

OAK RIDGE NATIONAL LABORATORY

OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX X
OAK RIDGE, TENNESSEE 37831

July 20, 1984

My...

Ms. Gale P. Turi
Division of Remedial Action Projects
Office of Nuclear Energy
U.S. Department of Energy
MS - NE24
Washington, D.C. 20545

Dear Ms. Turi:

Radiological Survey of the Guterl Steel Facility, Lockport, New York

As requested, a visit was made to the Guterl Steel facility (formerly Simonds Saw and Steel) on July 9, 1984 to determine if there have been significant changes in the radiological status of the facility since the last survey. In general, measurements made during this survey are consistent with those made during the 1977 survey (ORNL) and a follow-up survey in 1981 (FBD).

Significant amounts of contaminated material are present in the rolling mill area of the plant. Measurements of beta-gamma radiation made on the floor were as high as 3 mrad/h and levels up to 35 mrad/h were found beneath the floor plates. A layer of yellowish material a few inches below the floor plates appears to be the source of the elevated radiation levels.

Based on the results of the current survey, it appears that the rolling mill area of this facility does not meet the criteria for release of facilities and equipment for unrestricted use. Details of this survey are attached.

If you have questions, please let us know.

Sincerely,

W. D. Cottrell
W. D. Cottrell
Radiological Survey Activities Group
ORNL

Attachment

- cc: B. A. Berven
- R. O. Chester
- S. V. Kaye
- E. L. Keller, DOE/OR
- W. H. Shinpaugh

GUTERL STEEL CORPORATION
LOCKPORT, NEW YORK

At the request of the Department of Energy (contact: Ms. Gale Turi), the former Simonds Saw and Steel Plant (presently Guterl Steel) was visited to determine if there has been significant changes in the radiological status of the plant since the Oak Ridge National Laboratory (ORNL) survey in 1977, and a follow-up survey by Ford, Bacon, and Davis (FBD) in 1981. W. H. Shinpaugh and W. D. Cottrell of ORNL visited the plant on July 9, 1984 and were given a brief tour and history of the plant by Reginald Buri, Guterl Steel plant manager.

The plant handled uranium and thorium metal during the period 1948-1956. From that time (1956) until it was closed on May 1, 1983, the plant has been in continuous operation and has processed steel using the same mills and furnaces that were used to process thorium and uranium metal. The rolling mills (10 in. and 16 in.), furnaces (4), conveyor lines and associated handling equipment are still in place. As an aid in handling the materials (ingots, bars, etc.), the area in and around the 16 in. mill is raised to around the level of the rollers (about 2 ft). This area (approximately 45 ft x 90 ft) is covered by cast iron plates (2.5 ft x 5 ft x 1 in. thick) and is underlain by debris (cinders, dirt, metallic scale, etc.). The area, including the mills, furnaces, and conveyor lines, is contained in the area called the "gridded area" in the 1977 ORNL report.

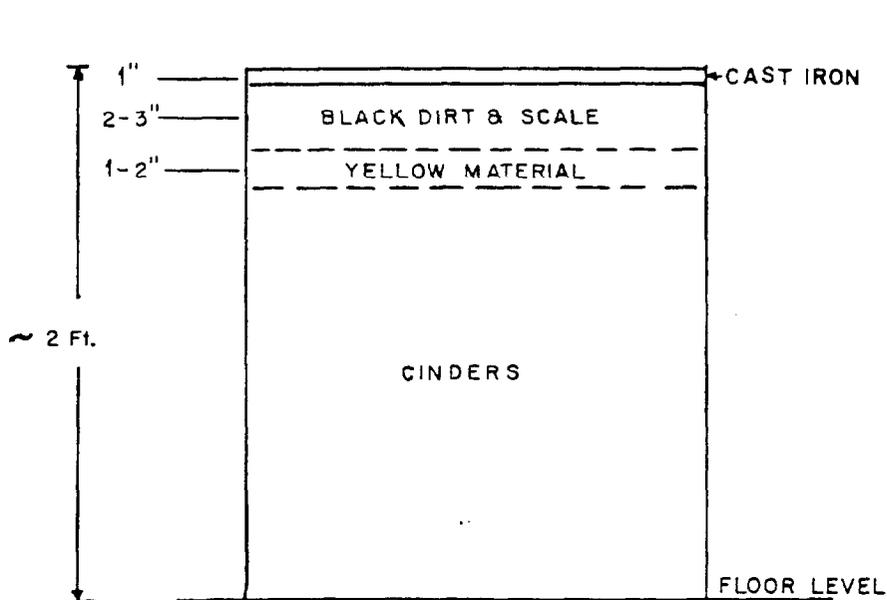
The July 1984 survey included:

