

ENVIRONMENTAL MONITORING PROGRAM DURING CONSTRUCTION  
OF PERRY NUCLEAR POWER PLANT UNITS 1 AND 2

There are three parts to the Environmental Protection Program. Part One relates to general work practices and addresses vehicle movement, dust control, noise control, and chemical and solid waste management. Part Two covers specific construction activities which merit special attention because of potential impact. Part Two includes site clearing and grubbing, excavation, dewatering, barge slip, and offshore structures. Part Three involves an ecological monitoring program to observe impacts of construction in adjacent areas or to confirm that such impacts have not occurred.

This program describes construction practices and monitoring programs which must be followed to limit environmental impact. The Applicant will provide administrative controls which assure immediate corrective action when any departure from the described practices occurs. Compliance with Parts One and Two will be assured by a weekly reconnaissance of the site by the Applicant. In addition, a reconnaissance of erosion and sediment control structures will be made within twenty-four hours after every rain-storm, but is not required more than once in a twenty-four hour period.

Observations on each of the points covered in the program will be maintained in written records which will be kept up-to-date and available for inspection by the Regulatory Staff at all times during normal working hours. These records shall indicate the corrective actions prescribed by the Applicant's inspector for any noted deviation from this program. Completion of the prescribed corrective action as noted on subsequent inspections will be documented therein.

Applicant's management will receive monthly reports with respect to Parts One and Two of the Environmental Protection Program from its own inspectors. A summary of these monthly reports will be submitted to the AEC Regulatory Staff every six months.

A preoperational monitoring report based upon the program in Part Three, prepared at the Operating License Stage, will include a more thorough discussion of observations of environmental effects observed during the course of construction.

The Applicant will assure that contractors and subcontractors are familiar with and that their construction practices are in accordance with the Environmental Protection Program as described in Parts One and Two. Records will be maintained by the Applicant to document steps taken to familiarize contractors with the Environmental Protection Program.

## PART ONE - GENERAL PRACTICES

### 1. VEHICLE MOVEMENT

Areas where uncontrolled traffic can cause severe damage, such as undisturbed open spaces, will be delineated on a site map and designated as "off limits" areas for all construction vehicular traffic.

For woodland areas, all vehicular traffic will stay within the roadway, access corridor, or utility rights-of-way shown on the site map.

Traffic will be restricted from crossing streams or stabilized drainageways except at approved stabilized crossing locations.

The construction area will be fenced to establish control over access and to implement a construction security program. Cyclone fencing topped with three strands of barbwire will be utilized.

### 2. DUST CONTROL

Dust, smoke, engine exhausts and concrete plant operations represent air pollution potentials which can be controlled. Dry-weather wetting or the paving of the most traveled construction roads will reduce dust generated by vehicular traffic. Bare areas will be seeded to provide a ground cover where necessary. Care will be taken to control smoke or other undesirable emissions. The Applicant will adhere to applicable air-pollution control regulations of Lake County and the State of Ohio as they relate to open burning or the operation of certain fuel-burning equipment. Permits and operating certificates will be secured where required. Fuel-burning equipment will be maintained in good mechanical order to reduce excessive emissions. Reasonable precautions will be taken to prevent accidental brush or forest fires. The concrete plant will be equipped with dust-control systems to avoid excessive releases of cement dust.

Dust resulting from vehicular traffic on unpaved haul roads and access roads during dry weather will be controlled by spraying problem areas with water, as necessary. Dust from wind action on off-road, cleared areas will be minimized by the reseeding of bare areas as part of the erosion control efforts. Uses of gravel on heavily traveled roads and parking areas during early construction activities will further eliminate potential dust problems.

Visual observations for excessive dust will be made daily during peak construction activity periods. Existing dust control measures will be modified if necessary.

### 3. NOISE CONTROL

Action will be taken to reduce excessive and objectionable vehicular noise. Standard noise control devices on trucks and other equipment will be provided and maintained in effective condition.

Noise levels at the site boundary will be documented by surveys using a portable sound level meter. Surveys will be conducted bimonthly during the first year of construction and semi-annually thereafter. Noise levels will be surveyed during periods of peak noise-producing activity.

