

70-687

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October 2, 1991

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Decommissioning and Regulatory Issues Branch
Div. of Low Level Waste Management and
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Office of Nuclear Material Safety and
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U. S. Nuclear Regulatory Commission
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Dear Mr. Orlando:

This letter contains the responses to the questions received on August 22, 1991.

NRC QUESTION # 1: Section 3.3.1.3

How will each of the listed components will be "removed". Where and how will the activated lead be stored until disposal? Which type of shipping cask will be used to store and transport the activated lead?

ANSWER:

The vertical and horizontal shield access doors will be removed by lifting with the overhead crane. The horizontal shield retaining frame will be unbolted and manually lifted out. The shield blocks and graphite will be manually unstacked. The lead shield blocks are not expected to be significantly activated and will be placed into an LSA box. The box will be stored in Building #1 and #2.

NRC QUESTION # 2: Section 3.3.1.4

How will the beam tube pool water piping and pumps will be removed.

ANSWER:

Power to the pumps will be disconnected. They will be unbolted and/or mechanically segmented.

NRC QUESTION # 3: Section 3.3.1.6

How will the lead and/or concrete block be removed?

ANSWER:

The lead and concrete blocks will be manually unstacked.

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NRC QUESTION # 4: Section 3.3.1.7

How what type of thermal or mechanical cutting technique will be used during this task? How will the pipe sections, concrete and sand be removed?

ANSWER:

Where possible components will be unbolted at flanges, etc. When cutting is needed, it will be done by use of saws on aluminum, plasma arc torch on stainless steel and flame cutting for carbon steel. Concrete will be removed using jackhammers, concrete saws and hydraulic splitting. Sand will be manually shoveled and/or excavated with a small backhoe.

NRC QUESTION # 5: Section 3.3.1.8

What type of cutting torch will be used to segment and remove the liners?

ANSWER:

A plasma arc torch or similar device will be used to cut the liner and embedments.

NRC QUESTION # 6: Section 3.3.1.11

How will the piping, demineralizer, heat exchanger, segment, "all remaining equipment", sump pumps and associated piping, and sump liner be removed?

ANSWER:

Components and pipe will be primarily removed by unbolting and saw cutting.

NRC QUESTION # 7: Section 3.3.1.12

How will the underlying grout be removed.

ANSWER:

Underlying surfaces will be scabbled as necessary after tiles are removed.

NRC QUESTION #8:Section 3.3.1.13

How will the above-ground pipe and vent line be removed?
How will the walls and piping be segmented?

ANSWER:

The storage tank will be decontaminated by high pressure water spray. The tank would then be mechanically segmented. Vent lines and pipes will be unbolted, mechanically cut or if necessary, thermally cut.

NRC QUESTION # 9: Section 3.3.1.15

How will the pipe penetrations be sealed? How will the concrete roof, primary vent pipes, tank, contaminated soil, soil above the tank and sump pump suction line be removed? How will the walls and floors be broken?

ANSWER:

Pipes will be seal using expandable pipe plugs. The concrete roof will be decontaminated by scabbling. Jackhammers, hydraulic splitting and saw cutting will be used to remove the concrete roof. The vent pipes will be mechanically cut. The hold-up tank (HUT) will be removed by saw cutting it into slabs and lifting them out with a crane located above the excavation. Contaminated soil and soil above the HUT will be removed with a backhoe and/or manual digging.

The walls and floors will be removed by jackhammering, saw cutting and hydraulic splitting.

NRC QUESTION #10: Section 3.3.1.16

How will the concrete fill and bedrock be removed?

ANSWER:

Concrete fill and bedrock would be removed by jackhammering and excavation via manual and/or backhoe digging.

NRC QUESTION #11: Section 3.3.1.18

How will the exhaust system from the storage tube area, concrete embedded exhaust ducts and vertical and horizontal sections of the exhaust system be removed?

ANSWER:

The exhaust system in the storage tube area will be mechanically cut and disassembled. Concrete embedded exhaust duct will be removed by first breaking up the concrete around the duct with jackhammers, sawing and hydraulic splitting. The duct would then be mechanically cut and lifted out. The vertical sections of the exhaust system will be rigged and mechanically cut into sections.

NRC QUESTION # 12: Section 3.3.1.19

How will the ceramic tile crane rail, gates, elevator mechanism, reactor chemistry lab wall, passageway floor next to the canal structure, inner canal/gamma pit wall and floor be removed?

