



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY

U.S. ARMY LABORATORY COMMAND
MATERIALS TECHNOLOGY LABORATORY
WATERTOWN, MASSACHUSETTS 02172-0001



6 November 1992

Risk Management Office

Docket No. 50-47

Mr. Alexander Adams
Non-Power Reactors, Decommissioning
and Environmental Project Directorate
Division of Reactor Projects
Office of Nuclear Reactor Regulation
OWPN MS. 11B20
Washington, D.C. 20555

Dear Mr. Adams:

This is a request for modification to the Reactor Decommissioning Plan for the U.S. Army Materials Technology Laboratory Research Reactor, Revision 1, Dated October 1991. Specifically, to modify sections 3.4.6, Basement Sumps and, 3.4.7, Gamma Facility and Storage Tubes. This modification will not require the removal of the steel liners from the gamma facility or sumps, the floor drains and connecting lines or the storage tubes unless they cannot be decontaminated to the levels specified in Reference 4 to the Decommissioning Plan.

This proposed modification to the Decommissioning Plan does not increase the probability of contamination being released. The welded steel liners do not permit the passage of water to the substrate. The storage tubes, although not lined with steel, show only trace levels of contamination. Post-decontamination/termination surveys will consist of:

- An alpha survey with a large area gas flow proportional detector;
- A beta survey with a large area gas flow proportional detector;
- A survey with a sodium iodide R meter;
- Smears.

This request for modification of the plan is being made because survey results for these structures show incidental levels of activity. There is no indication of contamination on the substrate concrete. Any activity leached into the concrete substrate or remaining on the structures will be identified during the termination survey.

We believe that this modification to the Decommissioning Plan does not raise any unresolved safety issues, nor constitute any increased risk to decommissioning personnel or the public. We ask that the NRC provide an expedited review to this request for modification, to the degree practicable. Decommissioning personnel are hoping to complete the work prior to the end of the year, and to take advantage of the resulting cost reduction and schedule improvement. An expedited review would be appreciated.

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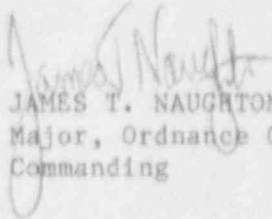
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Copies of section 3.4.6 (Basement Sumps), 3.4.7 (Gamma Facility and Storage Tubes) and Figure 3-8 (Plan View of the AMTL Reactor Basement Floor) are attached.

Encl


JAMES T. NAUGHTON
Major, Ordnance Corps
Commanding

JF:
Thomas Dragoun

Caution should be exercised to ensure that all circuits are deenergized, including shorting out all capacitors prior to starting removal activities.

3.4.5 Basement Piping and Equipment

The basement contains HVAC, water conditioning equipment, coolant piping and components, barricades, and other miscellaneous equipment. These items will be removed from the facility in a convenient order, with the coolant related equipment being removed last to minimize the potential for contamination of materials. As in dismantling other piping systems, steps must be taken to ensure that systems are empty and not pressurized.

The basement equipment can be hoisted to the main floor through either of the 7- by 7-ft removable hatches in the main floor (see Figure 3-7).

The coolant equipment enclosure walls (Figure 3-8) should be removed prior to removing equipment in order to facilitate access to the equipment.

3.4.6 Basement Sumps

The two basement dry sumps (Figure 3-8) shall be removed by cutting the steel liners away from the concrete. The concrete will then be surveyed and chipped away as needed to remove contaminated materials.

The floor drains and connecting lines shall be chipped out from the drain inlet to where the lines enter the sump.

The sump pump shall be removed, the sump liner cut away from the concrete, and concrete removed, as needed, and materials disposed of as surveys and analyses dictate.

Openings made into the floor system shall be covered and/or barricaded to prevent personnel injury from falls.

The two basement dry sumps (Figure 3-8) shall be decontaminated. If decontamination efforts are unsuccessful at reducing contamination levels below those specified in Reference 4, all or portions of the steel liner will be removed and any contaminated concrete chipped, scabbled or removed as needed.

The floor drains and connecting lines shall be decontaminated, as required. If the post-decontamination survey shows levels in excess of the levels specified in Reference 4, any contaminated floor drains or contaminated connecting lines will be removed and the concrete chipped away as needed to remove the contaminated materials. In addition, any floor drains and connecting lines will be removed if they cannot be adequately surveyed.

