Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

September 29, 2004

State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control
Natural Resources Section
6th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1534

Attention: Natural Resources Section

SEQUOYAH NUCLEAR PLANT – APPLICATION FOR AQUATIC RESOURCE ALTERATION PERMIT – GENERAL PERMIT FOR MAINTENANCE ACTIVITIES

Description of the Proposed Project

On April 7, 2004, Sequoyah (SQN) personnel performing routine NPDES compliance sampling noticed diversionary flow in the Tennessee River. It was later determined that the diversionary flow was caused by an unforeseeable breech of one of the diffuser pipe manholes (man ways). [Reference April 12, 2004 letter on Sequoyah Nuclear Plant – Diffuser Line Manhole Breach to Mr. Paul E. Davis from Stephanie A. Howard]

Liquid effluent from SQN flows into the Tennessee River from the Diffuser Pond through a system of diffuser pipes located at Tennessee River Mile (TRM) 483.65. Two corrugated pipes (16 ft. diameter and 17 ft. diameter) comprise the diffuser system and extend under the Diffuser Pond dike into the river channel. The two pipes are set alongside each other (approx. 25 ft. apart) on the river bottom. Each diffuser pipe has a 350 ft. section through which flow is discharged into the river. A sluice gate is provided which allows one diffuser pipe to be isolated if necessary.

Each pipe has a 3 ft. by 3 ft. man way provided every 280 ft. apart. The 16 ft. diameter downstream pipe has four man ways and the 17 ft. diameter upstream pipe has five man ways. Each man way presently has a cover attached with two hinges and two heavy duty bolt type latches. This project will provide an alternate man way cover. The design function of the man way cover is to provide access to the diffuser pipe for initial installation and maintenance activities and to remain closed during operation to ensure discharge flow through the diffuser section of the pipe. The alternate man way cover will be mounted to the inside of the pipe;

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therefore the water pressure inside the pipe will compress the cover to the frame ensuring a tight seal. The alternate man way cover is designed to remain closed during operation.

Exact Location of the Project

Tennessee River Mile 483.65, refer to the attached topographic map Snow Hill 7.5 minute Quadrangle.

Existing Stream Characteristics and Dimensions

Sequoyah Nuclear Plant (SQN) is located at Tennessee River Mile (TRM) 484. At this location, the alignment of the river includes a bend of about 90° (Figure 1). Upstream, the river is about 5000 ft. wide, but becomes narrower through the bend. The SQN bottom diffusers are located near the end of the bend, at TRM 483.65. At this location the river is about 2000 ft. wide and includes a deep main channel with shallow overbanks. The main channel is about 1000 ft. wide and 50 ft. deep. The overbanks occur on both sides of the main channel and vary in depth from less than a foot to over 10 ft. Approximately 600 ft. upstream of the diffusers a submerged rock-fill dam extends across the main channel of the river. The crest of the submerged dam is about 25 ft. below the water surface.

The SQN bottom diffusers extend into the main channel about 700 ft. from the northern side of the river. In the overbank portion of the river the diffusers are situated in a trench that is backfilled to the original bottom elevation of the river with earth and crushed stone. In the main channel, the diffusers are partially buried in ballast consisting of crushed stone. The ballast is about 14 ft. deep on the upstream side of the diffusers and about 10 ft. deep on the downstream side (to expose the downstream-facing outlet ports of the diffusers).

At the river section containing the diffusers, the northern shore consists of a riprap dike for the plant Diffuser Pond. The dike is covered by small brush and deciduous trees. The southern shore includes a wooded area containing medium to tall deciduous and evergreen trees.

Proposed Channel Modifications

There are no proposed channel modifications included in this project. Of the nine man way covers only the first cover on the upstream 17 ft. diameter diffuser pipe will require excavation. The excavation will take place at Tennessee River Mile 483.65 approximately 100 ft. offshore.

Amount, in cubic yards, and location of excavation and dredging

No dredging will take place during this project. Approximately four cubic yards of material (large and small rip-rap, sediment, etc...) will be excavated.

