



REMEDICATION PLAN

FOR

BUILDING 25 MEZZANINE

ALCOA FACILITY

PREPARED BY

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October 8, 1992

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REMEDIATION OF BUILDING 25 MEZZANINE (ALCOA FACILITY)

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## REMEDICATION OF BUILDING 25 MEZZANINE (ALCOA FACILITY)

### 1. PURPOSE

The object of this procedure is to outline the required actions necessary to safely enter Alcoa Facility's Building 25 Mezzanine and perform remediation efforts. This procedure also outlines the necessary steps to perform any necessary equipment or facility decontamination.

### 2. RESPONSIBILITIES

#### 2.1 Rad Controls Supervisor (RCS) shall:

- 2.1.1 Be responsible for implementation of this procedure.
- 2.1.2 Provide technical support and assistance to Health Physics Technicians using this procedure.
- 2.1.3 Assist in the training and provide the pre-job briefing for technicians using this procedure.

#### 2.2 Health Physics Technician shall:

- 2.2.1 Conduct the initial mezzanine survey, establish contamination controls, and prescribe protective requirements during the performance of this procedure.
- 2.2.2 Maintain radiation exposure and spread of radioactivity ALARA during performance of this procedure.
- 2.2.3 Stop work when conditions and practices are unsafe.
- 2.2.4 Report any radiological problems and concerns, along with any corrective actions to the RCS.
- 2.2.5 Perform the required remediation and decontamination actions in this procedure.

#### 2.3 NES Laborator Technician shall:

- 2.3.1 Be responsible for analyzing the samples once collected.

2.4 Miscellaneous:

2.4.1 Grid establishment will be prepared in accordance with the recommendations of NUREG/CR-2082 and the requirements of the Building 20 Radiological Characterization Plan.

3. PROCEDURE

3.1 CONTROL POINT SET-UP

3.1.1 MATERIALS

1	roll	herculite
1	ea	table
1	ea	chair
4	rolls	2" Duct Tape
4	ea	posting signs w/sign inserts
1	roll	rad barrier ribbon
1	ea	stanchions
1	ea	step-off pad
1	ea	utility knife
1	ea	Beta-gamma count rate instrument w/probe
1	ea	Alpha count rate instrument w/probe
50	ea	smears
25	sheet	masslinn

3.1.2 Clear area in front of mezzanine door large enough to accommodate control point area. This will be an area of approximately 50 square feet.

3.1.3 Lay down herculite to cover floor where control point area will be located outside mezzanine door. (See Figure 3.1 Control Point Lay Out for herculite dimensions)

3.1.4 Using 2" duct tape, tape the herculite securely to floor and approximately 4" up any wall it will come in contact with.

3.1.5 Using Figure 3.1 set up control point.

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## 3.2 MEZZANINE AREA ENTRY

### 3.2.1 EQUIPMENT AND MATERIALS

#### 3.2.1.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)

1	ea	tyvek coveralls w/booties and hood
1	pair	plastic shoe covers
1	pair	rubbers
2	pair	rubber gloves
1	pair	cotton liners
1	ea	self-reading pocket dosimeter
1	ea	thermoluminescence dosimeter(TLD)
2	rolls	masking tape
1	ea	dust mask (for nuisance dust only, not for radiological protection)

#### 3.2.1.2 SURVEY EQUIPMENT

1	ea	Ludlum 19 microR dose rate instrument
1	ea	Ludlum model 2221 meter w/44-9 probe
1	ea	Eberline SAC-4
1	set	check sources
1	ea	high volume air sampler
2	ea	high volume 2" filter air sampler heads
1	box	2" air sampler filter paper
1	box	cloth smears with adhesive backing
10	ea	30 gallon plastic bags
25	ea	1 quart plastic bags
1	bag	masslinn
1	ea	masslinn mop

### 3.2.2 PREREQUISITES

- 3.2.2.1 A pre-job safety meeting has been given that discusses expected dose rates and contamination levels. Also discuss ALARA and dose reduction techniques.
- 3.2.2.2 The Radiation Work Permit (RWP) for the job has been read, understood, filled out correctly, and signed.
- 3.2.2.3 Source check determinations are performed on all survey equipment.



