

PDR 70-824

Babcock & Wilcox



Research and Development Division

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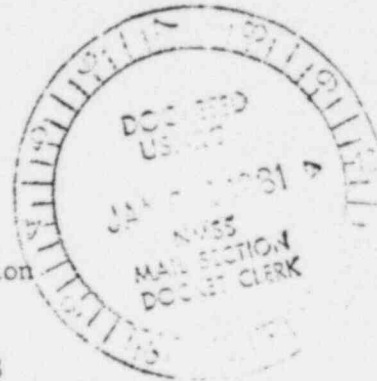
November 26, 1980

U.S. N.R.C.
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RECEIVED

Mr. R. G. Page, Acting Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety
N. M. S. S.
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



License: SNM-778
Subject: Soil Decontamination

In January, 1969 contaminated water was discovered in a storm sewer at the Lynchburg Research Center. An investigation revealed that a water pipe, which carried contaminated liquid from a demineralizer used in connection with the Babcock & Wilcox Test Reactor to the Liquid Waste Disposal Facility, had burst. The contaminated water leaked into the sewer line which emptied down the hillside behind Building J (solid waste storage building). The original estimate of the activity involved was 200 millicuries of Co-60. This was later revised to 300 millicuries. Surveys at the time indicated that the contamination was confined to the soil of the water drainage area on the hillside and to a marshy area at the base of the hill. A fence was constructed around the contaminated area and appropriate signs displayed to meet the requirement of a restricted area. This information was reported to the U. S. Atomic Energy Commission by letter from William M. Breazeale, Director, dated January 30, 1969, License TR-4, docket 50-200.

In 1978 it was decided to evaluate the condition of the area. To accomplish this it was necessary to dry the area. A pond was dug in an area to the east of the marshy area and the storm sewer flow was diverted from the hillside to the pond. The summer of 1980 was exceptionally dry in this section of Virginia and the hillside and marshy area dried out. Soil samples were taken and analyzed and radiation measurements were made. They confirmed that the restricted area boundary was properly located on the south, east and west sides. The north boundary was adjacent to the Chessie System Railroad right-of-way. Radiation measurements made along the north boundary fence varied from 0.3mR/hr to 1.0mR/hr. Soil samples indicated that approximately 4 millicuries of Co-60 was located immediately outside the boundary fence on approximately 800 square feet of soil.

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A new fence was erected and appropriate signs displayed to extend the restricted area to encompass the area containing the Co-60 and to maintain the radiation level at the new boundary below 0.5mR/hr.

The railroad right-of-way is owned by the Chessie System. I have contacted this company and have received their permission to take the necessary action to return this portion of their property to an unrestricted area.

The soil samples indicate that the activity is located in the top 1/2 inch. The Lynchburg Research Center (LRC) is planning to remove the top two (2) inches of soil over the affected area. The work will be performed by LRC employees under the supervision of Health Physics in accordance with written procedures. The workers will be provided with protective clothing and monitoring devices as specified in license SNM-778. Health Physics shall perform direct radiation surveys, smear surveys and sample for airborne activity to assure the worker protection and prevent a spread of contamination. Due to the relatively small area to be decontaminated, it is anticipated that the work can be accomplished with hand tools, however, the use of mechanized equipment may be needed and is not excluded. The contaminated soil will be placed in DOT specification containers suitable for off-site shipment. These containers will be stored in accordance with the license, prior to shipment.

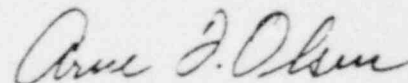
In speaking with Dr. Shum of your staff I understand that an acceptable criteria for releasing this area for unrestricted use has been established. This criteria for Co-60 is 10 μ R/hr at one (1) meter above background, average and 20 μ R/hr at one (1) meter above background, maximum. It is the intent of the LRC to meet this criteria by performing the work described above. To assure that the LRC is working to achieve levels of activity that are acceptable to you and Region II, I request that you concur in writing to the criteria previously stated.

In my conversations with members of the Region II staff I have found that they are desirous that this cleanup proceed smoothly and expeditiously. They have asked to be kept informed of our progress and that I assure that all parties involved, be in agreement with the levels of radioactivity to be achieved by the cleanup. I agree with the Region.

I am awaiting your early concurrence. If you have any questions concerning this matter please call me.

Yours very truly,

BABCOCK & WILCOX COMPANY
LYNCHBURG RESEARCH CENTER



Arne F. Olsen
License Administrator

POOR ORIGINAL

AFO:ccf

cc: Director, Region II

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