Total area and location of clearing and grading

Approximately 10 square ft. of material (large and small rip-rap, sediment, etc...) will be cleared from the first man way cover of the upstream 17 ft. diffuser pipe.

Methods of excavation, grading or fill, and the materials to be excavated or placed

Rip-rap will be moved manually by divers and placed aside. Small rip-rap will be moved by hand and large rip-rap will be moved by lift bags and placed aside or between the upsteam and

downstream diffuser pipes. Sediment and debris will be moved by a water lift. Material will not be placed back over the man way of the upstream diffuser piping.

Location and Type of Erosion and Sedimentation Control Structures

This project will take place underwater approximately 100 ft. offshore so no erosion and sedimentation control structures will be used. Any equipment containing petroleum products will have a secondary containment and spill containment materials will be available onboard.

Other Alterations to the Properties of Waters of the State

None.

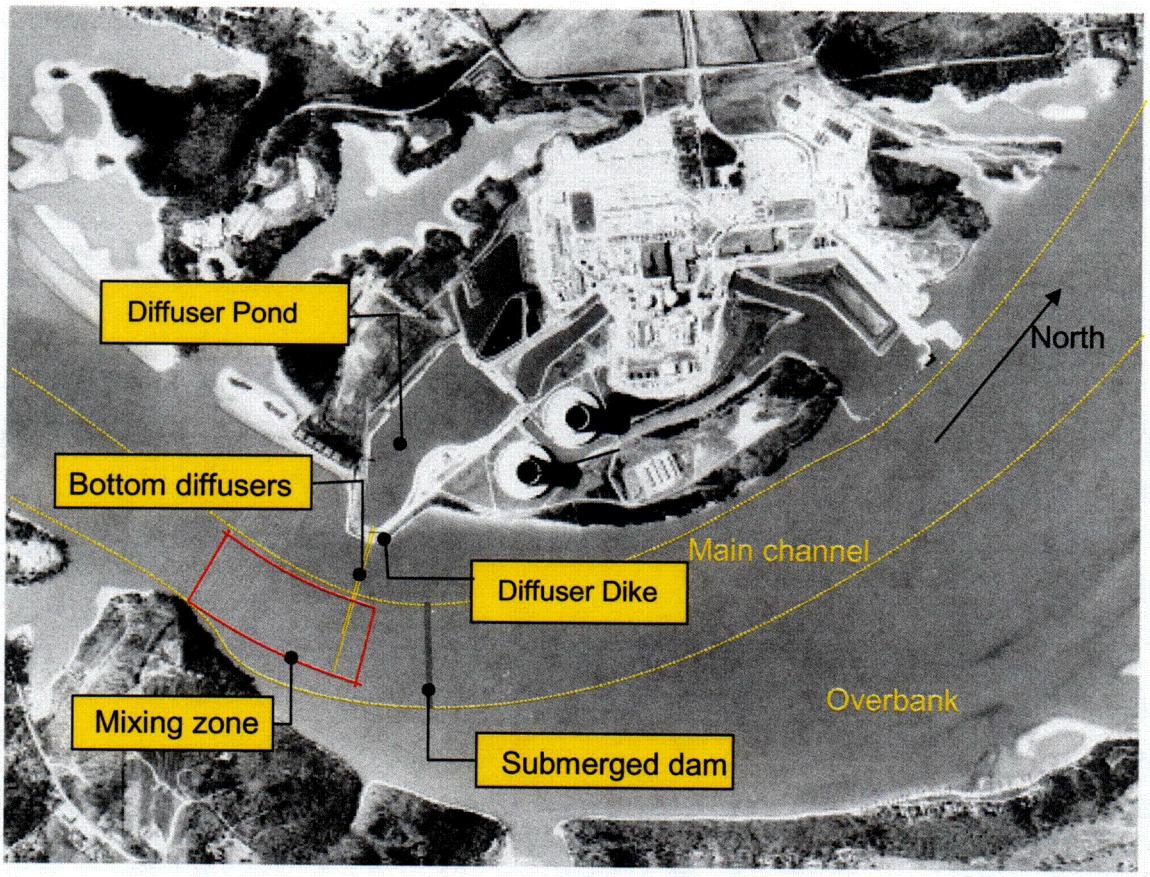


Figure 1. Tennessee River at Sequoyah Nuclear Plant

Please contact me at (423) 843-6700 if you have any questions or comments.

