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Department of Energy
Richland Field Office
P.O. Box 550
Richland, Washington 99352

92-RPB-149

AUG 31 1992

Mr. David B. Jansen, P.E.
Hanford Project Manger
State of Washington
Department of Ecology
P. O. Box 47600
Olympia, Washington 98504-7600

Mr. Paul T. Day
Hanford Project Manager
U. S. Environmental Protection Agency
Region 10
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Dear Messrs. Day and Jansen:

REQUEST FOR WITHDRAWAL OF THE 303-M OXIDE FACILITY PART A PERMIT APPLICATION

The U.S. Department of Energy, Richland Field Office (RL) and the Westinghouse Hanford Company (WHC) are submitting a request for withdrawal of the 303-M Oxide Facility Part A permit application. This request for withdrawal is being submitted because the 303-M Oxide Facility ceased operations prior to November 23, 1987, the date on which the State of Washington Department of Ecology received authorization to regulate the dangerous waste. This request also supports removal from the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) the associated milestone for a Part B permit application submittal for the 303-M Oxide Facility (Milestone M-20-30)1.

The Part A permit application for the 303-M Oxide Facility was filed for future waste processing activities needed to support the fuel fabrication operations in the 300 Area. Since the mission of the Hanford Site has shifted away from defense production and associated fuel fabrication needs, there is no longer any need for the operation of the 303-M Oxide Facility in this capacity.

Ignitability (from zirconium) was the only dangerous waste characteristic exhibited by the mixed waste processed or to be processed in the 303-M Oxide Facility. RL and WHC have ensured that all ignitable residues have been removed from this unit. RL and WHC contend that the absence of any environmental hazard at the 303-M Oxide Facility makes formal closure under Chapter 173-303-610 of the Washington Administrative Code an unnecessary expense.

Finally, the 303-M Oxide Facility is located over Burial Ground 618-1, which has been identified for remediation via the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process (300 Aggregate Area 300-FF-2 Operable Unit). Therefore, any residual radionuclide contamination

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associated with this unit will be addressed in accordance with the CERCLA rememdiation process.

Enclosed is background information on the 303-M Oxide Facility for your review. Written notification is requested from your office that the Part A permit application for this unit is to be withdrawn on the basis established in the enclosure. A Change Request to remove Milestone M-20-30 from the Tri-Party Agreement will be forwarded to you in a separate transmittal.

Should you have further questions, please contact Mr. C. E. Clark, RL, on (509) 376-9333 or Ms. S. M. Price, WHC, on (509) 376-1653.

Sincerely,

James D Bauer

James D. Bauer, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Field Office

R E Lerch

R. E. Lerch, Manager
Environmental Division
Westinghouse Hanford Company

EAP:CEC

Enclosure:
Request for Withdrawal of
the 303-M Oxide Facility
Part A Permit Application

REQUEST FOR WITHDRAWAL OF THE 303-M OXIDE FACILITY PART A PERMIT APPLICATION

1.0 INTRODUCTION

1.1 Purpose

The following information supports the request for withdrawal of the 303-M Oxide Facility Part A permit application and the removal of the associated Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) milestone for submittal of a Part B permit application. The request is being submitted by the U.S. Department of Energy, Richland Field Office (RL) and the Westinghouse Hanford Company (WHC). The information presented demonstrates that the 303-M Oxide Facility did not treat, store, or dispose of mixed waste after November 23, 1987; the date the State of Washington Department of Ecology (Ecology) received authorization over the hazardous waste component of mixed waste. The information further supports removal from the Tri-Party Agreement of the associated milestone for submittal of a Part B permit application for the 303-M Oxide Facility (milestone M-20-30).

1.2 Previous Application Submittal

A Part A permit application for the 303-M Oxide Facility was submitted to Ecology in May of 1983 under the Washington State Hazardous Waste Management Act (Chapter 70.105 RCW). The Part B permit application (milestone M-20-30) for this facility is scheduled to be submitted to Ecology by October of 1992, in accordance with the schedule established in the Tri-Party Agreement. The Part A permit application for this unit was submitted in anticipation of using the 303-M Oxide Facility to support fuel manufacturing activities past the date of November 23, 1987. However, the last campaign at this unit was completed on February 11, 1987, and RL has no plans to operate at this unit in the future.

2.0 FACILITY DESCRIPTION

The 303-M Oxide Facility is located in the 300 Area of the Hanford Site and was used for the treatment of pyrophoric materials generated during the fuel fabrication operation. The fuel fabrication waste consisted of pyrophoric saw fines and lathe turnings, known as chips, composed of slightly enriched uranium and Zircaloy-2 (i.e., a zirconium alloy). These materials were treated by a calcination process to eliminate their pyrophoric nature and, therefore, reducing the potential for spontaneous combustion during transportation. A maximum of 200 pounds of material per hour was treated by the calcination process. Following calcination, the material was recycled through the nuclear fuels manufacturing process.

The 303-M Oxide Facility was operated from 1983 until February of 1987. The only material that was treated at this unit was the zirconium and uranium mixtures, as discussed above. This unit will not be needed to support fuel manufacturing operations in the future and has not been operated since the last campaign was completed in February of 1987.

3.0 GENERAL PROCESS DESCRIPTION

The 303-M Oxide Facility was used to store and treat radioactive chips and fines of solid material, generated during the manufacturing of reactor fuel elements. Fines were created when uranium tube extrusions were sawed into fuel elements. Chips were generated when fuel elements were machined to length. The chips and fines were composed of slightly enriched uranium and Zircaloy-2.