3.2.2.4 Instrument calibrations are current for all equipment used in the initial entry survey.

### 3.2.3 MEZZANINE ENTRY SURVEY

3.2.3.1 Assemble the high volume air sampler with a loaded air sample filter head.

3.2.3.2 Start air sampler and record start time and initial flow rate on an appropriate form.

3.2.3.3 Enter the mezzanine with:

- loaded and assembled high volume air sampler
- Ludlum 19 microR meter
- Ludlum 2221 w/Ludlum 44-9 probe
- (10) sheets of masslinn
- (20) smears
- (5) 15 gal. plastic bags
- (5) quart size plastic bags
- (2) pens

3.2.3.4 Place high volume air sampler on elevated surface, preferably at breathing zone level, and place exhaust so as not to cause significant resuspension of contaminants. Turn on and record start time and initial flow rate.

3.2.3.5 While air sampler is running, perform the radiological survey inside of mezzanine room. The isotope of concern in the mezzanine area is Uranium-238 (U-238).

(NOTE: The radiological survey will be in accordance with USNRC NUREG/CR-2082, "Monitoring for Compliance With Decommissioning Termination Survey Criteria" and with the NES Building 20 Radiological Characterization Plan for Chemetron Corporation as guides.)

3.2.3.6 The floor and wall surfaces will be identified with a system of survey grids using NES procedure No.1, "Preparing a Reference Grid System" Appendix A of the NES Building 20 Radiological Characterization Plan for Chemetron Corporation.

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- 3.2.3.7 Scan each grid square for the presence of fixed radioactivity using a Ludlum Model 2221 hand-held portable count rate meter with a Ludlum Model 44-9 beta-gamma pancake probe. Areas that are surveyed and found to be above the unrestricted release criteria (5000 dpm/100 cm<sup>2</sup> fixed plus removable beta-gamma for U-238) will be identified with chalk or other marker.
- 3.2.3.8 Inside each grid area take two smears. Record smear locations on smear envelopes. Place smears in 1-qt. plastic bag. Areas that are surveyed and found to be above the unrestricted release criteria (20 dpm/100 cm<sup>2</sup> alpha and 1000 dpm/100 cm<sup>2</sup> beta-gamma for U-238) will be identified with chalk or other marker.
- 3.2.3.9 Survey window sills, records shelving, and boxes of records on the floor according to Procedure No. 4, "Beta-Gamma Surveys", Appendix A of the NES Building 20 Radiological Characterization Plan for Chemetron Corporation. Place smears in 1-qt. plastic bag. Areas that are surveyed and found to be above the unrestricted release criteria (5000 dpm/100 cm<sup>2</sup> fixed plus removable beta-gamma for U-238 or 20 dpm/100 cm<sup>2</sup> alpha and 1000 dpm/100 cm<sup>2</sup> beta-gamma removable for U-238) will be identified with chalk or other marker.
- 3.2.3.10 When 100 cu. ft. volume of air has been pulled through the filter remove the air filter head from the air sampler and remove air filter from filter head. Place filter in envelope, recording stop time and final flow rate.
- 3.2.3.11 Check air sample with portable instrumentation. Send air sample to lab to determine derived air concentration (DAC) of mezzanine.
- 3.2.3.12 If DAC levels exceed pre-determined levels for entry into mezzanine without use of full face particulate respirator, exit mezzanine room immediately, don a particulate respirator.

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### 3.3 MEZZANINE REMEDIATION

#### 3.3.1 EQUIPMENT AND MATERIALS

##### 3.3.1.1 DECONTAMINATION EQUIPMENT

1	ea	HEPA vacuum cleaner
1	box	Q-tips
1	box	kimwipes
2	ea	soft scrub brushes
2	bottles	phisoex detergent
2	bottles	rubbing alcohol
8	ea	scotch brite pads
8	ea	single edge razor blades
2	ea	paint scrapers
5	ea	soft bristle paint brushes
2	ea	wire brushes
100	sheets	masslinn
25	ea	30-gal. plastic radwaste bags
5	rolls	2" masking tape
1	ea	B-25 Box (Staged outside Building 25)
2	ea	indelible black marker

#### 3.3.2 REMEDIATION PROCEDURE

3.3.2.1 Once survey is complete and all contaminated areas and equipment have been identified, remediation efforts can begin.

