

JUL 8 1981

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Docket Nos. 50-440  
and 50-441

Docket File  
NRC PDR  
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ASchwencer  
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RLTedesco  
Eisenhut/RPurple  
OI&E(3)  
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NSIC

Attorney, OELD  
R. Gilbert  
G. Gears  
C. Hickey  
R. Samworth  
R. Ballard

MEMORANDUM FOR: Daniel R. Muller, AD for Environmental Technology, DOE  
FROM: Robert L. Tedesco, AD for Licensing, DL  
SUBJECT: REVIEW OF PROPOSED CHANGES TO THE PERRY ENVIRONMENTAL MONITORING PROGRAM

In a letter dated July 7, 1980 (Enclosure 1), Cleveland Electric Illuminating discussed planned changes to the Environmental Monitoring Program which has been and continues to be pursued during the construction of the two unit Perry Nuclear Power Plant. Our action on this proposal was unclear since no formal NRR approval had been issued on either the original program submitted in August, 1974 or its resubmittal in August, 1978 (Enclosure 2). Since NRR did not reject or modify that program, NRC I&E (Region III) adopted this plan as their basis for auditing the environmental activities at the Perry site. During our recent discussions with CEI, they informed us of their desire to shift some of their environmental resources to prepare for the operation of Unit 1 but that such a shift could only be made if the revisions to the CP program were approved. Furthermore, I&E requires our approval of the proposed program changes before such changes can be factored into their future inspection audits.

Therefore, at this time we request that the Environmental Engineering Branch review the changes to the Perry Environmental Monitoring Program and provide us with an evaluation of those changes. If you require further information in regard to this request, please contact Dean Houston (Ext. 28593), Project Manager.

15  
Robert L. Tedesco, Assistant  
Director for Licensing  
Division of Licensing

Enclosure:  
As stated

cc w/enclosure:  
See next page

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OFFICE	DL: LB#2 DHouston	DL: LB#2 ASchwencer	DL: ADO RLTedesco				
SURNAME							
DATE	7/7/81	7/7/81	7/7/81				

Mr. Dalwyn R. Davidson  
Vice President, Engineering  
The Cleveland Electric Illuminating Company  
P. O. Box 5000  
Cleveland, Ohio 44101

cc: Gerald Charnoff, Esq.  
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ENCLOSURE 1

ILLUMINATING BLDG • PUBLIC SQUARE • CLEVELAND, OHIO 44101 • TELEPHONE (216) 625-1330 • MAIL ADDRESS: 1000 BLY BLVD

Dalwyn R. Davidson  
VICE PRESIDENT  
SYSTEM ENGINEERING AND CONSTRUCTION

July 7, 1980

Director of Nuclear Reactor Regulation  
Attention: Mr. A. Schwencer, Chief  
Licensing Branch 2  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Perry Nuclear Power Plant  
Docket Nos. 50-440 & 50-441  
Construction Permit Nos.  
CPPR-148 and CPPR-149  
Environmental Monitoring Program

Dear Mr. Schwencer:

The Cleveland Electric Illuminating Company plans to make the following changes in the Environmental Monitoring Program during construction of the two unit Perry Nuclear Power Plant:

1. Reduce the frequency of lake water sampling and analysis from monthly to quarterly.
2. Eliminate the quarterly collection of benthic samples.
3. Alter the scope of the crane fly orchid surveillance program from quantitative to qualitative monitoring these plant populations.
4. Terminate the raptor program following the 1980 breeding season.

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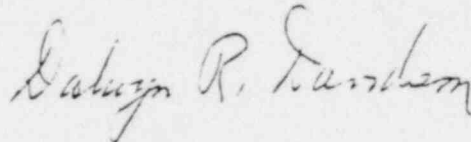
Mr. A. Schwencer

-2-

July 7, 1980

The rationale for these changes are addressed in the attached recommendations from our environmental consultant, the NUS Corporation.

Very truly yours,



Dalwyn R. Davidson  
Vice President  
System Engineering and Construction

Enclosures (2)

cc: Mr. James G. Keppler  
Region III Office of Inspection  
and Enforcement  
U. S. Nuclear Regulatory Commission  
Glen Ellyn, IL 60137

**NUS**  
CORPORATION

ENVIRONMENTAL SYSTEMS GROUP  
100 RESEARCH PLACE  
ROCKVILLE, MARYLAND 20850  
301 948-7010

February 20, 1980  
ESG-80-54  
PY/NUS-CEI-301

Mr. Carl Banks  
The Cleveland Electric  
Illuminating Company  
10 Center Road  
North Perry, Ohio 44081

Dear Carl:

The terrestrial ecology construction monitoring program was discussed at our meeting in Rockville on January 23, 1980, we suggested that this program should be reduced in scope and that the NRC be informed of the reduction.

