC and Rhode Island officials, while programmatic details are solidified. Special efforts (including several information meetings initiated by FRO) were made to keep interested parties informed.

Discharge to the Pawcatuck River initially appeared to be a viable and fully acceptable option, and was pursued with NRC's encouragement. Concurrently, process studies were being made to minimize residue generation rates. Plans were made for the recovery of uranium from existing process lagoons, and corporate funding approval was formally given; such orderly recovery would reduce burial liability, improve uranium accountability, and improve process technology.

Subsequent establishment of impractical discharge limits by Rhode Island effectively terminated discharge plans and required immediate relief measures, thus interrupting the orderly planning process. Accordingly, an above-ground storage tank was erected, to provide controlled temporary storage. Simultaneously, planning for recovery and neutralization of the existing lagoons proceeded on schedule. Such processing will begin no later than September 1, 1979 and will be completed (for all five lagoons) no later than March, 1982.

Alternate liquid waste treatment programs are being evaluated, with an overall goal of "neutralization" of residues, to an innocuous level, prior to discharge from the plant. This objective has not been realized and cannot be firmly scheduled, but preliminary results and conclusions continue to be promising.

In the interim, it is submitted that FRO waste handling policies are sound, responsive to NRC and environmental concerns, and consistent with public health and safety needs.

WASTE MANAGEMENT PROGRAM REVIEW
Event Chronology
Fuel Recovery Operation

Date	Event
1964	First process lagoon (Lagoon "A") constructed; liquid discharge to Pawcatuck River initiated
1968	Discharge to Pawcatuck River terminated
1969	Second lagoon constructed (Lagoon "B")
1970	Lagoon "A" contents removed, buried in Kentucky burial site; lagoon reconstituted
1976	Waste Management Plan initiated; increased capacity alternatives studied; final disposition of existing lagoons charted; new "cascading" approach designed; process improvements (for residue elimination) scoped
1977	Solids transferred from Lagoon B to Lagoon A, and Lagoon B reconstituted with improved, double-thickness liners in a series of five cascading lagoons on original "B" site
November, 1977	Meeting held between NRC, Rhode Island, and FRO personnel to discuss UNC's planning for establishing an alternate liquid waste disposal program
November, 1977	Subsequently, NRC suggested that FRO investigate the possibility for discharge to the Pawcatuck River
January, 1978	Request for discharge permit accordingly submitted to Rhode Island and EPA
March, 1978	License amendment request submitted, covering 1. Details of new lagoon construction 2. Dilution and discharge of supernate to river 3. Reclamation of lagoon residues
April, 1978	Meeting, Rhode Island and FRO, to discuss permit application
April, 1978	Meeting, NRC and FRO, to discuss license amendment request

Date	Event
May, 1978	Modification to license amendment application submitted by FRO, reflecting consensus of April meeting and implementing river discharge
July, 1978	Rhode Island established discharge limits (nitrate levels at 50% of drinking water standards) which effectively eliminated river discharge possibility
August-September, 1978	Given the impractical Rhode Island limits and an unseasonable rainfall accumulation, FRO concluded that prompt temporary correction was needed. From several options reviewed, an above-ground storage tank, with special leak and spillage protection, was selected
October, 1978	Revised license amendment application submitted, covering use of storage tanks
November, 1978	Construction of covered storage tank started
December, 1978	Construction of storage tank completed