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Solid Waste*

# Inter-Office Memorandum

Date August 1, 1979



Subject RADIAC WASH SOLIDIFICATION TEST  
USING CEMENT (HITTMAN)

To MR. J. A. RENSHAW

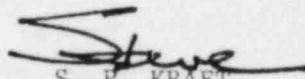
Location Three Mile Island  
Waste Management Activity

On Friday, July 20, 1979, Hittman prepared a 55-gallon drum for the purpose of testing the ability of the Hittman cement system's process to solidify the Radiac Wash currently being used to decontaminate the auxiliary building. The test was performed in accordance with the specification established for these tests as follows:

- (1) Simulated waste:
  - (a) 10 gallons 1.5% by weight boric acid.
  - (b) 10 gallons Radiac Wash as received.
  - (c) 8.5 gallons of dirt (30% by volume suspension).
- (2) Solidification materials:
  - (a) 225 pounds cement.
  - (b) 22 pounds anhydrous sodium metasilicate (Metso Beads).
  - (c) 25 ml antifoam.
- (3) Procedures:
  - (a) The simulated waste was preloaded and mixed with the in-liner mixer.
  - (b) The cement, Metso Beads, and antifoam were manually loaded while the mixer was turning. It should be noted the standard Hittman system utilizes a large liner with an in-liner mixer fed remotely. The manually loaded 55-gallon drum system was developed solely for the purposes of demonstrating the Hittman process.
  - (c) As stated in the Hittman test scheduling memo of July 19, 1979, (S. P. Kraft to J. A. Renshaw), we accommodated Hittman's request to hold the first part of the test run (mixing) at their facility in Columbia, Maryland. However, in order to simulate conditions at the TMI site, it was agreed we could somehow disrupt the process at an arbitrary point. Therefore, during the mixing of the cement and Metso Beads with the waste, the mixing motor was arbitrarily halted while waste addition continued. This condition was held for 15 minutes at which time the mixing motor was restarted.
- (4) Results: On Monday, July 23, 1979, the drum and contents were inspected.

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- (a) An opening was cut in the side of the drum near the bottom; no water drained out.
  - (b) The drum cover was removed revealing a thin layer of water. This was poured off into a container and estimated to be about 3 ounces.
  - (c) The drum was removed and the solidified mass broken up revealing it to be completely homogeneous (by visual inspection) and without any additional water.
- (5) Conclusions:
- (a) The three ounces of water poured off the top of the mass is believed to have been due to condensation within the drum as a result of prematurely (as compared to Hittman procedure) closing the drum in order to bring it back to TMI.
  - (b) The process used by the Hittman system is acceptable as a solidification agent for disposal of the Radiac Wash currently being used for decontamination of the auxiliary building.
  - (c) Further testing will be required to verify that the specific system design which would be used by Hittman could produce similarly acceptable results. However, this should not be difficult to accomplish and can, therefore, be done if Hittman is the successful bidder.

  
S. P. KRAFT

tas

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