



THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ILLUMINATING BLDG. ■ PUBLIC SQUARE ■ CLEVELAND, OHIO 44101 ■ TELEPHONE (216) 623-1350 ■ MAIL ADDRESS: P. O. BOX 5000

Serving The Best Location in the Nation

Dalwyn R. Davidson
VICE PRESIDENT - ENGINEERING

January 29, 1979

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

RE: Perry Nuclear Power Plant
Docket Nos. 50-440 and 50-441

Dear Mr. Regan:

In response to the January 26, 1979 telephone conversation of Mr. Ben Harless (NRC) with our Mr. Carl Banks, please find enclosed copies of the following PNPP licensing documents for Mr. Harless' review, information and files:

1. Ohio EPA 401 Certification (6-21-74)
2. Ohio EPA Permit to Install (12-2-75)
3. Army Corps of Engineers, Intake-Discharge Permit, No. 76-477-6 (3-29-77)
4. Ohio EPA questions regarding plant design (11-21-78) and CEI's responses

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

Very truly yours,

Dalwyn R. Davidson
Vice President - Engineering

DRD:ge
Enclosure (1)

7902050156

Cooper
ES
1/1

June 21, 1974

Mr. Harold L. Williams
Vice President - Engineering
The Cleveland Electric
Illuminating Company
Illuminating Building
55 Public Square
Cleveland, Ohio 44101

OhioEPA

John J. Gilligan
Governor
Dr. Ira L. Whitman
Director

Dear Mr. Williams:

Pursuant to Section 401 of the Federal Water Pollution Control Act, as amended, 33 U.S.C.A. § 1341, the Cleveland Electric Illuminating Company submitted an amended application on May 22, 1974 for certification by the State that the discharges from the proposed Perry Nuclear Power Plant, Units 1 and 2, would comply with the applicable provisions of Sections 301, 302, 306, and 307 of the Federal Water Pollution Control Act.

Having reviewed the amended application, I hereby certify that the discharges from the proposed Perry Nuclear Power Plant, if constructed in accordance with the general plans which were set forth in the amended application, will comply with the applicable provisions of Sections 301, 302, 306, and 307 of the Federal Water Pollution Control Act.

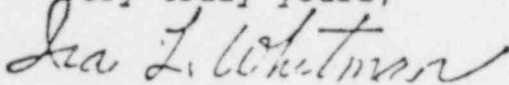
You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code by any person who was a party to this proceeding. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the

Mr. Harold L. Williams
June 21, 1974
Page 2

Ohio Environmental Protection Agency and the Environmental Law Section of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address:

Environmental Board of Review
Suite 505
33 North High Street
Columbus, Ohio 43215

Very truly yours,



Ira L. Whitman
Director

ILW/nm

cc: Michael L. Hardy
Donald H. Hauser
Samuel A. Bleicher
Chris Schraff

Re: Lake County
Perry Township
Final Order for the Perry Nuclear Power Plant Located in The
Village of North Perry, Lake County, Ohio

James A. Rhodes
Governor
Ned E. Williams, P.E.
Director

December 2, 1975

RECEIVED
N. E. DIVISION

CERTIFIED MAIL
OhioEPA

Cleveland Electric Illuminating Company
P.O. Box 5000
Cleveland, Ohio 44101

RECEIVED
DEC 5 1975

Attention: Mr. Harold Williams

OFFICE OF
H. L. WILLIAMS



Gentlemen:

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source in a manner indicated in the permit. Because this permit contains several conditions and restrictions I urge you to read it carefully.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code by any person who was a party to this proceeding. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address:

Environmental Board of Review
Suite 305
395 E. Broad Street
Columbus, Ohio 43216

Very truly yours,

Ned E. Williams, P.E.
Director

- Copy to Ms. Evelyn Stebbins, Citizens for Clean Air and Water
- " " Shaw, Pittman, Potts and Trowbridge, Washington, D.C.
- " " Atomic Energy Commission, Washington, D.C.
- " " Ohio Power Siting Commission
- " " Assistant Attorney General, Mr. Chris Schraf
- " " Lake County Health Department
- " " Northeast District Office, Engineering

OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install

Application No.: 02-074

Applicants Name: Cleveland Electric
Illuminating Company
Address: P.O. Box 5000

Permit Fee: \$250.00

City: Cleveland State: Ohio

Telephone:

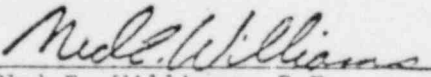
Description of Proposed Source: The Perry Nuclear Power Plant Located in the Village of North Perry, Lake County, Ohio. General Plans for all Non-Radioactive Air, Water and Solid Waste Discharges.

