

Los Alamos

NATIONAL LABORATORY

memorandum

Environment, Safety, and Health Division
ESH-17 Air Quality Group

To/MS: Distribution
Thru: Scott Miller, ESH-17, J978
Jean Dewart, ESH-17, J978
David Kraig, ESH-17, J978
From/MS: D.J. Dawson, ESH-17, J978
Phone/FAX: 5-3850/FAX 5-8858
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DOSE CALCULATIONS FOR AIRNET INVESTIGATION LEVELS

As described in ESH-17:99-267, "Evaluation of Outlier Tests for AIRNET Data" ESH-17 has recalculated its AIRNET Investigation Action Levels. These investigation levels will be used to identify statistically significant increases in ambient air concentrations in the vicinity of the Laboratory. To insure that these levels are sufficiently low, we calculated the maximum dose that an individual could receive before triggering an investigation level. The calculated investigation air concentrations for each station (Table 1) were converted to an annual effective dose equivalent using the environmental concentrations in Table 2 of Appendix E to 40 CFR 61. These data are presented in Table 2 of the attachment. Also, documented peer review and hand-calculations are included. With the exception of some on-site and waste-site stations, the investigation levels are set sufficiently low to ensure that no one could receive a dose of more than 0.1 mrem. The results by station and isotopes are discussed below.

FFCA and CCNS Stations

The results for all the FFCA and CCNS stations and isotopes were similar. All investigate air concentration values are less than the 0.1 mrem level that was desired.

Perimeter Stations

The results for all the perimeter stations, including the FFCA stations, were similar. All investigate concentration values are less than the 0.1 mrem level that was desired.

Onsite Stations

These stations include all stations that are located on Laboratory property, with the exception of the Area G station, which will be discussed later. All TA-15 stations' investigate air concentration values are less than the 0.1 mrem level that was desired.

In the TA-21 stations, station 72 is higher than the 0.1 mrem level, with an investigate air concentration value of 0.116 mrem for ^{239}Pu . Station 73 has high values as well in ^3H , ^{241}Am , and ^{239}Pu (0.191, 0.181, 0.261 mrem respectively). Stations 74 and 75 have higher values as well in ^3H (0.114 and 0.137 mrem respectively), with station 74 also having a higher value in ^{239}Pu (0.189 mrem).

All of the other on-site stations were under the 0.1 mrem level, with the exception of ^3H for stations 25 and 31 (1.093 and 0.128 mrem respectively).

Area G Stations

Only one station in Area G went over the desired 0.1 mrem standard, which was station 47. It was high for ^{241}Am and ^{239}Pu (0.112 and 0.152 mrem respectively). The rest of the stations were below the 0.1 mrem level.

Regional and Pueblo Stations

All of the regional and pueblo stations, including the CCNS stations, were well below the desired 0.1 mrem level.

DJD/ln

Att: a/s

Distribution:

Doug Stavert, ESH-17, J978

Jean Dewart, ESH-17, J978

Craig Eberhart, ESH-17, J978

Keith Jacobson, ESH-17, J978

Ernie Gladney, ESH-17, J978

Dave Kraig, ESH-17, J978

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