

Westinghouse
Hanford Company

From: Engineering & Environmental Demonstration Laboratory Unit 90P020.BBE
 Phone: 3-4927 1722K/1/100K X3-70
 Date: March 30, 1990
 Subject: 1706-KE WASTE TREATMENT SYSTEM TANK

To: L. A. Garner B2-19
 cc: M. J. Schliebe S4-25 D. J. Watson X0-41
 J. P. Sloughter T6-07 BBE: File/LB

In accordance with our conversation concerning the 600 gallon stainless steel tank which was used as a feed tank to the 1706-KE Waste Treatment System, I would like to request your concurrence to treat the tank as a non-hazardous container.

The tank is presently full and must be drained so that we can continue a test in progress and the disposal of archived samples from the N Reactor Liquid Effluent Treatment Facility (LETF) development program.

Due to the allegations that the system was used to treat hazardous wastes, there is some question in my mind as to its current status. I feel that the subsequent history of the tank should have rendered it clean, but I am unsure of the regulatory situation with regard to reuse of a container which allegedly held hazardous waste.

After the IVRS was abandoned in September, 1986, the tank was disconnected from the system and until July, 1987 was used as a storage and treatment facility for non-hazardous radioactive liquid wastes. This material consisted mainly of synthetic N Reactor primary loop and basin water and smaller amounts of dilute LOMI decontamination solution. An ion exchange column was connected to the tank and the contents recirculated until a gamma spectrographic analysis of the water determined that it was below Table II limits. With N Reactor Radiological Safety approval, it was then drained to the K Area flume. It is estimated that about 600-800 gallons of water were treated in this fashion.

In July, 1987 the tank was emptied and cleaned so that it could be used as the feed tank for the LETF studies. To insure there would be no contamination of the feed stock, the tank was physically cleaned and decontaminated with scrub brushes and detergents. It was then filled with demineralized water to which trace amounts of cesium and iodine were added to simulate N crib water. This water was processed through candidate ion exchange resins to evaluate them for use in the LETF. The effluent water from these tests was stored in drums, analyzed and released. At least 10 tanks full were processed in this fashion between July, 1987 and February, 1988 when the testing ceased.

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From early 1988 to the present the TF-9 high pressure test loop was operated to perform long term corrosion tests in support of the N Reactor tritium fuel cladding program. Since the test coupons were made of a uranium-zirconium alloy, all loop bleeds and effluents were collected in the 600 gallon tank for analysis and treatment. The loop water consists of demineralized water with ammonium hydroxide added, to a pH of 10.3. In addition to the above, a small quantity of LOMI solution, some ammonium citrate and N crib water were also added as part of the lab cleanup.

The tank has been recirculated through the ion exchange column and analyzed for radionuclide content. It is currently below uncontrolled release limits. Radiological Safety will be asked for a formal determination prior to releasing the contents.



Blair B. Emory, Acting Manager
Engineering & Environmental Demonstration
Laboratory Unit

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