Issuance Date: December 2, 1975

Effective Date: December 2, 1975

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter EP-30 of the regulations of the Ohio Environmental Protection Agency. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto:

Ohio Environmental Protection Agency


by Ned E. Williams, P.E.
Director
361 East Broad Street
Columbus, Ohio 43215

Substantial construction for installation must take place within eighteen months of the effective date of this permit. This deadline may be extended by up to twelve months, if application is made to the Director no less than sixty days before the expiration of this permit and the party shows good cause for any such extension.

The proposed source shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records or reports pertaining to the construction, modification or installation of the above described source of environmental pollutants.

A permit fee specified above must be remitted within 15 days of the effective date of this permit to install, to the Treasurer, State of Ohio.

This permit shall apply only to the source shown on the plans approved by the Ohio Environmental Protection Agency.

A report, which provides a technical appraisal of the results obtained during normal operating conditions of the new facilities shall be submitted to the appropriate District Office of the Ohio Environmental Protection Agency no later than three months after the new facilities are placed into operation.

Construction of any wastewater treatment facilities shall be completed and ready for operation before the start of the process which generates the wastewater.

The appropriate District Office of the Ohio Environmental Protection Agency shall be notified, in writing as to (a) the construction starting date (b) the construction completion date and (c) the date the facilities were placed into operation.

The terms of the agreement for the installation, initial operation, and continued maintenance and operation of the wastewater treatment facilities are hereby made a part of this permit.

Sewer and manhole construction and joints shall conform to standards of this department.

Daily records of operation shall be maintained and submitted to the Ohio Environmental Protection Agency at the end of each month.

This permit applies treatment facilities designed to serve an average daily hydraulic flow of no more than 30,000 gallons.

The treatment plant shall be abandoned and the sanitary sewers connected to the public sanitary sewer system whenever such system becomes available.

The local health department having jurisdiction shall be notified prior to start of construction in order that construction of this source can be routinely inspected and approved by the local health department before being placed in operation.

Roof drains, foundation drains and other clean water connections to the sanitary sewers shall be prohibited in accordance with legally adopted rules regulating the use of sanitary sewers.

No liquids, sludges, or toxic or hazardous wastes other than those set forth in the approved specifications and plans shall be accepted for disposal without the written approval of the Agency.

Samples of filtering material proposed for use in the filters shall be acceptable to this Agency before placing.

Before any construction is begun, detail plans, drawn in accordance with approved general plans and all regulations of the Ohio Environmental Protection Agency, must be submitted to and approved by the Director. Approval of such detailed plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations.

Should there be any questions regarding the requirements, meaning or interpretations of any of the above which we may clarify, please contact the appropriate District Office of the Ohio Environmental Protection Agency.



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

NOTICE OF AUTHORIZATION

29 MARCH 1977

PERMIT TO CONSTRUCT A CONCRETE INTAKE TUNNEL AND CONCRETE DISCHARGE TUNNEL. THE DISCHARGE AND INTAKE STRUCTURES WILL BE PROTECTED BY CONCRETE FILLED STEEL CAISSONS: ALL SPOIL MATERIAL WILL BE DEPOSITED ON UPLAND PROPERTY ABOVE HIGH WATER IN ESTABLISHED DISPOSAL AREAS IN LAKE ERIE

PAINESVILLE, LAKE COUNTY, OHIO

HAS BEEN ISSUED TO THE CLEVELAND ELECTRIC ILLUMINATING COMPANY ON 29 MARCH 1977

ADDRESS OF PERMITTEE P.O. BOX 5000
CLEVELAND, OH 44101

PERMIT NUMBER 76-477-6

Daniel B. Ludwig
DANIEL B. LUDWIG, COL., CE
District Engineer

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK.

3-29-77

INT-113



DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: Public Notice No. 76-477-6
Applicant: Cleveland Electric Illuminating Company

29 March 1977

Carl D. Banks, Senior Chemical Engineer
Nuclear Engineering Department
The Cleveland Electric Illuminating Company
P.O. Box 5000
Cleveland, OH 44101

INTAKE
DISCHARGE

Dear Mr. Banks:

In accordance with your request of 8 March 1976, enclosed is a Department of the Army permit authorizing The Cleveland Electric Illuminating Company to perform the work described in the referenced public notice presented for public review.

Please note condition (n) of the permit which requires that our office be informed of the commencement and completion of the authorized work. Forms for this purpose are enclosed. Also enclosed is a Notice of Authorization which must be conspicuously displayed at the site of work.