ANSWER:

Tile will be pried loose with a small power chisel. The crane rail will be unbolted or cut as needed with a torch. The gates will be lifted out with the overhead hoist. The gate channels will be mechanically unbolted or cut. The elevator mechanism will be unbolted and mechanically segmented with a saw. The lab wall will be removed using jackhammers. The floor next to the canal will be removed by sawing, jackhammering and hydraulic splitting. The canal/gamma pit walls and floor will be removed by sawing, jackhammering and hydraulic splitting.

NRC QUESTION # 13: Section 3.3.1.20

How will the fill below the floor be removed?

ANSWER:

The fill will be removed by manual or small backhoe excavation.

NRC QUESTION # 14: Section 3.3.1.21

How will the embedments, exhaust ducts and steel floor and platforms be removed?

ANSWER:

Embedments will be pried and dug out using jackhammers and hydraulic splitters. The exhaust duct will be removed by breaking and removing surrounding concrete with jackhammers and hydraulic splitting. The steel floor will be cut with a plasma arc torch or similar device, and mechanically pried out. The platforms will be lifted out using the overhead crane.

NRC QUESTION # 15: Section 3.3.1.22

How will the liners be removed?

ANSWER:

The liners will be decontaminated by high pressure water sprays. If removal is required they may be cut with torches and/or mechanically pried out.

NRC QUESTION # 16: Section 3.3.1.23

How will the vitreous clay exhaust duct be removed? How will decontamination of the hot cell operating area and radiochemistry lab be performed?

ANSWER:

The concrete floor will be removed by saw cutting, jackhammering and hydraulic splitting in manageable sections. They will be lifted out using a backhoe, fork lift or portable gentry crane. The surrounding soil will be excavated manually and/or with a small backhoe. If contaminated, soil will be placed into LSA boxes. Exposed duct sections will be lifted out in the same manner as the concrete floor sections.

Decontamination of the radiochem lab and operating area will be done by wiping, HEPA vacuuming and scabbling.

NRC QUESTION # 17: Section 3.3.1.24

How will the filter room internal equipment ceilings and wall and surrounding floor area be removed?

ANSWER:

Internal components i.e., filters and brackets will be mechanically disassembled and manually lifted out. The interior of the room will be scabbled. The room and surrounding floor will be removed by jackhammering, saw cutting and hydraulic splitting.

NRC QUESTION # 18: Section 3.3.1.25

How will the floor above the duct and the concrete wall be removed?

ANSWER:

See answer to question #16.

NRC QUESTION # 19: Section 3.3.1.27

How will the outer surfaces be decontaminated? How will piping/equipment/tanks be removed?

ANSWER:

Outer surfaces will be scabbled. Equipment and components will be unbolted or mechanically cut.

NRC QUESTION # 20: Section 3.3.1.28

How will the equipment discussed in this section be removed?

ANSWER:

They will be unbolted and/or mechanically cut.

NRC QUESTION # 21: Section 3.3.1.30

How will the exhaust ducts be removed? How will segmentation of the ducts be accomplished?

ANSWER:

The duct will be rigged to a crane or other lifting device and mechanically cut. Open duct ends will be sealed with plastic wrap or other suitable sealing material.

NRC QUESTION # 22: Section 3.3.1.34

Describe "standard demolition techniques".

ANSWER:

If the NRC/NYS licenses have been terminated, explosive or wrecking ball type demolition will be used. If the radioactive material licenses are still in place, because of underlying contaminated soil and footings, the building will be taken down piece-by-piece.

NRC QUESTION # 23: Section 3.3.1.35

Describe how suspected contamination will be checked.

ANSWER:

The same radiological monitoring techniques as will be used for the final survey.

NRC QUESTION # 24:

Are the building exhaust systems checked using DOP tests after HEPA filters are replaced?

ANSWER:

Yes

NRC QUESTION # 25:

Describe the "mobile radwaste treatment system".

ANSWER:

It will consist of a pre-filter and ion-exchange column along with necessary hoses, pipes and a pump.

NRC QUESTION # 26:

Describe the composition of the radwaste shipping containers.

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ANSWER:

Boxes and drums will be constructed from steel. High integrity containers will be made of high density polyethylene.

NRC QUESTION # 27:

Who is the Radiation Safety Officer?

ANSWER:

The RSO is Edward Truskowski.

NRC QUESTION # 28:

Outline the impact on the waste disposal facility?

ANSWER:

Approximately 127,000 ft³ of radioactive waste will be generated. The Barnwell facility has 11.1 million ft³ of certified burial space left. Therefore, approximately 1.1% of capacity will be used.

NRC QUESTION # 29:

What is the total time (in man-hours) estimated to complete the project?

ANSWER:

75,545 man-hours is estimated.

Very truly yours,



J. J. McGovern
President/Plant Manager

cc: Attached list

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