30-19025

RADIATION STERILIZERS INCORPORATED

September 5, 1985

U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Rd.
Glen Ellyn, IL 60137

RE: License Number 04-19644-01

'85 SEP -9 P1:07

Dear Sir:

Enclosed please find the detailed report of Radiation Sterilizers. Inc's radiation survey.

Radiation Sterilizers. Inc. submits this report in compliance with the U.S. Nuclear Regulatory Commission's Material License, condition number 16.

Should you require additional information, please contact me at the telephone number below.

Sincerely,

RADIATION STERILIZERS, INC.

Barry P. Fairand
General Manager

CC: Division of Fuel Cycle and Material Safety

Enclosures

BPF/ljs

Date 9/11/85
Log Sept 13
By Jacques
Orig. To
Action Compl.

8511270360

Rec'd LFBM 9/11/85

19210

Radiation Sterilizers Incorporated, 305 Enterprise Drive, Westerville, Ohio 43081/Telephone: (614) 888-4077

RADIATION
STERILIZERS
INCORPORATED

'85 SEP -9 P12:43

RADIATION SURVEY OF
RADIATION STERILIZERS, INCORPORATED
WESTERVILLE, OHIO GAMMA CELL, THIRD CESIUM LOADING

DESCRIPTION OF GAMMA CELL

With a 10 megacurie cobalt 60 source loading the biological shield for the Radiation Sterilizers, Inc. Westerville, Ohio facility was calculated to provide less than 0.25 mR/hr exposure rates at all external surfaces and at the entrance to the maze. The gamma cell is totally contained within the exterior walls and roof of the building. A drawing of the exterior geometry of the gamma cell and its location with reference to the building is shown in Figure 1.

SOURCE LOADING PROCEDURE

The third loading of cesium isotope at the Westerville facility consisted of thirty-six capsules containing melt cast cesium chloride. The total activity content of the source cesium-137 isotope on July 1, 1985 was 1,771,500 curies.

The capsules were loaded into the Westerville facility source racks on August 19 and 20, 1985. At that time, the calculated source activity was 1,765,879 curies. The thirty-six capsules were loaded into eight rack positions. Eighteen capsules, which were located above and below the initial cesium loading, were placed in each of the two source racks. The source racks were remotely raised from the water storage pool into the gamma cell and a radiation survey over the exterior walls and roof of the cell was taken. These measurements were made on August 21, 1985.

RADIATION SURVEY PROCEDURE

The external periphery of the gamma cell was surveyed after the source racks containing the cesium-137 and cobalt 60 sources were raised into the irradiation room. These readings were taken with two Xetex Model 305 halogen quenched Geiger Mueller digital ratemeters. Measurements were made on an approximate one meter square grid on the external walls and the top of the roof. No readings were observed to exceed 0.25mR./hr. on all of the exterior walls or at the maze entrance.

MEASUREMENTS EXCEEDING 0.25 mR./hr.

LOCATION AND CORRECTIVE ACTION

Readings exceeding 0.25mR./hr. were observed at localized areas on the cell roof. Measured radiation levels and locations of the measured environments are shown in Figure 2.

Maximum readings were obtained along streaming paths directly above the source rack cables. The cell roof, as noted earlier, is totally contained within the building and furthermore, it is a controlled access area where authorized personnel only are allowed. As shown in Figure 2., the ladder to the cell roof is located inside the transfer room, which can only be entered through controlled access doors.

A permanently affixed cage with a lead shield covers both cable drives where they egress the cell. Furthermore radiation hazard signs are located on the surface of each cage. The radiation levels on the outside of the cages will be monitored during subsequent loadings of cesium to determine if additional shielding is required.

