



*Founded by Joy Morton, 1922*

September 20, 1974

Dr. Frank R. Markwell  
Materials Branch  
Directorate of Licensing  
United States Atomic Energy Commission  
Washington, D. C.

Dear Dr. Markwell:

The following information is in response to control number 51035 dated September 5, 1974. Each item is numbered according to the sequence in that correspondence.

1. Dr. A. Steven Messenger, the designated user, has a Ph. D. in soil science. He was instructed in radiation safety procedures during his affiliation with Argonne National Laboratory from 1967-71. He has been using a Nuclear-Chicago depth moisture gauge for the past four years and is therefore familiar with the safety precautions necessary for the use of that and similar instruments, such as the Troxler instrument. The instruction manual supplied by Troxler explains the idiosyncrasies of that particular instrument. The source probe is very similar in design to that of the Nuclear-Chicago instrument used previously.
2. The radiation protection program will consist of: (A) keeping the source within the protective shield when not being used; surface radiation is no greater than 1 millirem under those conditions; (B) when using, sliding the 100 mCi Americium-Beryllium source probe directly from the shield into access tubes extending into the soil thus involving minimal human exposure; (C) storage of shielded source in large safe which will only be opened under the supervision of the designated user or someone instructed by him as to the proper safety precautions.
3. A statement from Troxler is attached to verify that Film badges are not required.

Dr. Frank R. Markwell

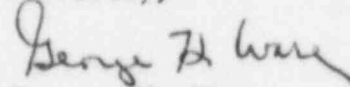
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4. The Arboretum has ordered a Troxler RK-1 leak test kit which will be used for taking samples that will be sent to Troxler for analysis.

5. The initial radiation survey will be made by the designated user with a counter borrowed from the Radiation Safety Committee at Northern Illinois University, the designated user's principal employer. Servicing, repair and maintenance other than scaler battery recharging will be performed by Troxler. Should the source probe become irreparably damaged it will be shipped to Troxler where burial arrangements will be made. If the instrument is intact and no longer needed by the Arboretum it will be donated to a university which has an AEC Byproduct Material License.

Sincerely,



George H. Ware  
Ecologist-Dendrologist  
Coordinator of Research

GHW:ag