TMDL Implementation Plan for Nottely River, Downstream of Lake Nottely -- Dissolved Oxygen

Introduction

The portion of the Nottely River downstream of the dam for Nottely Lake, is located near Ivy Log in Union County, a few miles northwest of Blairsville, Georgia. The Nottely Lake dam is operated by the Tennessee Valley Authority (TVA). Reservoir water flows through the turbine generators in the dam to produce hydroelectric power. The water that for such use is taken from the lower (hypolimnion) zone of the Reservoir where the water is naturally lower in dissolved oxygen (D.O.).

Plan for Implementation of the TMDL

The TMDL for this and seven other low D.O. river segments below dams, was finalized in November, 2000. The designated use for the Nottely River downstream of the dam is for recreation. The applicable water quality standards there for D.O. are a concentration of 5 milligrams per liter (mg/l) as a daily average and a concentration of 4 mg/l as a minimum value. Attainment and maintenance of these two D.O. water quality standards are the goals of this Implementation Plan.

The TMDL recommends that the appropriate federal and state agencies work together in developing an implementation strategy to provide higher oxygenated water from these dam releases. The TMDL adds that these strategies may include oxygenation or aeration of the water, redesigned spillways, or other measures, and that ongoing water quality monitoring is needed to monitor progress.

The TVA has added compressors and blowers to add air to the water going through the turbines, when D.O. decreases and approaches the water quality standard of 4 mg/l. The Lake Nottely Dam also has cascade structures to provide more air exposure to water passing through it so that D.O. in the water is enhanced. TVA believes that these systems are sufficient to meet D.O. water quality standards.

EPD will work with EPA to set up periodic meetings with TVA on this and the other TMDL segments where river segments below TVA dams are not meeting water quality standards for D.O. This is the approach recommended in the TMDL. The purpose of this process is to seek to reach agreement on possible improvements in how the in-place D.O. systems are operated, until water quality standards for D.O. are met.

A summary of the Implementation Plan is as follows.

A. Source categories, subcategories, or individual sources which must be controlled to implement the load allocations: Dam immediately upgradient.

B. Description of regulatory or voluntary actions, intended to achieve reductions: Continued monitoring at same locations, plus work with TVA and EPA to develop possible improved operation of D.O. enhancement systems in place.

C. Description of regulatory or voluntary actions, including management measures or other controls, by governments or individuals, that provide reasonable assurance that reductions will be achieved to meet water quality standards: See previous response. D.O. system operation must have target of full compliance with D.O. water quality standards.

D. Schedule for implementing the management measures or other control actions as expeditiously as practicable: Will set up first meeting with EPA and TVA as soon as feasible, and seek to obtain agreement on an implementation schedule as expeditiously as practicable.

E. Projected attainment date and basis for it: The projected attainment date is on or before 2006, for this Implementation Plan.

F. Measurable milestones for determining whether management measures or other control actions are being implemented:

Periodic re-evaluation of D.O. data will be undertaken, to confirm or refine the projections. If an agreement is reached with the TVA on a schedule, that schedule will include appropriate milestones.

G. Monitoring or modeling plan designed to measure the effectiveness of the management measures or other controls, the progress the water body is making toward attainment, and a process for implementing stronger and more effective management measures if necessary: Periodic monitoring will be conducted using the same methodology and analytical approach as before. Possible improvements in operation of the D.O. system is believed to be the most effective and feasible approach for this dam.

H. The criteria to determine whether substantial progress toward attainment is being made, and if not, whether the TMDL needs to be revised: The criteria are the in-stream D.O. analyses, from samples taken at the same locations as for data collected in the past. If compliance is not achieved after the D.O. systems are operating optimally, the Implementation Plan will be revised as appropriate, based on facts known at that time.

I. Goal of attaining and maintaining the applicable water quality standards within 10 years, where that is practicable: That should be accomplished, for this segment.