

January 4, 1993



Ms. Marcy G. Garnett, P.E.
Office of Water Programs
Department of Health
5700 Thurston Avenue, Suite 203
Virginia Beach, VA 23455

RE: SURRY POWER STATION - SLUDGE DISPOSAL PLAN

Dear Ms. Garnett:

By Mr. Bennett K. Ragnauth's letter of October 2, 1991, it was indicated that the proposed sludge management plan for the Surry Power Station STP could not be approved until results from the Paint Filter Liquids Test on the sludge are received. The Paint Filter Liquids Test is required by the Department of Waste Management for sludge intended for disposal at the landfill. Until recently, no dried sludge produced at the facility was available to conduct this test.

As indicated in the previously proposed plan, landfill disposal of dried sludge from the drying beds is an alternative disposal method. Since the primary method of disposal was pumping and hauling of the liquid sludge, dried sludge was not available for testing. Rather than have approval of the plan delayed until dried sludge may be available, we had proposed to incorporate the requirement for the Paint Filter Liquids Test into the plan for our alternative disposal method.

Since our earlier communications with your office following Mr. Ragnauth's letter on this issue, the drying beds at the STP have been used and the sludge tested by the required method. Results of the Paint Filter Liquids Test, Method 9095, were that the sludge contains no free liquids.

Enclosed is a revision of the Sludge Disposal Plan for the Surry Power Station Sewage Treatment Plant which incorporates the filter test and requires satisfaction of Department of Waste Management criteria prior to landfill disposal of dried sludge, should this alternative method become necessary. Also, due to the necessity to maintain controls mandated by the Nuclear Regulatory Commission, this revision of the disposal plan incorporates yet another disposal alternative which, if analysis so indicates, must supersede the preferred sludge disposal methods included in the plan.

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Ms. Marcy G. Garnett, P.E.
January 4, 1993
Page 2

Should you need additional information or have any questions,
please contact Daniel James at (804) 273-2996.

Sincerely,



B. M. Marshall, P.E.
Manager
Water Quality

cc: (w/attachment)
Mr. Terry D. Lewis
County Administrator
Surry County
P. O. Box 65
Surry, VA 23883

Mr. Harold J. Winer
Virginia Beach Regional Office
Department of Waste Management
5700 Thurston Ave., Suite 203
Virginia Beach, VA 23455

Mr. Ray Jenkins
Piedmont Regional Office
Virginia Water Control Board
P. O. Box 11143
Richmond, VA 23230

U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, GA 30323
Re: Surry Units 1 & 2
Docket Nos. 50-280/50-281
License Nos. DPR-32/DPR-37

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
Re: Surry Units 1 & 2
Docket Nos. 50-280/50-281
License Nos. DPR-32/DPR-37

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

SLUDGE DISPOSAL PLAN FOR SURRY POWER STATION SEWAGE TREATMENT PLANT

General Description

Surry Power Station is served by an extended aeration package sewage treatment plant having a capacity of 50,000 gpd. An expansion of the treatment facility to a capacity of 85,000 gpd was completed in 1988. Additional modifications to include the addition of a flow control box and tablet chlorination system have also been completed. Plans and specifications for this work were approved by the Virginia Department of Health and Virginia Water Control Board by letters of February 16 and April 5, 1990, respectively.

Aerated Sludge Holding Tanks

Each of the two original sludge holding tanks has a capacity of approximately 3,500 gallons of sludge. The plant expansion included a new sludge holding tank with a capacity of approximately 9,000 gallons of sludge. Sludge is aerated by diffused air supplied by an air drop pipe and two diffusers in each tank.

Quantity and Quality of Sludge

Approximately once per week, sludge is wasted to the aerated sludge holding tanks. The volume of sludge wasted ranges from 1,000 - 5,000 gallons per week. The sludge holding tanks also receive an undetermined flow from infiltration. Visual inspection and internal process monitoring by the operator will determine when wasting must be accomplished.

Samples of sludge were taken from the drying beds during the summer of 1986 and analyzed by Environmental Laboratories, Inc. The results of the analyses are included in Appendix A. On October 15, 1992, dried sludge from the drying beds was analyzed by the Paint Filter Liquids Test, Method 9095 (attached as Appendix B), which resulted in no material collected in the graduated cylinder. The sample contained no free liquids. Based on this testing and the nature of the activities at Surry Power Station, the characteristics of the sludge should satisfy the requirements of class "A" sludge as defined in the Commonwealth of Virginia Sewerage Regulations.