1. Walkover gamma scan of rolling mill area
2. Alpha, beta-gamma, and gamma measurements at selected locations
3. Collection of three samples of material beneath the cast iron plates near the 16 in. mill.

Gamma, beta-gamma, and alpha measurements and locations are recorded on Fig. 1. Sample locations and pertinent data are shown on Fig. 2.

Based on information provided by Reginald Buri and on the physical appearance of the plant, there have not been any significant changes in the physical layout of the rolling mill area during its operation (i.e., there has been no apparent grading, scraping, or filling done).

The material beneath the cast iron plates seems to contain most of the contamination. Specifically, a layer of yellowish material lying two to three inches below the iron plates appears to be the source of the elevated radiation levels. A sample of this material was collected as well as a sample of the black dirt above this layer. Below is a vertical cross-section of the raised area.



The entire raised area appears to be contaminated, and most areas of the dirt floor show elevated gamma levels. The area near the 10 in. mill shows some contamination to be present but at a lower level than the 16 in. mill area.

In general, measurements made during this survey are consistent with those of the 1977 survey. The radiological condition of this area of the plant appears to be much the same as at the time of the original survey (1977).

As found during the 1977 survey, direct readings of beta-gamma radiation exceed the NRC guidelines for the release of facilities and equipment for unrestricted use. The July 1984 survey measured beta-gamma dose rates of 3 mrad/h on the floor plates and 35 mrad/h underneath the plates. The contaminated material beneath the cast iron floor plates, while presenting minimal health risk if left undisturbed, could pose some risk if disturbed by grading, scraping, or stirring. Based on data from the current as well as previous surveys, it appears that the rolling mill area of this facility does not meet the criteria for release of facilities and equipment for unrestricted use.

