



**AEA Technology
QSA Inc.**

40 North Avenue

Burlington, MA 01803

Telephone (781) 272-2000

Telephone (800) 815-1383

Facsimile (781) 273-2216

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Mr. Lonnie Ekeren
Body Shop Manager
Mid-America Peterbilt
1 North Central Drive
O'Fallon, Missouri 63366

Mr. Ekeren:

Po-210 decays to stable Pb-206 almost entirely by the emission of a 5.305 MeV alpha particle. Because alpha particles have a short range and will not make it through the dead layer of skin, Po-210 presents very little, if any, health hazard when external to the body. Therefore, the main concern about this source would be inhalation or ingestion of the source. The model PDV1420 is a foil source that has an ANSI rating of C34444 and is registered with the Commonwealth of Massachusetts, registration number MA-1059-D-333-B. A stainless steel housing encases these foils. Therefore, these sources have passed temperature tests from -40 degrees Celsius to 180 degrees Celsius, impacts of 2 kg from 1 meter and a puncture of 50 g from 1 meter.

Amersham International contracted with the British National Radiological Protection Board to assess the consequences of fires involving Po-210. B. T. Wilkins and D. W. Dixon report the results in a June 1981 document. They determined that the total amount of airborne activity during a 600 degree Celsius fire is less than one percent of the ALI for a 50 mCi source. The intake of a person 100 meters downwind from the 800 degree Celsius fire could be about one percent of the ALI depending on the prevailing weather conditions for a 50 mCi source. They also determined that in order to reach the ALI for ingestion, a person would have to ingest all activity found in approximately a 60 cm² area of debris that occurs from a 800 degree Celsius fire. They decided that this is not very likely and did not consider it any further in their report. Since the source that is missing has less than 10% of the activity assessed in the report, it is very unlikely that any individual would receive an inhalation equal to the ALI from this source.

If you have any questions regarding this letter or require additional information, please contact me at (781) 272-2000 ext. 236 or Jeanne Price at ext. 270.

Sincerely,

Christy L. Paquin
Health Physicist