BPF/ljs
September 5,1985

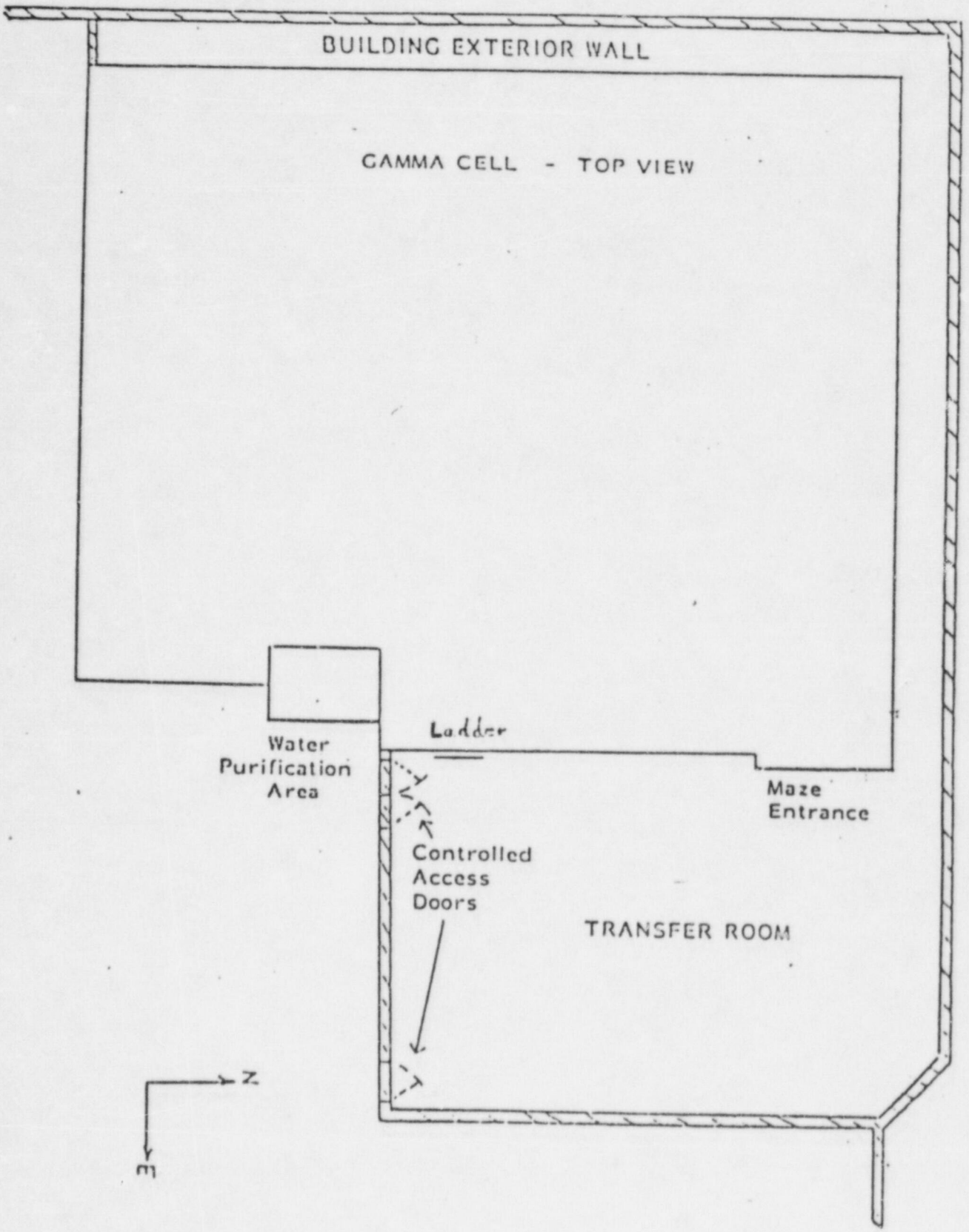

Figure 1 EXTERIOR GEOMETRY OF GAMMA CELL

