

memorandum

DATE: AUG 10 1993

REPLY TO EM-421 (W. Williams, 903-8149)
ATTN OF:

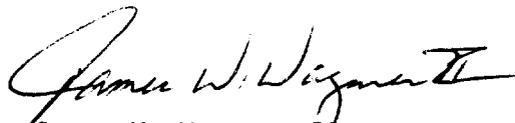
SUBJECT: Hazard Assessment for Radioactive Contamination at the Seymour Site,
Seymour, Connecticut

TO: L. Price, OR

We have reviewed the Hazard Assessment for the Radioactive Contamination at the Seymour Site, Seymour, Connecticut, dated May 1993. This hazard assessment is related to residual radioactive material in the subsurface drain system (i.e., three manholes and 540 ft of interconnecting pipe) on the first floor of the Ruffert Building at the Seymour Specialty Wire Company in Seymour, Connecticut. We approve your request for the application of supplemental limits at the site because conservative potential doses to workers and the general public from the residual uranium-238, uranium-234, and uranium-235 found in the drain system are insignificant, and additional remedial action at the subject building would not be cost beneficial.

In particular, the hazard assessment indicates that a present worker in the building could receive a maximum annual dose of 11 mrem/yr above background, which is well below the Department of Energy (DOE) guideline of 100 mrem/yr for protection of the general public. The maximum exposure rate in the building, 5.8 uR/h above background, is below the DOE guideline of 20 uR/h above background for the average level of gamma radiation inside a building that has no radiological restrictions on its use. A future worker performing demolition of all of the manhole linings and drain lines could receive a maximum annual dose of 0.5 mrem/yr, which is also below the DOE guideline for protection of the general public. And finally, the specific activity of soil remaining after demolition that may have become contaminated from a past leak in the pipe system was estimated at 0.5 pCi/g, which is essentially background.

During our review of the hazard assessment, we identified some comments and corrections (see attachment) that should be addressed prior to publication. If you have any questions regarding this action, please call me at (301) 903-8147.



James W. Wagoner II
Director
Division of Off-Site Programs
Office of Eastern Area Programs
Office of Environmental Restoration

Attachment

bcc:
Booz, Allen and Hamilton, Inc.

Distribution:
EM-40 (2)
EM-42 (3)
Williams Reader

EM-421:williams:djn:903-8145:7/20/93:seymour.haj

P. Hevner Review: pk 7/23

Williams
EM-421
7/23/93
Wagoner
EM-421
7/24/93

Fiere
EM-42
7/23/93

COMMENTS
on
Draft Hazard Assessment for Radioactive Contamination
at the Seymour Site, Seymour, Connecticut,
May 1993

GENERAL COMMENTS:

1. This draft survey report adequately demonstrates that the risks from leaving small quantities of residual radioactive material in the drain system at the Seymour Site are low.
2. The total quantity of uranium at the site was estimated for comparison with exempt quantities. The greatest specific activity found in the contaminated material removed from the pipes was 2,716 pCi/g (page A-8). This value was used to estimate the total radioactivity in a cubic meter of contaminated soil as follows:

Assuming that this concentration is in one cubic meter of soil (as the report did) and that 0.5 of the total quantity of radioactivity is U-238, the total mass of uranium is 4.75 kg, or about 10 pounds.

This value is less than the small quantity of source material that is exempt from licensing procedures in the U.S. Nuclear Regulatory Commission (NRC) rules (10 CFR 40.22(a)). It is also less than the U.S. Environmental Protection Agency's (EPA) reportable quantity (100 pounds of uranium as nitrate) specified under Superfund rules. This estimate should be added to the report to further demonstrate that little uranium is present at the site and that the amounts present are below the regulatory thresholds established by NRC and EPA.

SPECIFIC COMMENTS:

Page 4, Figure 2: The location of the maximum radiation levels should be shown in this figure (see comment below - page 7). Also, the compass direction and a distance scale should be shown on the figure.

Page 7, 2nd paragraph: The maximum radiation levels measured in the building is due to the naturally occurring radioactive substances in the brick and mortar of the building or manholes. The fact that these are background levels should be discussed in the report, especially if these maximum levels occur near the manholes.

Page A-3, last sentence: The largest dose conversion factor should be for lung class Y, not lung class W. The values selected are from the RESRAD Manual (Table C.1) and are the lung class Y values.

Page A-6, 2nd paragraph, last sentence: The largest dose conversion factor should be for lung class Y, not lung class W. The values selected are from the RESRAD Manual (Table C.1) and are the lung class Y values.