

March 14, 1967

Mr. Eber R. Price, Director  
Division of State and Licensing Regulations  
United States Atomic Energy Commission  
Washington, D.C. 20545

Dear Mr. Price:

Pursuant to Part 20.405 (a)(2) of Title 10 of the Code of Federal Regulations, Nuclear Fuel Services Reprocessing Plant at West Valley, New York, hereby submits a full report pertaining to the plant shutdown on February 15, 1967, when the General Purpose Evaporator (7C-5) bottoms concentrate was inadvertently lost to the interceptor through a leak in the transfer line (7P-170) from the General Purpose Evaporator to the Waste Storage Tank (8D-2). A complete account of the accident follows:

On the morning of February 14, 1967, the General Purpose Evaporator (7C-5) was shut down to neutralize and transfer the bottoms to the Waste Storage Tank (8D-2). The evaporator contained 5,277 liters before neutralization and 8,338 liters after neutralization to a pH of 10. The transfer of the 7C-5 bottoms to 8D-2 started at about 1815 hours on February 14, 1967. An Instrument Technician entered the acid recovery pump room (ARPR) at approximately 1830 hours to blow down the probes on 6PDR-13. He entered the ARPR under a special work procedure based on a survey made earlier on February 14th. Upon opening the door to the ARPR he heard the hissing of the leak and liquid hitting the floor. As there was only one fluorescent light left burning in the room the location of the leak could not be determined. The Instrument Technician notified the operator with him of the leak and then called the Shift Supervisor by phone. The Shift Supervisor came immediately with a flashlight and located the leak in a two inch tee on line 7P-170. The leak was spraying liquid over approximately 50 percent of the room. The Shift Supervisor immediately notified the control room to stop the transfer from 7C-5 to 8D-2. This stopped the leak. About 2200 liters of material remained in 7C-5. The rest of the material went to either 8D-2 or out the floor drain in the ARPR to the interceptor. Calculations show that about 2100 liters went to the interceptor.

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The interceptor was not being discharged at the time of the accident. At 1900 hours the Shift Health & Safety Technician sampled the interceptor and found the activity at  $2.3 \times 10^{-2}$   $\mu$ c/ml gross beta and  $2.9 \times 10^{-4}$   $\mu$ c/ml gross alpha. Other samples of the interceptor by both Health and Safety and analytical were taken and verified that the interceptor had a high activity level. Lagoons #1 and #2 were sampled and found to contain only normal activity levels. A survey of the interceptor and the area around it showed that the radiation level at the rail was 200 mr/hr, 25 mr/hr at the valve pit and 100 mr/hr at 2 inches from the valve that had to be removed in order to bypass the interceptor. The interceptor was bypassed on the morning of February 15th, to permit discharge of routine plant waste during non-operating periods. At this time there was approximately 37,000 gallons of material in the interceptor.

The ARPR was entered after a survey was made and partial decontamination to repair the tee in 7P-170. A special work permit was issued and five men made the entry. The five men that worked on the job received 0, 75, 153, 176 and >200 mr on their dosimeters. The film badge of the man that received greater than 200 mr on his dosimeter was pulled and sent in for readings immediately. He was kept out of radiation areas until his badge results were received. His badge showed 59 mr gamma. The man who was in the cell with him had 179 mr on his dosimeter and 65 mr gamma on his film badge.

The inlet to Lagoon #2 was put on a four hour sample schedule until the interceptor was put back in service. Lagoon #2 was not discharged to Lagoon #3 until 4 consecutive 4 hour samples showed the activity in Lagoon #2 to be less than  $5 \times 10^{-4}$   $\mu$ c/ml. An inline gamma monitor (portable detector, count rate meter and recorder) was mounted on the temporary bypass around the interceptor, calibrated and kept in operation. A grab sample was taken of the bypass effluent every four hours and analyzed.

A safety committee meeting was held on February 15, 1967 to discuss the interceptor incident and to determine a course of action. As a result, a Temporary Operating Procedure was issued and signed by the four responsible signers to rework the contents of the interceptor by pumping said contents back to the General Purpose Evaporator.

