



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

January 8, 2010

Ms. Saya Qualls, P.E.  
Division of Water Pollution Control  
Tennessee Department of Environment and Conservation  
6th Floor - L&C Annex  
401 Church Street  
Nashville, Tennessee 37243-0437

Mr. Rick Brown, Engineer  
Knoxville Environmental Field Office  
Division of Solid Waste  
Tennessee Department of Environment and Conservation  
3711 Middlebrook Pike  
Knoxville, Tennessee 37921

Dear Ms. Qualls/Mr. Brown:

TENNESSEE VALLEY AUTHORITY (TVA) - KINGSTON FOSSIL PLANT (KIF) - NPDES PERMIT NO. TN00808070-NOTICE OF VIOLATION (NOV) RESPONSE

GYPNUM DISPOSAL FACILITY – IDL 73-0211 – REQUEST FOR MINOR PERMIT MODIFICATION – STORM WATER DETENTION POND LINER

Enclosed are two sets of documents, the Storm Water Pond Leakage Evaluation and the memorandum for the Storm Water Detention Pond Liner Design. These documents are being submitted to both the Division of Water Pollution Control (DWPC) and the Division of Solid Waste (DSW) for each division's review and approval. The attached leakage report and subsequent liner design were prepared by Geosyntec, Inc. in response to the KIF Flue Gas Desulfurization (FGD) Storm Water Pond noted water level decrease reported to the Tennessee Department of Environment and Conservation (TDEC) on November 20, 2009 via e-mail. A NOV was issued by TDEC on November 25, 2009, which required the following actions.

"TVA must conduct further subsurface investigations to identify the cause of the seepage and to develop appropriate corrective actions. The results of the investigation and the proposed remediation must be submitted to TDEC for approval prior to installation of any mitigation measures."

Geosyntec recently completed the leakage evaluation of the Storm Water Pond. This pond is the final sediment pond which receives pumped effluent from the main gypsum disposal area, as well as local storm water runoff. The evaluation concluded that there was no evidence of physical features anywhere along the interior or exterior of the storm water pond dike or bottom that would be expected in the presence of a discrete opening. Structural integrity of the storm water pond dike is not of concern based on QA/QC documentation (density testing) from MACTEC. Results of soil permeability testing and exploratory excavations indicate that the storm water pond bottom includes low permeability clay soils at thicknesses exceeding two feet. Geosyntec recommended that

mitigation should be targeted towards minimizing hydraulic loading on soils beneath the storm water pond using an impermeable barrier. This can be accomplished using a geomembrane liner.

Although there was not a direct determination of the observed leakage losses, TVA is proposing to install a geomembrane liner as the most proactive and protective measure to prevent future potential water loss to groundwater. This request is to allow the installation of a 60-mil textured high density polyethylene (HDPE) geomembrane within the storm water pond according to the enclosed technical design package. The design package consists of a technical memorandum, drawings, specifications and supporting technical calculations.

Both divisions (DWPC and DSW) of TDEC are requested to review the leakage evaluation report and approve the mitigation method and design. If a consensus is reached between the divisions that the mitigation design is appropriate, DWPC is requested to so specify in a letter to TVA while DSW is requested to approve a minor modification to the previously issued permit in accordance with Chapter 1200-1-7 of the Department's Rules for Solid Waste Processing and Disposal Facilities.

Please find a copy of the Storm Water Pond Leakage Evaluation report for your review and a copy of the storm water liner pond design package for your approval. Additional copies of both documents will be included for distribution as required by both divisions

TVA has begun restoring the storm water pond bottom to its original design condition in preparation of the liner installation. Furthermore, TVA will continue to prohibit any discharge from the FGD disposal area pond into the FGD storm water pond until all mitigation measures are approved and implemented. After the DSW approval of the recently submitted QA/QC package for the FGD (Gypsum) disposal area pond has been received, TVA will place gypsum in this pond when the KIF generating units are required to run for system reliability.

TVA requests approval of the above minor modification for the Kingston Fossil Plant Gypsum Disposal Facility in a timely manner. If you have any questions or need further clarification, please do not hesitate to contact John E. Dizer, P.E., at (423) 751-7636 or by e-mail at [jedizer@tva.gov](mailto:jedizer@tva.gov) in Chattanooga.

Sincerely,



Cynthia M. Anderson  
Manager of Regulatory Interface  
5D Lookout Place

Enclosures

cc: Mr. Glen Pugh (w/o Enclosures)  
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