Key: Gamma @ 1 meter
 Gamma @ surface
 Beta-gamma
 Alpha

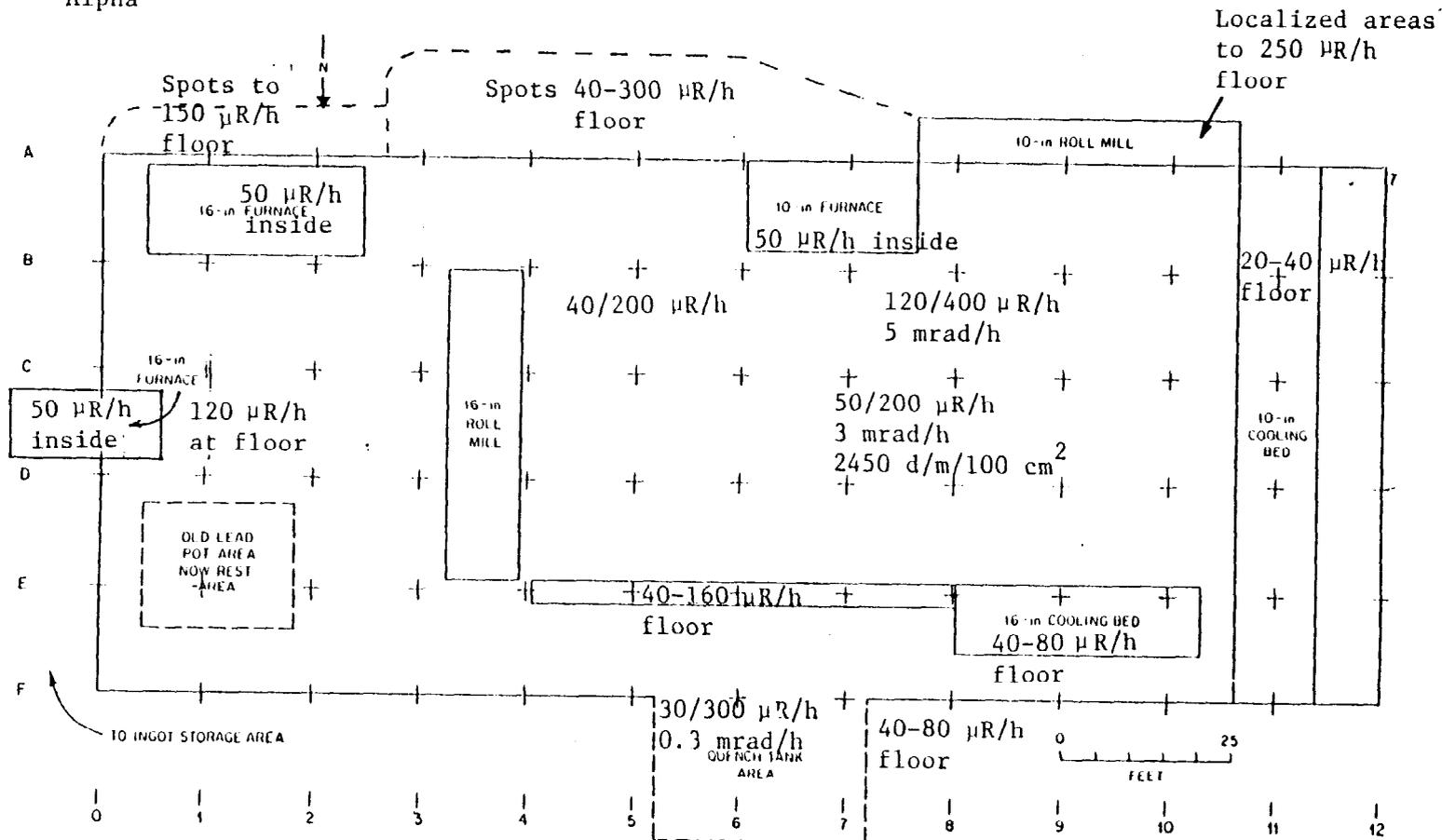


Fig. 1. Radiation levels in rolling mill area.

Location 1 - samples LS101A & LS101B

Floor plate in place

γ^1 - 52/200 μ R/h ¹At 1 meter
 $\beta\gamma^2$ - 0.40 mrad/h At surface
 α - 300 d/m/100 cm^2