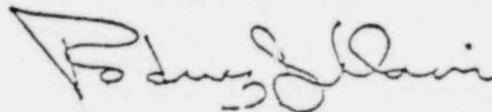
The current construction monitoring program consists of three separate programs: (1) crane fly orchid, (2) raptors, and (3) vegetation. Because we have shown no statistical differences between years, it is concluded that construction has had no effect on the crane fly orchid populations; therefore, we recommend that this program be terminated. As part of a limited surveillance effort in conjunction with vegetation monitoring, we can continue to qualitatively monitor the orchid populations and detect deleterious changes should they occur.

The raptor program should be continued through the 1980 breeding season and then terminated. This would hopefully refute or substantiate a correlation between a declining screech owl population and severe winters.

The vegetation monitoring program consists of annually photographing the site with color infrared film in late summer. Combined with ground reconnaissance, this is a means by which to detect vegetative stress and it also provides a permanent record of natural succession/land use conditions. We recommend that this program be continued until the preoperational monitoring program is initiated.

If there are any questions relative to these tasks please let me know.

Sincerely,



Rodney J. Davis  
Project Manager

cc: CEI/NED  
G. Friday  
R. Pellek



NORTHERN ENVIRONMENTAL SERVICES DIVISION

4 RESEARCH PLACE  
ROCKVILLE, MARYLAND 20850  
301 848-7010

March 19, 1980  
ESG-80-79  
PY-NUS/CEI-306

Mr. Carl Banks  
The Cleveland Electric  
Illuminating Company  
10 Center Road  
North Perry, Ohio 44081

Dear Carl:

The aquatic ecology construction monitoring program was discussed at our meeting in Rockville on January 23, 1980 and in your letter of February 15, 1980. It is suggested that this program be reduced in scope and that the NRC be informed of the reduction.

CEI initiated construction at Perry late in October 1974 and initiated construction monitoring in November 1974. The monitoring program was submitted to NRC (then AEC). The general thrust of the monitoring program was to study those water parameters which would indicate deviations from ambient and, if there was unnecessary stress brought about by plant construction, to identify it early enough to allow corrective action to be taken.

Since 1974 to the present the PNPP construction monitoring program included the following physical, chemical and biological parameters:

- 1) Monthly pH, temperature, dissolved oxygen, total solids, dissolved solids, suspended solids, turbidity, oil and grease, BOD, nitrates, phosphates and bacteria.
- 2) Spring, summer and fall benthic macroinvertebrates.

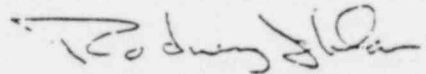
All samples are collected at stations 1, 5 and 9. During barge slip construction and dredging, the sampling frequency was increased to weekly. Monthly status reports of the water analysis were submitted to CEI in support of their overall monitoring programs.

Mr. Carl Banks  
March 19, 1980  
Page Two

During the five year monitoring program at the PNPP only slight deviations from ambient water quality were detected. Elevated levels of suspended solids and turbidity in the water column was observed during periods of surface run-off and construction and dredging of the barge slip. These slight deviations from the norm were very localized and temporary, and further, were to be expected. No significant impact would be expected from these slight changes. Occasionally, elevated levels of fecal coliform and streptococcus appeared from time to time, but these too, were localized and temporary. In all cases, the water column returned to ambient within a month. CEI is to be commended for its realistic attempt to minimize construction impacts to the lake during a period of major construction activities.

In view of the fact that five years of construction monitoring data has indicated no significant construction impacts, and further, that sufficient data has been collected at the site since 1971, we concur with CEI that a reduction in the monitoring program is in order at this time. Therefore, we recommend that quarterly benthic sampling be dropped and monthly physical and chemical parameters be reduced to quarterly. These recommendations should remain in affect until the preoperational monitoring phase; at which, time appropriate changes in aquatic monitoring of the lake will be considered.

Sincerely,



Rodney J. Davis  
Project Manager

cc: CEI/NED  
D. Cafaro

ENCLOSURE 2

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ILLUMINATING BLDG. • PUBLIC SQUARE • CLEVELAND OHIO 44101 • TELEPHONE 2151 523 1350 • MAIL ADDRESS P. O. BOX 907

*Serving The Best Location in the Nation*

Dalwyn R. Davidson  
VICE PRESIDENT - ENGINEERING

August 23, 1978

Director of Nuclear Reactor Regulation  
Attn: Mr. William H. Regan, Jr., Chief  
Environmental Projects Branch 2  
Division of Site Safety & Environmental Analysis  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Perry Nuclear Power Plant  
Docket Nos. 50-440 & 50-441

Dear Mr. Regan:

In accordance with the July 7, 1978 telephone conversation between Carl Banks of our Company and Robert A. Gilbert of your office, a copy of the current Environmental Monitoring Program developed for construction of the Perry Nuclear Power Plant is enclosed for your review and approval.

Please feel free to contact us if you have any questions.