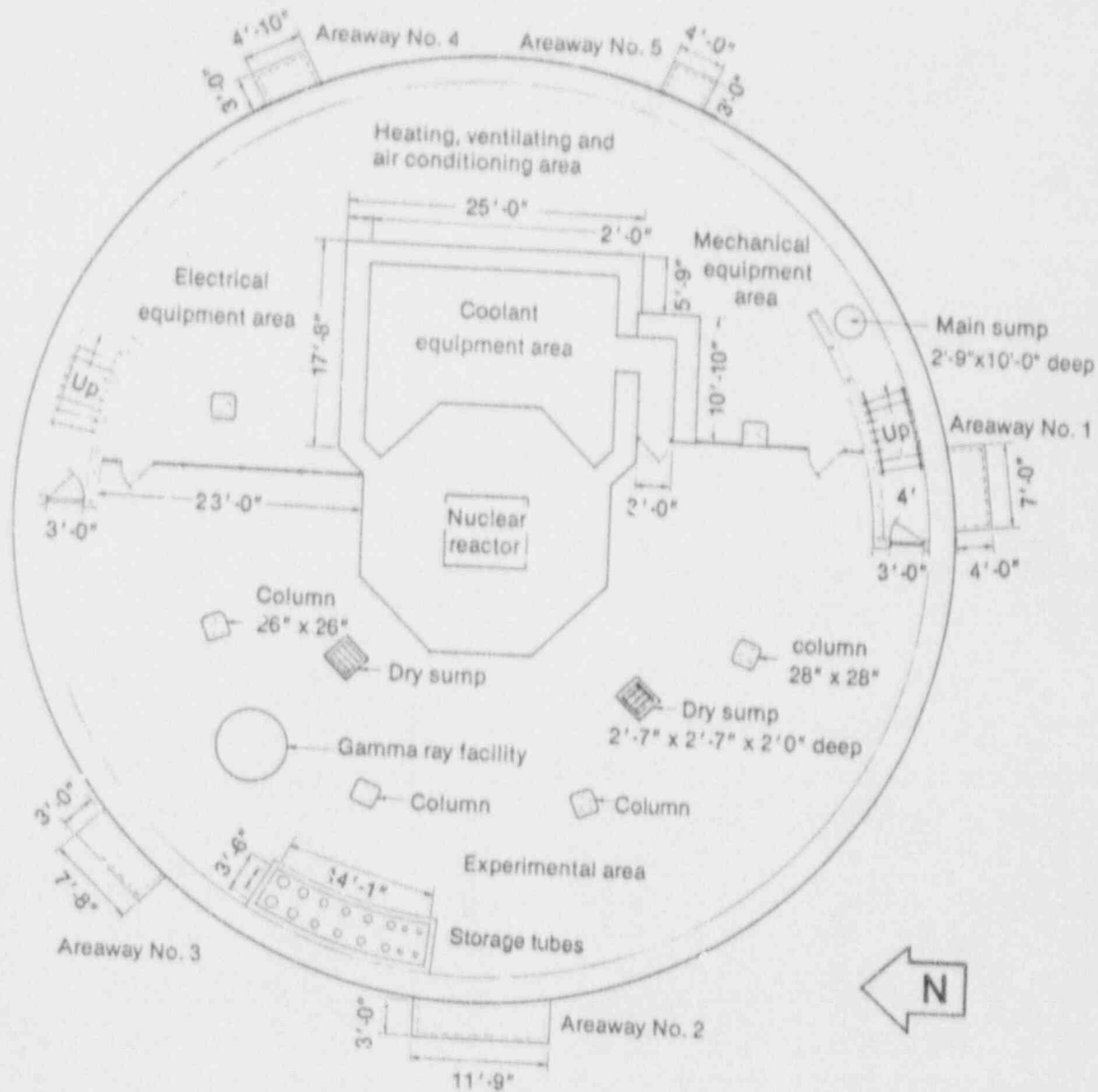
The sump pump shall be removed and the sump decontaminated. If decontamination efforts are unsuccessful at reducing contamination levels below those specified in Reference 4, all or portions of the steel liner will be removed and any contaminated concrete chipped, scabbled or removed as needed.

Pits or openings made in the floor shall be covered and/or barricaded to prevent personnel injury from falls.

The gamma facility storage rack shall be removed and the gamma facility shall be decontaminated. If decontamination efforts are unsuccessful at reducing contamination levels below those specified in Reference 4, all or portions of the steel liner will be removed and any contaminated concrete chipped, scabbled or removed as needed.

The beam tube storage tubes shall be decontaminated, as required. If the post-decontamination survey shows levels in excess of the levels specified in Reference 4, the contaminated portion of the storage tubes will be removed and any contaminated concrete chipped away as needed to remove all contaminated material.

Openings resulting from the removal of storage tubes shall be covered or barricaded to prevent personnel injuries.



Basement Floor Plan

Not to scale

1-0025

Figure 3-8. Plan view of the AMTL Reactor basement floor.

3.4.7 Gamma Facility and Storage Tubes

The gamma-ray facility (Figure 3-8) steel liner and storage rack shall be cut away from the concrete and the concrete surveyed and scabbled as needed to remove contamination. The storage tubes (Figure 3-8) shall be removed using coring, cutting, or other methods chosen by the contractor to separate the tubes individually or in groups from the basement floor.

The openings resulting from removal of the storage tubes shall be temporarily covered to prevent personnel injuries.

3.4.8 Pool

If not phased in earlier, the pool demolition is the next step after the basement has been decontaminated and all materials removed. If pool demolition was begun earlier, progress can now be made beyond the main floor.

During pool demolition, the operating floor shall also be removed back to the supporting columns.

Pool structural materials are very likely to be contaminated in the area above the reactor core and for a short distance below the core area. There is also a high probability of contamination in the hold-up tank below the reactor pool. Extra care, such as the use of temporary work enclosures, must be taken during this phase to avoid unnecessary exposure to workers and to prevent the spread of contamination.

Demolition of the pool monolith can be accomplished utilizing chipping techniques, sawing, drilling and wedging, or other methods proposed by the contractor and approved by the Army. In any case, the methodology to be used in this phase must be approved by the Army before implementation to ensure that the method will minimize the potential for spread of airborne contamination.