The material generated from the processes discussed above, were pyrophoric in nature and would have been considered an ignitable mixed waste if the unit were in operation today. The uranium and Zircaloy-2 chips and fines were placed in 30-gallon drums and filled with water to prevent spontaneous combustion. The drums were then transported to the 303-M Oxide Facility for storage on the outdoor pad or within the building prior to treatment. Prior to treatment, these materials were dewatered and the size of the chips were reduced in a machine chopper. The resulting chips and fines were then hand-packaged into combustible containers or loaded in 5-pound batches.

The calcination unit, wherein the oxidation occurred, consisted of three 30-gallon drums placed in a water bath. Water surrounded the drums to a point just below the tops of the drums, and the water continuously flowed past the drums to promote cooling. A 5-pound batch of chips was then placed into one of the 30-gallon drums, and the chips were then ignited using a hand-held propane torch. The treatment process oxidized the material to uranium oxide (U_3O_8) and zirconium oxide (ZrO_2), rendering the waste non-pyrophoric. The oxidation process was allowed to proceed almost to completion before another 5-pound batch was added. After five batches of chips had been added, a 5-pound batch of fines were added. Chips and fines were added alternately until the drum was full. When a 30-gallon drum was filled with treated material, it was allowed to cool and then the drum was sealed.

Each calcination unit was equipped with a ventilation system hood which collected the air heated by the oxidation reaction and passed it through a baghouse and high-efficiency particulate air (HEPA) filters to prevent atmospheric contamination by uranium. The 303-M Oxide Facility air pressure was kept below atmospheric pressure to prevent inadvertent leakage of airborne uranium from the unit.

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4.0 WASTE DESIGNATION

As discussed above, the pyrophoric material in question was a mixture of uranium and Zircaloy-2. Chips and fines received from Building 313 and 333 were of three uranium-235 (U-235) enrichments:

- o 1.25 weight percent (wt%);
- o 0.947 wt%; or
- o 0.71 wt%

The chips received from Buildings 313 and 333 were composed of 95.6 percent uranium, 1.9 percent Zircaloy-2, and 2.5 percent inert, and the fines were composed of about 3.3 percent Zircaloy-2, 80.9 percent uranium, and 15.8 percent inert material. The uranium in this matrix meets the definition of source material as defined in the Atomic Energy Act of 1954 (AEA). Therefore, it is excluded from the definition of solid waste via Section 1004 of the Resource Conservation and Recovery Act (RCRA).

The remaining portion of the matrix consisted primarily of Zircaloy-2 chips and fines which are inherently pyrophoric. In order to determine if this material was regulated as a hazardous waste under Subtitle C of RCRA, an evaluation of Washington State's authority over the hazardous waste component of mixed waste during the period of facility operation must be evaluated. During the period of operation for the 303-M Oxide Facility (i.e., 1983 to February 1987), the State of Washington did not have RCRA Subtitle C authority over the hazardous waste component of mixed waste.

On July 3, 1986, the EPA issued a notice (53 FR 24505) specifying that "In order to obtain and maintain authorization to administer and enforce a hazardous waste program pursuant to Subtitle C of RCRA, states must have authority to regulate the hazardous components of radioactive mixed waste." The EPA further clarified that authorized state programs in effect at that time did not apply to mixed waste. Because the State of Washington did not receive RCRA Subtitle C authorization over the hazardous waste component of mixed waste until November 23, 1987, RL and WHC believe that the calcination process which operated at the 303-M Oxide Facility was not subject to regulation under Subtitle C of RCRA until November 23, 1987.

5.0 DESCRIPTION OF SITE REMEDIATION APPROACH

In addition to the information discussed above, RL and WHC contend that closure of the 303-M Oxide Facility site is already appropriately addressed under the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). As discussed above, the waste treated at this unit was solely regulated due to the characteristic of ignitability. The source of this hazard was the Zircaloy-2 material; uranium is also pyrophoric but it is excluded from regulation per Section 1006(a) of RCRA as source material regulated under the AEA. All ignitable waste has been removed from the 303-M Oxide Facility and this unit, in its current configuration, does not pose a threat to human health or the environment.

The 303-M Oxide Facility is located directly on top of Burial Ground 618-1, which will undergo remediation in accordance with CERCLA. RL and WHC recommend performing one remediation activity under CERCLA that addresses site remediation. Remediation in accordance with the CERCLA remediation process will ensure that hazardous substances and dangerous waste residues are appropriately addressed; will expedite the remediation process; and serve to ensure that environmental restoration activities at the Hanford Site are cost effective, while ensuring protection of human health and the environment.

6.0 SUMMARY

The request by RL and WHC to withdraw the Part A permit application and to remove from the Tri-Party Agreement the associated milestone for submittal of the Part B permit application is supported by the information provided above. The Part A permit application was originally submitted in anticipation that the facility would continue to operate to support fuel manufacturing operations subsequent to November 23, 1987. However, RL has determined that additional nuclear fuel for the production of special nuclear materials is not needed. In addition, these units, including the 303-M Oxide Facility, will not be used in the future. RL and WHC believe that waste management activities conducted at this unit were not subject to regulation under the provisions of RCRA Subtitle C until November 23, 1987, and is requesting withdrawal of the Part A permit application on the basis of protective filing.

7.0 CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

John D. Wagoner — 8/27/92

Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Richland Field Office

Date

8-11-92

Co-operator
Thomas M. Anderson, President
Westinghouse Hanford Company

Date

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. D. Bauer, RL R. E. Lerch, WHC	D. B. Jansen, Ecology P. T. Day, EPA	Incoming:9205518

Subject: REQUEST FOR WITHDRAWAL OF THE 303-M OXIDE FACILITY PART A PERMIT APPLICATION

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