

OH.21-3
NLO

December 11, 1957

DECONTAMINATION SURVEY OF MAGNUS METAL DIVISION, CINCINNATI, OHIO, ON
DECEMBER 10, 1957

J. A. Quigley, M.D.

J. F. Wing and R. L. Ruhe

CENTRAL FILES

OBJECTIVE OF TRIP

For the past two years the Magnus Metal Division of Cincinnati, Ohio has been machining various forms of uranium metal for National Lead Company of Ohio under Subcontract S-129. Since no further NLO contract work was anticipated at the end of this period, a letter dated 10/24/57, from F. L. Cuthbert to Dr. J. A. Quigley, requested that Industrial Hygiene personnel make a survey of Magnus Metal Division equipment and facilities to determine the extent of decontamination necessary and submit a report so that the termination of the subcontract may proceed.

CONCLUSIONS AND RECOMMENDATIONS

The equipment used in machining uranium metal and the area immediately surrounding this equipment were found to be generally contaminated. (Readings over 20 mrep/hr beta / gamma were observed on the 2610-A Beta-Gamma Survey Instrument, and ranges as high as 3,000 d/m/cm³ alpha were observed on the PAC-1G Alpha Counter.) Table I shows the readings of each piece of equipment and the surrounding area.

The need for decontamination of this room and equipment is necessary if we hope to meet the standards set up by the AEC. The following is a list of recommendations which should be followed:

1. The three pieces of machining equipment should be disassembled in order to remove contamination from inaccessible places. Steam cleaning of the machines should prove satisfactory in most cases. However, there will be some fixed contamination on all three machines which cannot be removed by steam alone. In these cases, a cleaning agent (sodium hexametaphosphate) and a wire brush should be used. The floors and other surfaces may be cleaned in the same manner.
2. The decontamination of this room should be accomplished in a series of steps, with radiation surveys and Industrial Hygiene

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& Radiation Departmental approval required prior to beginning a following step:

- a) Ceiling and overhead light fixtures, and allied surfaces.
 - b) Walls and attachments thereto.
 - c) Machinery.
 - d) Floor.
3. Put all used rags, dirt, grease, etc. into a drum and send back to NLO.
 4. A complete set of protective clothing should be worn by the personnel performing the operation. This should include cap, coveralls, shoes, and gloves.
 5. Eating and/or smoking in the immediate area should not be permitted while decontamination operations are in progress.
 6. In order to expedite this campaign, a representative of the NLO Industrial Hygiene & Radiation Department should make frequent visits to the shop to advise on the progress being made.

PERSONS VISITED

Mr. Frank Johnson, Sr. - Plant Manager, Magnus Metal Division

MISCELLANEOUS COMMENTS

The supervisory personnel of Magnus Metal Division were found to be most cooperative.

COMMITMENTS

None

J. F. Wing

R. L. Ruhe

RLR:bg

SURFACE CONTAMINATION ON EQUIPMENT

MREP/IR BETA \neq GAMMA

	<u>Miscellaneous</u>	<u>Table</u>	<u>Average</u>		<u>Protrudances</u> <u>Knobs, Handles,</u> <u>Levers, Wheels</u>	<u>Reservoir</u>	<u>Attachments</u>
			<u>Upright</u>	<u>Base</u>			
Bullard Vertical Turret Lathe	N/A	1 - 2	4	1-1.5	2 - 6	.2	3
Warner-Swasey Horizontal Turret Lathe	N/A	>20	1.5	.05-.1	.05	>20	N/A
Acme Horizontal Turret Lathe	N/A	>20	.4	.5	10	9 - 10	N/A
Cabinets, Shelves, Walls, Floor, Overhead Surfaces, Overhead Light Fixtures	.5 β \neq γ 1000-3000 α						

N/A - Not Applicable