3.3.2.2 Using the 30-gal. radwaste bags, bag all boxed records on the floor.

3.3.2.3 Using the 2" masking tape, tape the bag closed. Make sure weight of contents in each bag is suitable for carrying by one person. Mark each bag with:

- 1) Contents
- 2) Dose rate (if any)
- 3) Date
- 4) Technician initials

3.3.2.4 Carry each bag of records to control point. At the step-off pad, double bag and hand across pad. Have technician on "clean side" of step off pad carry radwaste to staged B-25 box outside of Building 25.



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- 3.3.2.5 After all boxed records have been removed from the room, decontamination attempts shall begin.
- 3.3.2.6 Any equipment or item which needs to be decontaminated for unrestricted use will be referred to an Alcoa Company employee for disposition. Waste generated during the performance of any decontamination process will be disposed of by NES Technicians.
- 3.3.2.7 Begin site remediation by using the least damaging and easiest methods available. Decontamination should begin with simple strategies leading to increasingly aggressive strategies.
- 3.3.2.8 Clean up visible debris.
- 3.3.2.9 Surfaces or equipment identified as contaminated may be decontaminated using the following strategies. Strategies are listed from least aggressive to most aggressive:
- ▣ Vacuuming
  - ▣ Wiping down with kimwipes
  - ▣ Wiping down with masslinn cloth
  - ▣ Wiping down with kimwipes and phiso-hex detergent solution
  - ▣ Wiping down with kimwipes and alcohol solution
  - ▣ Scrubbing with Scotch Brite Pad
  - ▣ Scraping with single-edge razor blade
  - ▣ Scraping with paint scraper
  - ▣ Scrubbing with wire brush
- 3.3.2.10 Resurvey areas to determine if decontamination attempts are successful.
- 3.3.2.11 Refer to an Alcoa Company employee for disposition of any equipment or item which cannot be decontaminated for unrestricted use.



3.3.3 MEZZANINE EXIT

3.3.3.1 Once decontamination attempt is completed remove all survey equipment and bagged waste material outside of room to control point area.

3.3.3.2 Wipe down all survey equipment, then hand it across step-off pad, bagging it as it comes across. Double bag radwaste material as it comes across step-off pad.

3.3.3.3 Remove dosimetry and hand it across step-off pad placing it into a sheet of masslinn. Properly remove PPE's and place in plastic bags. At step-off pad remove remaining plastic shoe covers and last pair of rubber gloves and precede across the step-off pad to "clean area".

3.3.3.4 Once across the step-off pad, retrieve your dosimetry then immediately do a whole body frisk using proper count rate instrument and probe.

3.3.3.5 Mark on outside off all radwaste bags, including:

- 1) Contents
- 2) Dose rate (if any)
- 3) Date
- 4) Technician initials

3.3.3.6 Place all radwaste bags outside into B-25 box.

3.3.3.7 The outside of the container shall be surveyed for any loose contamination, dose rated on all sides, marked with a unique package identification number, and labeled as "norm waste".

3.3.3.8 Once job evolution is complete do a radiological survey of outside areas to ensure no spread of contamination. Use masslinn and masslinn mop to do large area swipe of outside areas.

3.3.4 FINAL SURVEY

3.3.4.1 Once decontamination efforts have been deemed successful do a final verification survey according to NES "Building 20 Radiological Characterization Plan for Chemetron Corporation" Section 4: "Components of the Radiological Characterization. Document survey results accordingly.