### 4. CHEMICAL AND SOLID WASTE MANAGEMENT

A settling basin will be constructed in the rechanneled stream east of the plant to intercept runoff from that area. Basins of similar design will be constructed north of the concrete batch plant area to handle runoff from that area. Groundwater pumped from construction excavations will be discharged to these basins. The basins have been sized to permit settling of runoff and wastes prior to discharge of the decantate to Lake Erie.

Liquid wastes, such as fuels, lubricants, and bitumens, will be deposited or discharged into tanks for subsequent removal to appropriate off-site locations

for disposal in accordance with state and local standards. Adequate care will be taken to avoid handling or storing liquids in close proximity to major drainage areas, thereby avoiding damaging spills to the site streams.

Construction scrap and debris will be collected in designated on-site areas for salvage, incineration, or burial. Incombustible solid wastes will be buried onsite at landfull areas that will be designated in accordance with state and local standards.

## PART TWO - SPECIFIC CONSTRUCTION ACTIVITIES

### 1. SITE CLEARING AND GRUBBING

Sediment structures will be installed prior to or concurrent with the initiation of clearing and grading operation. Stream stabilization work will be performed prior to or concurrent with the initiation of clearing and grading operations in the watershed.

Clearing and grubbing of the site will be limited to the area needed to construct the facility and to dispose of waste materials within the confines of the site.

Unmerchantable timber and timber wastes (slash) will be burned in accordance with the State of Ohio Air Quality Regulation. Brush and tree limbs may be shredded and used as mulch for erosion control on spoil disposal areas. Erosion in the construction area will be controlled by providing piped drainage, intercept and berm ditches, and ground covers where necessary. Earth materials will be deposited and protected in selected areas so that surface runoff will not transport sediments to Lake Erie.

Drainage into Lake Erie will be maintained during construction. Spoil areas will be graded and permanently landscaped to natural drainage patterns. Settling ponds will be provided.

Three sedimentation ponds will be established to prevent turbid water runoff to Lake Erie. A dam on the larger stream draining the western portion of the site will establish a pond of approximately 900,000 cubic feet. A dam in the northwest drainage area will establish a pond of approximately 90,000 cubic feet, and a dam in the rechanneled stream east of the plant will establish a pond of approximately 150,000 cubic feet. If the capacity of a sedimentation pond is reduced by about half due to siltation, it will be drained and cleaned out.

Settling ponds will be maintained for the duration that ground is uncovered.

## 2. EXCAVATION AND SOIL DEPOSITION

One of the first major operations required under the excavation program is the construction of principal sediment control structures and the implementation of an overall soil erosion control program to stabilize the site during construction. The excavation program will include rerouting of the stream east of the plant, subgrades for railroads and access roads, drainage structures and channels, excavation and drainage of the power block area structures, circulating water lines and pump house, intake and discharge tunnels, and auxiliary and containment buildings.

Excess spoil removed by excavation will be utilized to construct berms along Parmly Road and to fill a depressed area north and east of the concrete batch plant. During and immediately following the filling of each spoil disposal area, the fill will be graded to acceptable slopes to minimize potential erosion problems before turf cover is established.

Until the vegetation has stabilized the disposal areas, maintenance will be performed to correct local areas of excessive erosion. The drainage from the proposed spoil areas, during and after construction, will be designed to follow the natural drainage patterns now existing.

Diversion dikes will be constructed to form the settling basins. Spoil areas and other erodible areas will be graded to divert surface flow to the settling basins. Spoil areas will be graded and maintained to minimize erosion.

## 3. DEWATERING

As the Lacustrine deposits are the primary water-bearing stratum and are of variable permeability, groundwater will be intercepted near the base of the deposit by a series of interceptor drains and sumps, as shown on Figure 4.1-3. Other interceptor drains and sumps may be required in addition to or in lieu of those shown, although the amount of groundwater infiltration within the upper and lower till deposits is expected to be minimal.

Experience with similar excavations in the Cleveland area indicates that the above measures will be adequate to control the groundwater within the excavated areas. Should zones be encountered where additional measures are required, cutoff walls of sheet piling or of slurry will be installed to control the groundwater intrusion.

