Description of Principle Design features

The proposed design is depicted on TVA drawings 10W425-81 thru 10W425-92 which are listed in Appendix D and are included as part of this minor modification request.

The drawings depict the installation of a 6 ft deep trench drain in the 795 bench, 5 ft deep trenches on the 781 and 775 benches; and a buttress toe drain and a riprap channel at the toe drain. The trench drains will outlet into the existing perimeter bench drains on 200 ft intervals. Each trench drain is constructed in a 1.5 ft wide trench, 6-inch diameter perforated tubing surrounded by an open graded limestone in a filter fabric envelope. A toe buttress and riprap channel will form the drainage ditch along Swan Pond Road. A high point will be in the ditch near Swan Pond Road at a point approx 400 ft north of the intersection with the plant access road. From that point north the runoff and leachate collected will drain into a new sump pond. South of the high point the ditch will drain south and then east to the ash pond.

The new sump pond will be pumped to the ash pond. This pond is sized to contain a 25 year storm event. Emergency overflow from the pond is to the Swan Pond Embayment. The pond will be surrounded with a chain link fence. The pumps will be electric powered.

Output from the TIMES model was used to size the trench drains and in the hydraulic analysis of the sump pond. The Seep/W model confirmed the adequacy of the proposed design.

The riprap lined ditch and toe buttress is detailed on 10W425-91. All construction work will be behind the guardrail along Swan Pond Road.

Work is scheduled to begin June 1st, pending TDEC approval of the minor modification and storm water permit requests. There is a need to perform this work in the dry summer months to facilitate construction. In addition there is a need to return to dredging in these cells to maintain the NPDES permit required Free Water Volume (FWV) in the main ash pond.