#### 4. REFERENCES

- 4.1 USNRC NUREG/CR 2082, "Monitoring for Compliance With Decommissioning Termination Survey Criteria"
- 4.2 NES "Building 20 Radiological Characterization Plan for Chemetron Corporation"
- 4.3 NES "Radiological Characterization Plan for the Chemetron Corporation"

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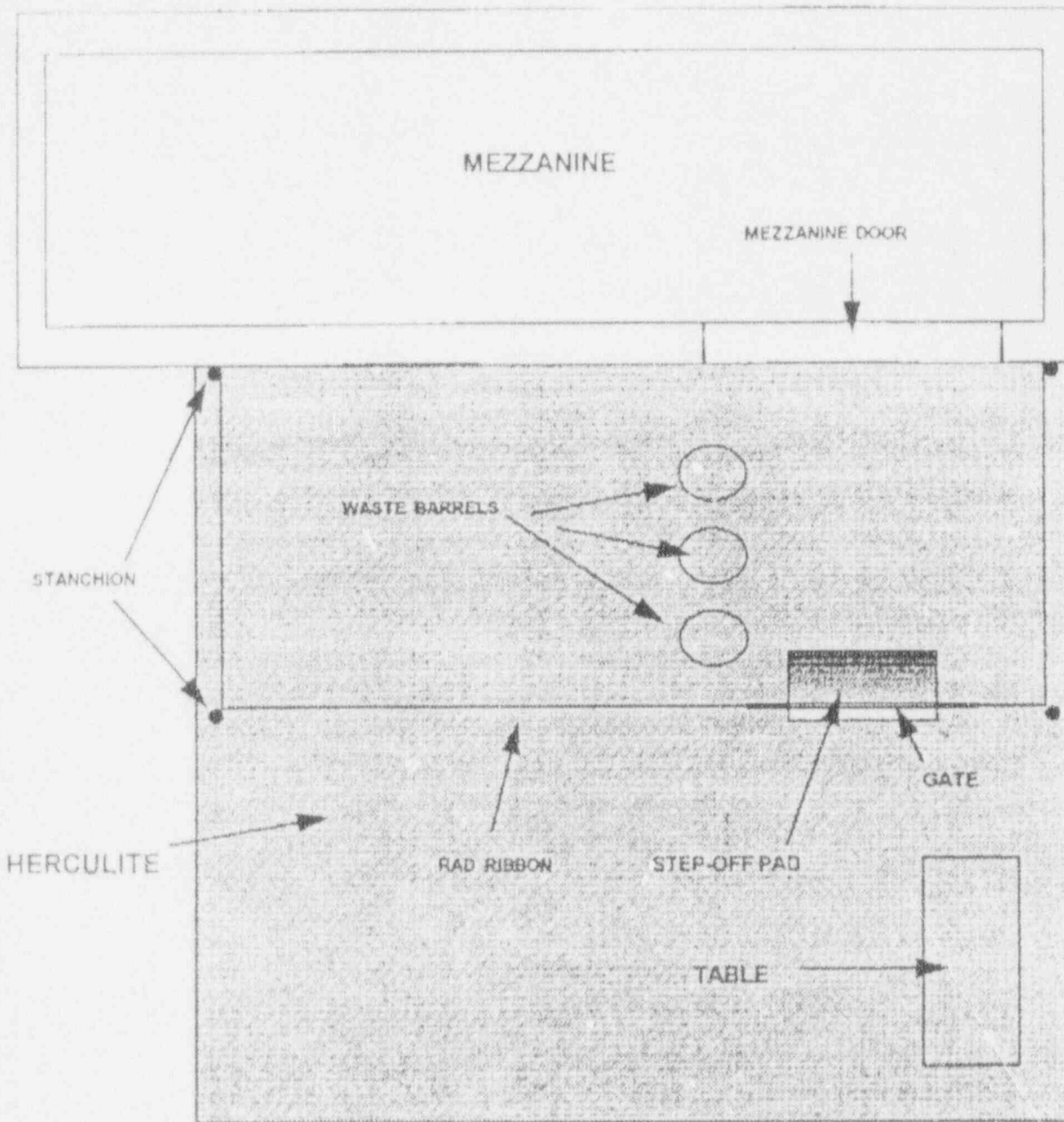


FIGURE 3.1 CONTROL POINT LAYOUT