Very truly yours,

*Dalwyn R. Davidson*  
Dalwyn R. Davidson  
Vice President - Engineering

Enclosure (1)

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*GAO  
EC  
17*



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

For the protection of the environment during construction of the Perry Nuclear Power Plant, a three-part Monitoring Program will be followed. 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 off-shore 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 prompt corrective action when any departure from described practices occurs. Compliance with Parts One and Two will be assured by a weekly reconnaissance of the site by the Applicant's inspector(s). In addition, during the first two years of construction when most of the site clearing will take place, a reconnaissance of erosion and

sediment control structures will be made within three working days after every rainstorm exceeding .2 inches of precipitation.

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(s) for any noted deviation from this program. Completion of the prescribed corrective action as noted during subsequent inspections will be documented therein.

Applicant's management will receive monthly reports during the first two years of construction and every two months (bi-monthly) thereafter with respect to Parts One and Two of the Environmental Monitoring Program from its own inspector(s). A summary of these reports will be submitted to the NRC Region III Office of Inspection and Enforcement and to Applicant's management on a semi-annual basis.

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

The Environmental Report submitted at the Operating License Stage will contain a discussion of the Construction Impact Control Program including observations of environmental effects observed during the course of construction.

Changes in the philosophy or scope of the Environmental Monitoring Program will be made only with the approval of the Regulatory Staff.

## PART ONE - GENERAL PRACTICES

### 1. Vehicle Movement

Areas where uncontrolled traffic can cause severe damage, such as undisturbed open spaces, will be off limits to all construction vehicular traffic.

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

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. Fuel burning equipment will be maintained in good mechanical order to reduce excessive emissions. The concrete batch plant will be equipped with a dust-control system to

avoid excessive releases of cement dust. Open burning will be prohibited at the construction site.

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 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 by the Applicant's inspector(s) during the weekly reconnaissance inspections and more frequently during the initial stages of construction activity when the potential for dust problems is increased due to site clearing and grubbing. Existing dust control measures will be modified if necessary.

### 3. Noise Control

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

Noise levels at the site boundary will be documented by surveys using a portable sound level meter. Surveys will be conducted every two months during the first two

years of construction and semi-annually thereafter. The semi-annual surveys will be conducted in the spring and fall.

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 northwest 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 in containers for subsequent removal to off-site locations for disposal in accordance with appropriate standards. Adequate care will be taken to limit the handling or storing of liquids of this nature in close proximity to major drainage areas, thereby minimizing the possibility of damaging spills to site streams.

Construction scrap and debris will be collected at designated on-site areas for salvage or burial. Burial of solid wastes will take place at designated on-site landfill areas in accordance with standard cut and fill practices.

## PART TWO - SPECIFIC CONSTRUCTION ACTIVITIES

### 1. Site Clearing and Grubbing

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

Clearing and grubbing of the site will be limited to the area needed to construct the facility, store construction materials and plant equipment and dispose of solid construction waste materials within the confines of the site.

Unmerchantable timber, timber wastes (slash), brush and tree limbs will 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 cover where necessary. Earth materials will be deposited in selected areas and protected by reseeding where necessary to minimize sediment transport of surface runoff to Lake Erie.

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

Three sedimentation ponds or impoundments will be established to minimize the runoff of turbid water 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 about 90,000 cubic feet, and a dam in the re-channeled stream east of the plant will establish a pond of approximately 150,000 cubic feet. If upon visual inspection the capacity of a sedimentation pond appears significantly reduced, it will be dredged to restore its capacity. Settling ponds will be maintained for the duration the 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 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 areas subject to erosion 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. Additional interceptor drains and sumps may be required; however, 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 the surface run-off settling basins.

Possible dewatering effects on groundwater levels will be monitored at test wells set up around the periphery of the plant site excavation. This will be done once every two weeks during the first three years of construction and once every two months thereafter.

#### 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. Initially, material dredged from barge slip and approach channel construction will be disposed of on-shore. Material removed from the slip and approach channel during subsequent maintenance dredging may be used to replenish shoreline lost due to erosion and wave action in the

vicinity of the slip. Due to the limited extent and frequency of this dredging, there should be no significant environmental impact from this construction activity.

#### 5. Off-Shore Structures

Construction of the intake and discharge facilities will be carried out by means of a drilling platform. These platforms will be positioned near 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 in the spring of each year. Individuals which bloom will be counted when blooming occurs in the summer to discover if 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.

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

Raptors will be censused in the spring of each year to determine if site populations are increasing, decreasing or stable. Yearly reports will show approximate raptor territories observed in the field.

## 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.

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 from construction of the barge slip and approach channel. 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 phosphorous. The samples will be collected along transects 1, 5 and 9. If monthly samples show unusual or unanticipated results during barge slip construction and dredging, the sampling frequency will be increased to weekly during these activities.

The biological monitoring program will include benthic invertebrates and bacteria. Benthos samples will be taken in spring, summer and fall at the inner and outermost locations of transects 1, 5 and 9, when possible, realizing that the lake bottom in this area is not suitable for sampling benthos using conventional methods. Bacteriological sampling will be performed at the same time water quality samples are taken and will include analyses for standard plate count, coliform, fecal coliform and fecal streptococcus.