



## *The Connecticut Agricultural Experiment Station*

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*Putting science to work for society*

August 9, 2011

Betsy Ullrich  
Nuclear Materials Branch 2  
Division of Nuclear Materials Safety  
U.S. Nuclear Regulatory Commission  
Region 1  
475 Allendale Road  
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REGION 1  
2011 AUG 12 PM 12:37

SUBJECT: Response to request for additional information concerning application for renewal of license, Control no. 575193.

Dear Ms. Ullrich,

The following additional information is provided based on a telephone conversation with an NRC official yesterday.

### Survey Procedures.

Use of H-3 and C-14 is allowed with the proviso that all operations are conducted in a designated area and on benches covered with absorbent material. Latex gloves are to be worn at all times. Wipe tests of exposed benches and sinks are performed monthly and the results are forwarded to and filed by the Radiation Safety Officer (RSO). In the rare event that a significantly above background wipe test result should occur, the affected area is decontaminated and re-tested until background radiation readings are obtained. If use of these radioisotopes is discontinued in a particular area absorbent mats are properly disposed of and a final wipe test survey is performed and submitted to the RSO. Wipe testing need not be repeated unless radioisotope use is re-initiated in a particular area. In the rare instances that S-35 is employed survey procedures described for H-3 and C-14 apply.

A facility has been created in a fume hood in Room 121 of the Johnson-Horsfall Laboratory for use of P-32. General laboratory instructions have been posted at this location. They specify that users are to wear gloves and secure radioactive material when not under direct surveillance and control. Personnel are required to wear whole body monitoring badges while using P-32. Films from badges are collected by the RSO monthly for evaluation by a commercial service. Film badge reports are kept on file by the RSO. A survey of bench surfaces is conducted after each use usually using a Geiger counter but wipe testing is also permissible. Before leaving the area hands and fingers are monitored for contamination. Users record their survey activities and results in a notebook kept at this site which is periodically reviewed by the RSO and NRC inspectors.

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575193  
NMSS/RGN1 MATERIALS-002

### Lockwood Farm

The Connecticut Agricultural Experiment Station (CAES) maintains a fenced-in 75-acre experimental farm (Lockwood Farm) in Hamden, Connecticut about seven miles from the main laboratories in New Haven. This facility is listed as a site for use and storage of C-14 on the current NRC license. We wish to continue this status in the renewed license.

The nature of C-14 use at Lockwood Farm was described in a letter to NRC dated December 7, 1984. The letter summarized activities as:

1. Lockwood Farm is the only CAES field site where release of C-14 would occur.
2. Prior work with enclosed soybean leaves involved about 10 exposures to 10-microCurie amounts of  $^{14}\text{CO}_2$  of which none was released to the environment. Over a 2-year period wheat plants enclosed in chambers were exposed to 10-20 microCuries of  $^{14}\text{CO}_2$  for about one minute. Approximately 80% of the  $^{14}\text{CO}_2$  was consumed by the plants during 5-10 minutes and the remainder was released to the atmosphere. About 10 such experiments were conducted per year. Hence, about 2 microCuries were released in each experiment. Field plots employing C-14 were fenced to exclude personnel not directly involved in the experiments.
3. Radioactively labeled plant material was processed in the laboratory under safeguards that existed at that time.

The above description is a reasonable estimate of the type of activity that could occur at Lockwood Farm in the future involving radioisotopes. It is important to note that no use of radioisotopes has occurred at Lockwood Farm since the mid-1980s. No plans currently exist for use of radioisotopes at this facility. Nevertheless, Lockwood Farm remains as the primary site of field work for CAES, an institution specializing in agricultural research. Its large area and controlled access are compatible with the safe use of C-14 in field experiments should the need arise in the future. If conditions and circumstances involving use of C-14 were to diverge significantly from that described above we would first discuss our plans with NRC.

### Valley Laboratory

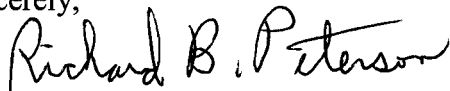
Another CAES site for radioisotope use listed on the current license is the Valley Laboratory located in Windsor, Connecticut (about sixty miles from New Haven). Neither I (current RSO) nor the previous CAES RSO is aware of any radioisotope use at this facility in the past. The current top administrator (Chief Scientist) at the Valley Laboratory has been contacted regarding inclusion of this site on the renewed NRC license. He too is unaware of any past radioisotope use there. A poll of his staff confirms this situation. Thus, we have no indication that radioisotopes are stored there or have been used there in the past. There are no plans for such use at this site for the future. It is likely that one scientist (now retired, yet active), who contemplated radioisotope use in the distant past, requested inclusion of the Valley Laboratory as a CAES radioisotope use site on a previous NRC license. This individual confirms that plans for use of radioisotopes were never implemented. I therefore request that the Valley Laboratory be released as a radioisotope use site and also NOT be included as a site on the renewed license.

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I believe that this addresses all outstanding issues presented to me regarding our application for renewal. I would be happy to provide any additional information required to complete the renewal process.

Sincerely,



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