Groundwater and precipitation collected in the interceptor drains and excavation sumps during construction will be conveyed to one or both of the large surface run-off settling basins discussed in Section 4.1.3.3.

Possible dewatering effects on groundwater levels will be monitored at approximately three wells on the site on a biweekly basis.

#### 4. BARGE SLIP

Dredging in Lake Erie will be required in 1976 to construct the channel for a barge slip, and limited redredging may be required in subsequent years for silt removal. This barge facility will be used to deliver heavy components, including reactor pressure vessels, to the site. Spoils from dredging will be disposed of on shore. Due to the limited extent and frequency of this dredging, there should be no significant environmental impact from this construction activity.

#### 5. OFFSHORE STRUCTURES

Construction of the intake and discharge facilities will be carried out by means of a drilling platform. These platforms are positioned over the center of the hole to be drilled and then hydraulically jacked up from the lake bottom into the working position. The drilling of the intake and discharge riser tunnels will require 6-foot diameter shafts. The drilling will be accomplished inside of a casing anchored to the lake bottom, such that all spoils material will be brought up the casing above water and can be loaded into barges for disposal either on shore or at an approved lake disposal site. By means of this construction technique, only a minimal lake bottom area will be affected and, therefore, this operation should have no significant environmental impact.

## PART THREE - ECOLOGICAL MONITORING PROGRAM

### 1. TERRESTRIAL

This monitoring program is designed to detect changes in sensitive parameters at the Perry Nuclear Power Plant site. Its functions will be two-fold; to provide information needed to decide whether an observed change is caused by construction-related activities or by other environmental factors not related to construction; and, in the case of deleterious changes which are caused by construction, to provide guidance in recommending changes in procedure to minimize or eliminate, if practicable, the causes of the observed changes.

Populations of Tipularia discolor will be marked for easy location during semi-annual visits. Individuals of each population will be counted twice each year, in early spring and late summer, for the duration of the monitoring program, in order to discover whether the populations are stable, increasing, or decreasing. Because the densities of these populations are very low, and individuals are represented only by single leaves, density and cover will not be calculated.

Upstream of the relocated length of stream, observation wells will monitor changes in water table, and surface water levels will be observed.

Raptor nests will be censused in the spring of each year to measure fledgling success and recruitment.

Reports will be made by July 1 and January 1 of each year of the monitoring program.

Reports at the end of the first year will describe and locate the Tipularia populations. In later years of the study, reports will cite evidence of any and all observed changes, whether related to disturbance or not.

## 2. AQUATIC

The basic objective of establishing a construction aquatic monitoring program is ultimately to prevent unnecessary stress brought about by plant construction activities and to protect the aquatic environment. The program is designed to be sufficiently comprehensive in monitoring all major elements of the aquatic system that could reasonably be expected to detect effects from plant construction. As construction monitoring data are obtained, data evaluation will be accomplished early enough to implement remedial action, should such action be required, before permanent damage to the ecosystem has occurred. An analysis report of constructional data compared against preoperational data will be prepared every six months during the construction phase. The report will include descriptions of water chemistry, bacteria, and benthos, with reference to appropriate baseline ecological data.

As noted in Chapter 4 of the PNPP Environmental Report, the primary effects of construction of the PNPP on Lake Erie will be the disturbance of the benthic community due to increased turbidity due to construction of the barge slip and approaches. In addition, sanitary wastes from the factory-built sewage treatment units will be discharged into Lake Erie.

During the construction of the PNPP, the following physical and chemical parameters will be analyzed on a monthly basis: pH, total solids, dissolved solids, suspended solids, turbidity, oil and grease, BOD, nitrates, and phosphates. The samples will be collected along transects 1, 5, and 9. During barge slip construction and dredging, the sampling frequency will be increased to weekly.

The biological monitoring program will include benthic invertebrates and bacteria. Samples will be obtained on a seasonal basis (spring, summer, and fall).

Benthic samples will be taken with a benthos suction pump to assure that consistently representative samples are obtained. Samples will be collected at two locations on transects 1, 5, and 9.