



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

TENNESSEE VALLEY AUTHORITY

DOCKET NO. STN 50-520

HARTSVILLE NUCLEAR PLANT, UNIT A2

AMENDMENT TO CONSTRUCTION PERMIT

Amendment No. 2  
Construction Permit CPPR-152

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - B. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, Construction Permit No. CPPR-152 is amended by replacing pages 2 and 3 of Attachment C "Monitoring Plan for Mussels During Discharge Diffuser Construction" with the enclosed pages 2 and 3.
3. This amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

D. B. Vassallo, Acting Director  
Division of Project Management

Enclosure:  
Pages 2 and 3 to  
Attachment C

Date of Issuance: SEP 7 1979

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4. Sedimentation traps will be placed by Scuba divers at specified intervals along the length of the Dixon Island mussel bed downstream of the proposed dredging operation to estimate the loss of and accumulation of materials in the sediments (to be continued throughout the instream dredging activities). A control station (1 transect) upstream of the dredging operation will be monitored to detect natural sedimentation rates for comparative purposes.
5. Scuba divers will search the area from Dixon Island downstream to the upper edge of the Dixon Island mussel bed and remove any isolated mussel specimens. Any specimens found will be placed on or in the substrate of an established mussel bed.

#### DIFFUSER EXCAVATION PERIOD

1. Prior to initiation of the dredging activity, the Permittee shall give three weeks written notice of the planned construction schedule to the NRC Staff, the Intervenor, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency and the State of Tennessee.
2. Sedimentation traps will continue to be placed at the same stations used in the prediffuser excavation period. The traps will be returned twice per 8-hour dredging crew working shift (once after 4 hours and once after 8 hours) during excavation of approximately the first 1,000 cubic yards of material. Additional sedimentation traps will be placed at the same stations to provide a measure of the aggregate (total) deposition of silt which results from the construction activity during the excavation period. Applicant will determine the depth of sediment deposited in the traps. If one-quarter inch or more aggregate sediment is found to have been deposited in at least two sample traps, dredging will be stopped. Dredging may be resumed if later observation of sediment traps shows that the aggregate sediment deposition has been reduced to less than one-quarter inch. Before using any artificial means to remove the sediment, Applicant will obtain the concurrence of the Department of Interior.
3. Turbidity levels of the river above and below the dredging activities will be measured at 1-meter depth intervals from surface to the bottom and averaged over the water column to document changes in natural turbidity levels resulting from these activities. Samples will be taken hourly during excavation. Natural turbidity levels of record as defined in the Hartsville Nuclear Plant's ER will be the feedback criteria for regulating the rate of instream dredging. Maximum documented levels of turbidity are 85 ppm (JTU).
4. Measurement of light intensity in the water column will be performed with a submarine photometer both above and below the dredging activities. Measurements will be made hourly during excavation. A 50 percent reduction in the depth of 0.1 percent of the light transmission at some selected point at the mussel bed relative to an upstream location (above the dredging activities) will be the feedback criteria for instituting corrective mitigative actions.

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5. Should the aggregate silt deposition or turbidity levels or light penetration data indicate a need for mitigative action, the inspector will report his findings and make his recommendation to the project environmental engineer, who will present these findings and recommendations to the project manager. The project manager will make the decision on the mitigative actions to be taken, i.e., to slow down or halt construction.
6. Dissolved oxygen, pH conductivity, and temperature profiles will be made at upstream and downstream locations to document any perturbations of these parameters.
7. During blasting activities, mussels will be placed by scuba divers at established intervals from the area of the blasting to determine if mussels on the Dixon Island bed are harmed by shock waves from these activities. No threatened or endangered species will be used.
8. Within 30 days after completion of the dredging activity, the Permittee shall submit to the NRC Staff a summary report of the results of the monitoring plan with copies to the Intervenors, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency and the State of Tennessee.

#### POST-DIFFUSER CONSTRUCTION

1. A post-diffuser construction survey of sediments in the area of the diffuser and mussel bed will be conducted to document any perturbation of river sediments as a result of these construction activities. A total of 5 samples will be collected from each of three transects approximating those established in Pre-diffuser construction (2).
2. Transects approximating those established during the pre-diffuser construction survey will be established at 50-foot intervals beginning at the upper end of the mussel bed (CRM 284.1). Square meter samples will be taken along the transect. Mussels recovered from the square meter grids will be carefully removed and examined and immediately returned to the river. This qualitative and quantitative data will serve as a reevaluation of the mussels found on the Dixon Island mussel bed following completion of the diffuser construction activities.

The breeding season for Lampsilis orbiculata is reported to be during August and September, with glochidia being discharged the following June. Since mussels are mucoid filter feeders, the increase in turbidity levels should pose no problem to mussels during any period of the year. We, therefore, recommend that instream dredging activities associated with the discharge diffuser be conducted at any time of the year. However, dredging during the breeding season (August and September) will be avoided if possible.