Floor plate removed

γ^1 - 100/600 μ R/h
 $\beta\gamma^2$ - 35 mrad/h

Location 2

Floor plate in place

γ^1 - */80 μ R/h
 $\beta\gamma^2$ - 0.13 mrad/h
 α - 500 d/m/100 cm^2

Floor plate removed

γ^1 - */600
 $\beta\gamma^2$ - 7.5 mrad/h

Location 3 - sample LS102A

Floor plate in place

γ^1 - 60/200 μ R/h
 $\beta\gamma^2$ - 0.30 mrad/h
 α - 150 d/m/100 cm^2

Floor plate removed

γ^1 - *1200 μ R/h
 $\beta\gamma^2$ - 35 mrad/h

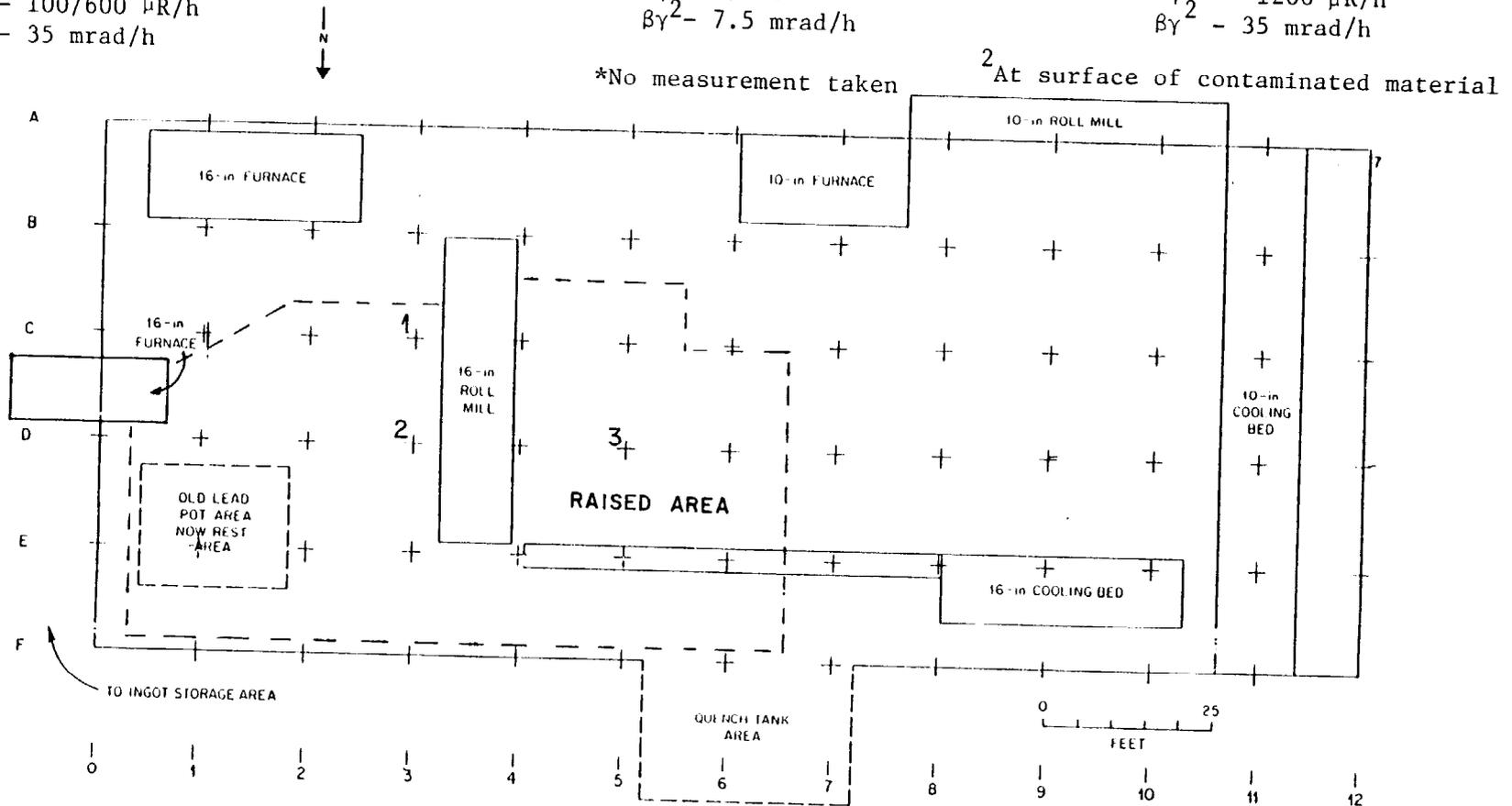


Fig. 2 Sampling locations in rolling mill area.