Sincerely,

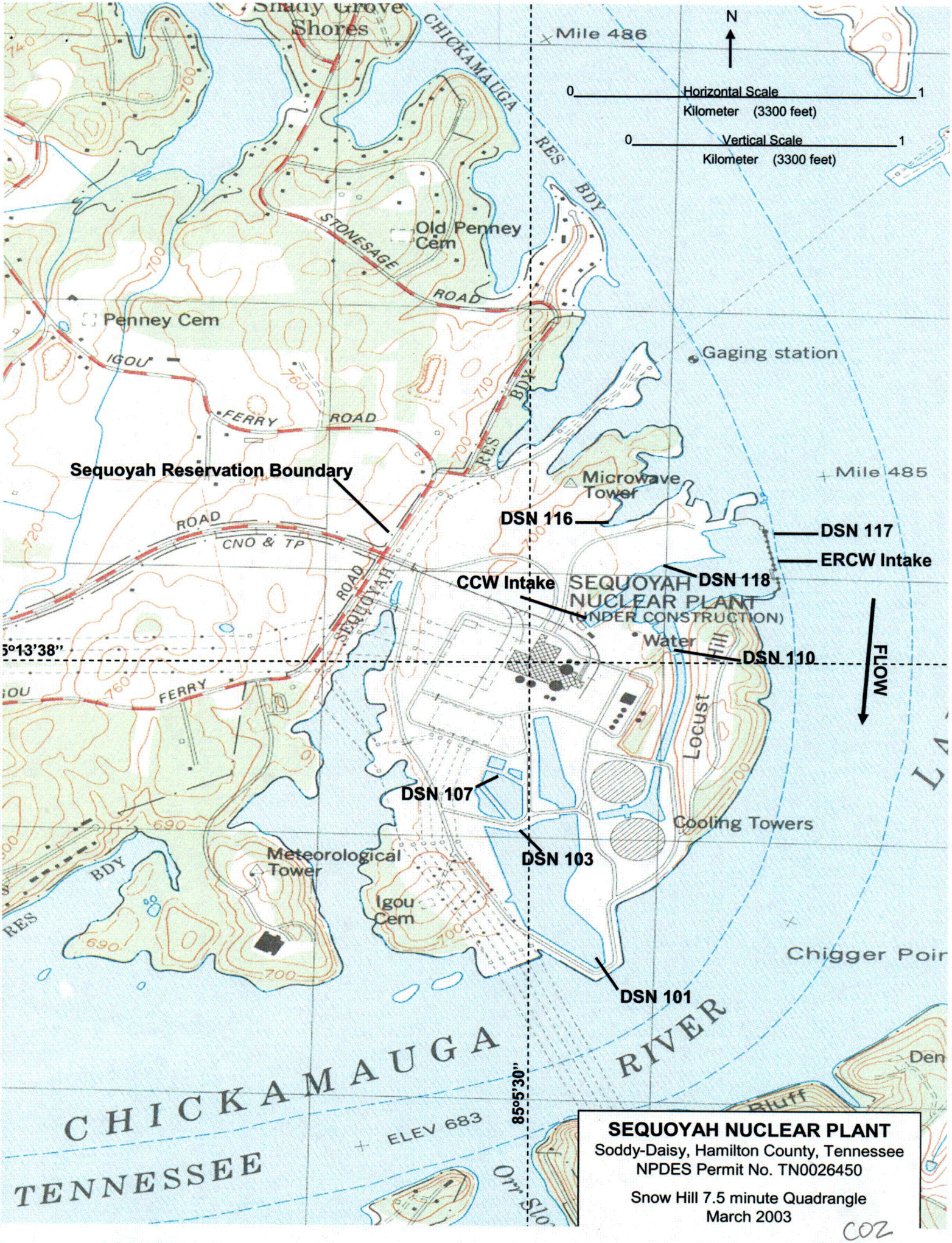
Stephanie A. Howard

Stephanie A. Howard
Principal Environmental Engineer
Signatory Authority for
J. Randy Douet
Site Vice President
Sequoyah Nuclear Plant