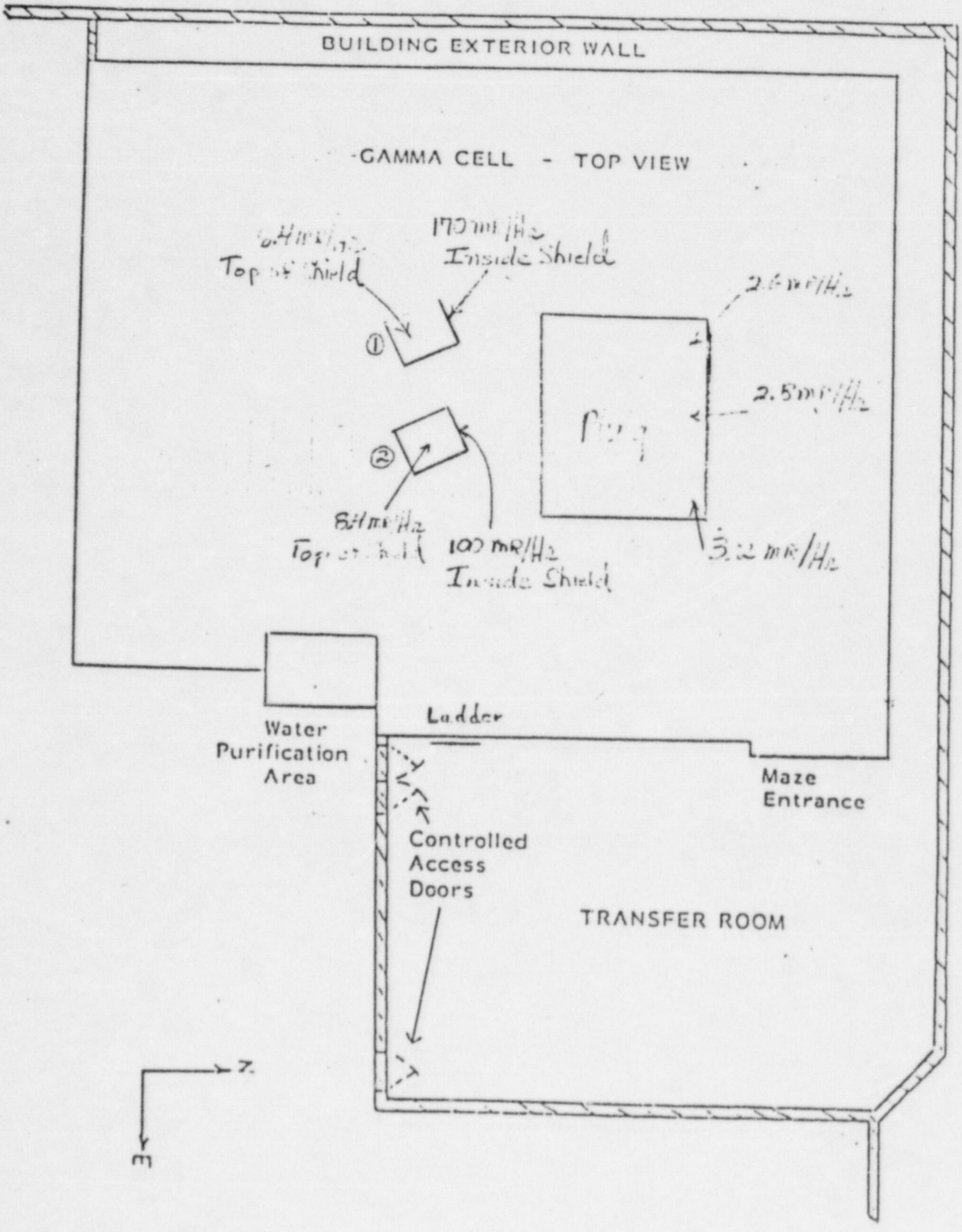

Figure 2, EXTERIOR GEOMETRY OF GAMMA CELL

(RADIATION LEVEL)