Sludge Removal and Handling

Prior to disposal of either liquid or dried sludge, the waste will be analyzed to determine if it is free of radioactive material. Waste sludge containing radioactive material will be handled and disposed of under the regulatory control of the Nuclear Regulatory Commission at an out of state licensed radioactive waste disposal facility. The NRC requirements are inherently more strict than those for handling and disposal of conventional sewage sludges and should provide assurances to the Virginia agencies that such sludge would be properly disposed without detrimental impacts to human health or the environment.

For sludge with no radioactive contamination, two options exist for sludge disposal. The primary method of sludge wasting is by pumping and hauling for off-site disposal. Sludge is pumped into an 1,800 gallon tank truck complete with baffled compartments and transported directly from the station in Surry County (via Route 10) to the Whitfield Pumping Service site at Windsor, Virginia (via Highway 600). Approximately 9,000 gallons per week are removed in this manner. Absorbent material is maintained on the truck to use for leak/spill containment if necessary while in route. No treatment is provided during transportation and a map showing the delivery route is attached.

During the transfer of sludge from the holding tank, special care is taken to ensure that an overflow does not occur. A full-time, on-site operator is dedicated to the STP with the requirements that all pump and haul activities be coordinated through him and subject to his approval and immediate oversight. In the unlikely event of an on-site spill, the station is prepared to provide localized containment and disinfection using absorbent material and liquid hypochlorite.

Only those licensed pump and haul vendors and associated off-site treatment facilities approved by the state will be utilized. The vendor shall be responsible for obtaining all the necessary sludge handling and disposal permits, and providing verification of such permits to the on-site operator. The existing contractual arrangement (attached) is with Whitfield Pumping Service (License #146-001), which disposes of the sludge in an approved lagoon owned and operated by them at Windsor, Virginia.

Alternatively, sludge would be pumped from the sludge holding tanks to the three sludge drying beds. Two of these beds were constructed as part the original plant with each measuring approximately 22 feet by 21 feet. The additional sludge drying bed, completed in 1988, measures approximately 27 feet by 21 feet. The exact day of sludge wasting will be noted in plant records for examination by the Department of Health and the Virginia Water Control Board and shall be available for examination by the County also.

Under the second option listed above, the dried sludge (having a solids content of at least 20%) will be raked off one bed approximately twice a year for disposal. The quantity of dried sludge generated from a single bed is estimated to be 20 cubic feet. Prior to all deliveries of dried sludge to the Surry County landfill, a Paint Filter Liquids Test and a radioactivity test will be conducted on the sludge and test results compared against the appropriate criteria to ensure acceptability for landfill disposal. The test results will be conveyed to the County Administrator well in advance of the actual shipment of sludge. The sludge shall be placed in extra strength plastic bags and the bags shall be transported to the landfill sealed and unruptured with other trash from Surry Power Station in amounts sufficient to ensure compliance with the guideline of the Department of Waste Management that a ratio of 6 parts trash to 1 part sludge be maintained. Upon arrival at the landfill, Surry Power Station personnel shall open the bags in the presence of Surry County personnel and disperse the

sludge upon the other trash transported with the sludge. The following route will be followed to the landfill: Route 650 for 4.5 miles to Route 617; Route 617 for 1.3 miles to Route 10 for 9.3 miles to Route 660; Route 660 for 1.1 miles to the landfill. The County Administrator will be notified by personnel at Surry Power Station in advance of projected shipment dates of sludge to the landfill.

Periodically, sludge from the facility will be analyzed by the Toxicity Characteristic Leaching Procedure, as required by Hazardous Waste Management Regulations, to provide assurances that the material is not hazardous. Should the tests reveal that the sludge is hazardous as defined by the Virginia Department of Waste Management/U. S. Environmental Protection Agency or radioactive as defined by the U. S. Nuclear Regulatory Commission, the sludge will be handled and disposed of at a site approved by the U. S. Environmental Protection Agency or the U. S. Nuclear Regulatory Commission. There are no approved disposal sites located in Virginia.