Enclosure
cc (Enclosure):

Chattanooga Environmental Assistance Center
Division of Water Pollution Control
State Office Building, Suite 550
540 McCallie Avenue
Chattanooga, Tennessee 37402-2013

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555



SEQUOYAH NUCLEAR PLANT
Soddy-Daisy, Hamilton County, Tennessee
NPDES Permit No. TN0026450

Snow Hill 7.5 minute Quadrangle
March 2003

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DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER POLLUTION CONTROL

APPLICATION
FOR
AQUATIC RESOURCE ALTERATION PERMIT

All necessary information must be submitted before applications can be processed.
Plans of the proposed work must be approved before a permit can be issued.

Allow up to 90 days for processing an individual permit.
Allow up to 30 days for processing a general permit.

APPLICANT

Name: **TVA - Sequoyah Nuclear Plant**

Address: **P.O. Box 2000, SB-2A Soddy-Daisy, Tennessee 37384-2000**

Phone Number: **(423) 843 - 6700** Fax Number: **(423) 843 - 7080**

LOCATION

County: **Hamilton**

Nearest City or Town: **Soddy-Daisy**

Name of river, stream, or waterbody where activity is proposed: **Tennessee River Mile 483.65**

SCHEDULE:

Date activity is proposed to commence: **October 25, 2004**

Date activity is expected to be completed: **November 9, 2004**

Is any portion of the activity now complete? **No**

If yes, detail the extent of the completed portion of the activity. Use an attachment if necessary.

(continued on reverse)

DETAILED DESCRIPTION OF THE PROPOSED PROJECT

Include with this application a detailed description of the proposed project. This description should include the following items:

1. a cover letter describing the basic purpose of the proposed project,

2. the exact location of the project indicated on a topographic map (or photographic copy with quad name)

3. a single copy of detailed plans, blueprints, or legible sketches, which include the following:

   a. a description of existing stream characteristics and dimensions such as depth, length, average width, substrate, and stream-side vegetation

   b. a description of any proposed channel modifications, such as depth, length, average width, substrate, and stream-side vegetation

   c. amount, in cubic yards, and location of excavation and dredging

   d. total area and location of clearing and grading

   e. methods of excavation, grading or fill, and the materials to be excavated or placed

   f. location and type of erosion and sedimentation control structures

   g. other alterations to the properties of waters of the state

APPLICANT'S SIGNATURE

Application is hereby made for a permit for the activity or activities described herein. I am familiar with the information contained in this application, and it is true, complete, and accurate to the best of my knowledge. I understand I am responsible for obtaining any other applicable federal, state, and local authorizations or permits.

Stephanie A. Howard

Signature of Applicant

September 29, 2004
Date

Stephanie A. Howard, Principal Environmental Engineer, Signatory Authority for J. Randy Douet, Site Vice President, Sequoyah Nuclear Plant
(TYPE or PRINT) Name and Title of Applicant

An application submitted by a corporation must be signed by a principal executive officer, from a partnership or proprietorship, by the partner or proprietor respectively, from a municipal, state, federal, or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.

Submit application to:

DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
NATURAL RESOURCES SECTION
6TH FLOOR L & C ANNEX
401 CHURCH STREET
NASHVILLE TN 37243-1534

PHONE (615) 532-0625
FAX (615) 532-0046

GENERAL PERMIT FOR MAINTENANCE ACTIVITIES

This general permit allows the maintenance of existing, previously authorized, currently serviceable, structures or fills such as dams, intake and outfall structures, utilities, culverts, etc. This general permit also authorizes the excavation of accumulated sediments and debris in the vicinity of existing structures such as bridges, culverted road crossings, and intake and outfall structures. Correspondingly, the placement of new or additional riprap to protect the structure is authorized.

Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction. Minor deviations in the structure's configuration or filled area including those due to changes in materials, construction techniques, or current construction codes or safety standards which are necessary to make the repair, rehabilitation, or replacement are permitted.

Maintenance activities are hereby permitted by this general permit, provided the activity is done according to the terms and conditions of this general permit.

Exclusions

This general permit cannot be used to authorize work in the following circumstances:

(a) where wetlands will be adversely affected by the proposed work;

(b) the structure or fill is to be put to uses differing from its original use or those uses specified in its original permit;

(c) when the activity is located in any waterway which is identified by the Department as having contaminated sediments, and where the proposed work will likely mobilize the contaminants;

(d) where the activity is located in a component of the National Wild and Scenic River System, a State Scenic River, or waters designated as Outstanding National Resource Waters;

(e) when the project will adversely affect a species formally listed on State or Federal lists of threatened or endangered species; or

(f) when an individual permit is required.

Maintenance activities not qualifying for authorization by this general permit may be authorized by individual permit provided all requirements of the *Tennessee Water Quality Control Act of 1977* are met.

Notification

1) Notification to the Division is not required where the work involves excavation of accumulated bedload and unconsolidated sediments from within culverts, and for a distance of one hundred feet up and down stream.

2) Notification to the Division is required of persons planning to conduct maintenance activities other than as specified in item one of this section. Notification shall be in the form of an original, signed document which includes the following minimum information:

(a) a map showing the exact location of the proposed work; and

(b) a single copy of construction plans or drawings which includes all dimensions and specifications for the proposed work.

Work shall not commence until the applicant has been notified by the Division that the activity may proceed under the general permit.

General Terms and Conditions

The following general terms and conditions apply to all activities authorized by this general permit.

1) The dredging or excavation of sediment shall be limited to the minimum necessary to restore the waterway in the immediate vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend further than 100 feet in any direction from the structure.

2) The placement of riprap must be the minimum necessary to protect the structure, or to ensure the safety of the structure.

3) All materials to be discharged or placed below ordinary high water must be free of pollutants, contaminants, toxic materials, trash, creosote treated timbers, or other wastes as defined by T.C.A. 69-3-103(18).

4) Dredged materials shall be removed to an upland site and disposed in such a manner as to prevent reentry to waters of the State.

5) Erosion and sediment control measures are required where soil will be disturbed. The control measures must be in place before earthmoving operations begin, maintained throughout the construction period and repaired, if necessary, after rainfall. Control measures such as straw bales and/or silt fence must be installed along the base of all fills and cuts, on the down hill side of stock piled soil, and along the waterbody in cleared areas to prevent movement of sediments into the waters. They must be installed parallel to the waterbody, entrenched and staked, and extend the width of the area to be cleared.

6) Slurry water pumped from work areas and excavations must be held in settling basins or treated by filtration prior to its discharge into surface waters. Water must be held in settling basins until at least as clear as the receiving waters. Settling basins shall not be located closer than 20 feet from the top bank of a stream. Settling basins and traps shall be properly designed according to the size of the drainage areas or volume of water to be treated.

7) Clearing, grubbing and other disturbance to riparian vegetation shall be limited to the minimum necessary for grading work and equipment operations. Unnecessary vegetation removal is prohibited. All disturbed areas shall be properly stabilized as soon as practicable.

8) Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the state. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the state, including groundwater.

9) Upon achievement of final grade, all disturbed areas must be stabilized and re-vegetated within 30 days by sodding or seeding and mulching. Seed to be utilized shall include a combination of annual grains and grasses, legumes, and perennial grasses. Lime and fertilizer shall be applied as needed to achieve a vegetative cover

10) Prior authorization must be obtained when necessary by the applicant pursuant to applicable provisions of §10 of *The Rivers and Harbors Act of 1897*, §404 of the *Clean Water Act* and §26a of *The Tennessee Valley Authority Act.*

Effective Date	July 1, 2000	APPROVED: _____
Expiration Date	June 30, 2005	Paul Davis, Director