During the following two week period, a total of six safety committee meetings were held with regard to the interceptor incident. These meetings were held to follow the interceptor progress in detail. As a result, the contents of the interceptor were brought back into the plant and reworked without over exposure to anyone. The bottom of the interceptor was covered with from 6 to 12 inches of concrete to cover some radioactive particulate matter, primarily Zr-95. After the concrete had hardened, the interceptor was filled with water and the contents were sampled for several days. After the committee was assured that the interceptor was safe to operate again, it was put back in service on March 3, 1967.

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As a result of this incident, there was no exposure to plant personnel in excess of normal limits. Contamination was limited to the interceptor and the ARPR. There was no danger to the health and safety of the public at any time.

Should any questions arise, we shall be happy to supply any additional information.

Very truly yours,

R.P. Wischow  
Assistant General Manager

MHL/BEK/pa

cc: R.W. Kirkman  
J. Anderson

bcc: T.C. Runion  
W.H. Lewis  
J.J. Merkle  
B.G. Bechhoefer  
All Safety Committee Members  
B.E. Knight

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U.S. ATOMIC ENERGY COMMISSION

ATTN: MR. R. W. KIRKMAN

PURSUANT TO 20.403 (B) (3) OF TITLE 10 CODE OF FEDERAL REGULATIONS, NUCLEAR FUEL SERVICES REPROCESSING PLANT AT WEST VALLEY, N.Y. HEREBY REPORTS AN INCIDENT INVOLVING A PLANT SHUTDOWN OF ABOUT SIX DAYS. A BRIEF DESCRIPTION OF THE OCCURRENCE FOLLOWS:

ON THE MORNING OF FEB. 14, 1967, THE GENERAL PURPOSE EVAPORATOR (7C-5) WAS SHUT DOWN TO NEUTRALIZE AND TRANSFER THE BOTTOMS TO THE WASTE STORAGE TANK (8D-2). THE EVAPORATOR CONTAINED 5,277 LITERS BEFORE NEUTRALIZATION AND 8,338 LITERS AFTER NEUTRALIZATION TO A PH OF 10. TRANSFER OF THE 7C-5 BOTTOMS TO 8D-2 STARTED AT ABOUT 1815 HOURS ON FEB. 14, 1967. AN INSTRUMENT TECHNICIAN NOTICED A LEAK IN A TWO INCH LINE (7P-170) IN THE ACID RECOVERY PUMP ROOM AT ABOUT 1835 HOURS AND NOTIFIED THE SHIFT SUPERVISOR. THE SHIFT SUPERVISOR IMMEDIATELY SHUT DOWN THE WASTE TRANSFER. THE INTERCEPTOR DISCHARGE GATE HAD BEEN CLOSED PRIOR TO THIS INCIDENT; NO PART OF THE PLANT WAS OPERATING AT THIS TIME. THE LAGOONS WERE SAMPLED AS WELL AS THE INTERCEPTOR. THE LAGOON SAMPLES SHOW NO INCREASE IN ACTIVITY, INDICATING THAT THE CONTENTS OF THE EVAPORATOR WERE CONTAINED IN THE INTERCEPTOR. THE INTERCEPTOR SAMPLE HAS AN ACTIVITY LEVEL RANGE OF ABOUT ONE MICROCURIE PER ML. THE REST OF THE ACTIVITY REMAINED IN 7C-5 OR WAS DISCHARGED TO 8D-2. THE INTERCEPTOR CONTAINS ABOUT 40,000 GALLONS OF MATERIAL.

LAGOON #2 IS BEING SAMPLED EVERY FOUR HOURS AND WILL CONTINUE TO BE SAMPLED EVERY FOUR HOURS UNTIL THE CONTENTS OF THE INTERCEPTOR ARE RETURNED TO THE PLANT. NO ACTIVITY OR CONTAMINATION WAS RELEASED TO THE PLANT OR ENVIRONMENT EXCEPT THE ACID RECOVERY PUMP ROOM, THE INTERCEPTOR AND THE CONNECTING DRAIN LINE. THERE WAS NO PERSONAL EXPOSURE IN EXCESS OF NORMAL LIMITS ASA RESULT OF THIS INCIDENT.

THE INCIDENT IS UNDER INVESTIGATION AND THE RESULTS WILL BE REPORTED PROMPTLY.

W.H. LEWIS  
VICE PRESIDENT  
GENERAL MANAGER

END.