Revised plans must be submitted to our office if material changes in the location or plans of the work are necessary because of unforeseen or altered conditions, or otherwise. These revised plans must receive the approval required by law before construction is started.

Please acknowledge receipt of the permit.

Sincerely yours,

PAUL F. GAUME, Chief
Regulatory Functions Branch

- 5 Incl
- 1. Permit
- 2. Form 8
- 3. Form 9
- 4. ENG Form 4336
- 5. C.G. Notice

WRE

WMB

NED FILE

WJK WAG

DEPARTMENT OF THE ARMY
PERMIT

REIMBURSABLE COSTS
GOVERNMENT INSPECTION

NCBCO-S
No. 76-477-6

Buffalo District
Corps of Engineers
Buffalo, NY 14207

29 March 1977
(Effective Date)

Referring to written request dated 8 March 1976, for a permit to:

- (X) Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 403);
- (X) Discharge dredged or fill material into navigable waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

The Cleveland Electric Illuminating Company, P.O. Box 5000, Cleveland, Ohio 44101 is hereby authorized by the Secretary of the Army: to construct a 10-foot diameter concrete intake tunnel and a 10-foot diameter concrete discharge tunnel. Each intake structure will be protected by 16 concrete filled steel caissons 48 inches in diameter and the discharge nozzle will be protected by 10 caissons. All spoil material will be deposited on upland property above high water in established upland disposal areas. The work is located in Lake Erie near Painesville, Lake County, Ohio, in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit. Subject to the following conditions:

1. GENERAL CONDITIONS:

- a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit, nor that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.
- b. That all activities authorized herein shall, if they involve a discharge or deposit into navigable waters or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, and pretreatment standards established pursuant to Sections 301, 302, 306 and 307 of the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), or pursuant to applicable State and local law.
- c. That when the activity authorized herein involves a discharge or deposit of dredged or fill material into navigable waters, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.
- d. That the permittee agrees to make every reasonable effort to prosecute the construction or work authorized herein in a manner so as to minimize any adverse impact of the construction or work on fish, wildlife and natural environmental values.
- e. That the permittee agrees that it will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.
- f. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.
- g. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.
- h. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations, nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.
- i. That this permit does not authorize the interference with any existing or proposed Federal project and that the permittee shall not be entitled to compensation for damage or injury to the structures or work authorized herein which may be caused by or result from existing or future operations undertaken by the United States in the public interest.
- j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit shall be either notified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit; or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

o. That if the activity authorized herein is not started within one (1) year from effective date of this permit, and is not completed on or before the 31st day of December 1980, this permit, if not previously revoked or specifically extended, shall automatically expire.

p. That no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized by this permit.

q. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

r. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

s. That if and when the permittee desires to abandon the activity authorized herein, unless such abandonment is part of a transfer procedure by which the permittee is transferring his interests herein to a third party pursuant to General Condition v hereof, he must restore the area to a condition satisfactory to the District Engineer.

t. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

u. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

v. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with the deed with the Register of Deeds or other appropriate official.

II. SPECIAL CONDITIONS:

"SEE ATTACHED SPECIAL CONDITION"

This permit shall become effective on the date of the District Engineer's signature. Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

THE CLEVELAND ELECTRIC ILLUMINATING CO.

By Authority of the Secretary of the Army:

By: D. R. Davidson Vice President
 Permittee Title
March 24, 1977
 Date

Daniel D. Ludwig
 DANIEL D. LUDWIG, COL, CE
 District Engineer
29 March 1977
 Date

Transferee hereby agrees to comply with the terms and conditions of this permit.

 Transferee Date

SPECIAL CONDITION:

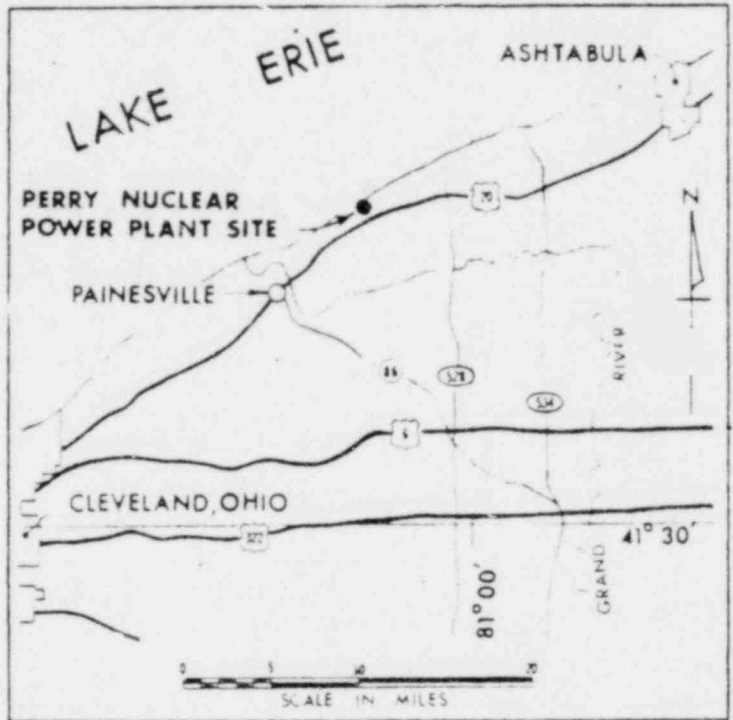
(a) That the permittee agrees to reimburse the Federal Government for the cost of a survey required after completion of the activity authorized herein, to determine that the intake and discharge structures provide the clearance below low water datum elevation 568.6 (International Great Lakes Datum, 1955) as indicated in the permit.

PROPERTY OWNERS

AT WORK SITE:
 THE CLEVELAND ELECTRIC ILLUMINATING CO.
 P.O. BOX 5000
 CLEVELAND, OHIO 44101

WEST OF WORK SITE:
 NEFF PERKINS - MR. CHARLES NEFF, PRES.
 P.O. BOX 550
 PAINESVILLE, OHIO 44077

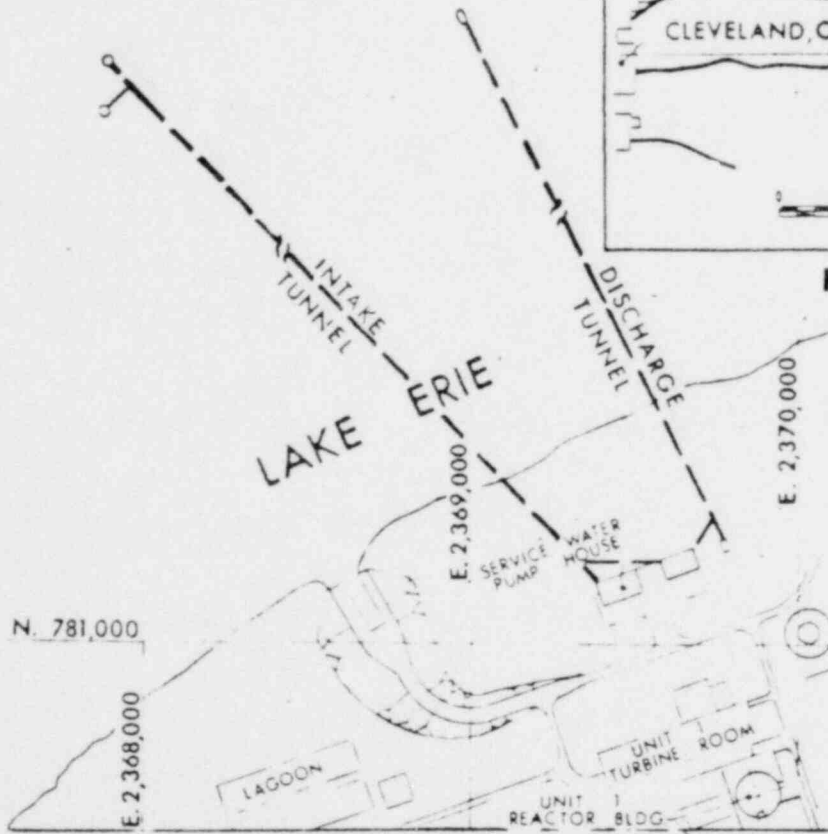
EAST OF WORK SITE:
 MARY CORRIGAN DANIELS
 7123 CEDAR RD.
 CHESTERLAND, OHIO 44026



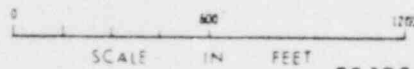
KEY MAP

NOTES:

1. ALL EXCAVATED MATERIALS WILL BE PLACED ON UPLAND PROPERTY ABOVE HIGH WATER.
2. ALL ELEVATIONS ARE IN FEET ABOVE MEAN WATER LEVEL AT FATHER POINT, QUEBEC, INTERNATIONAL GREAT LAKES DATUM, 1955.
3. GRID SYSTEM SHOWN IS BASED ON THE OHIO STATE COORDINATE GRID SYSTEM.



VICINITY PLAN



PROPOSED WATER INTAKE AND DISCHARGE STRUCTURES

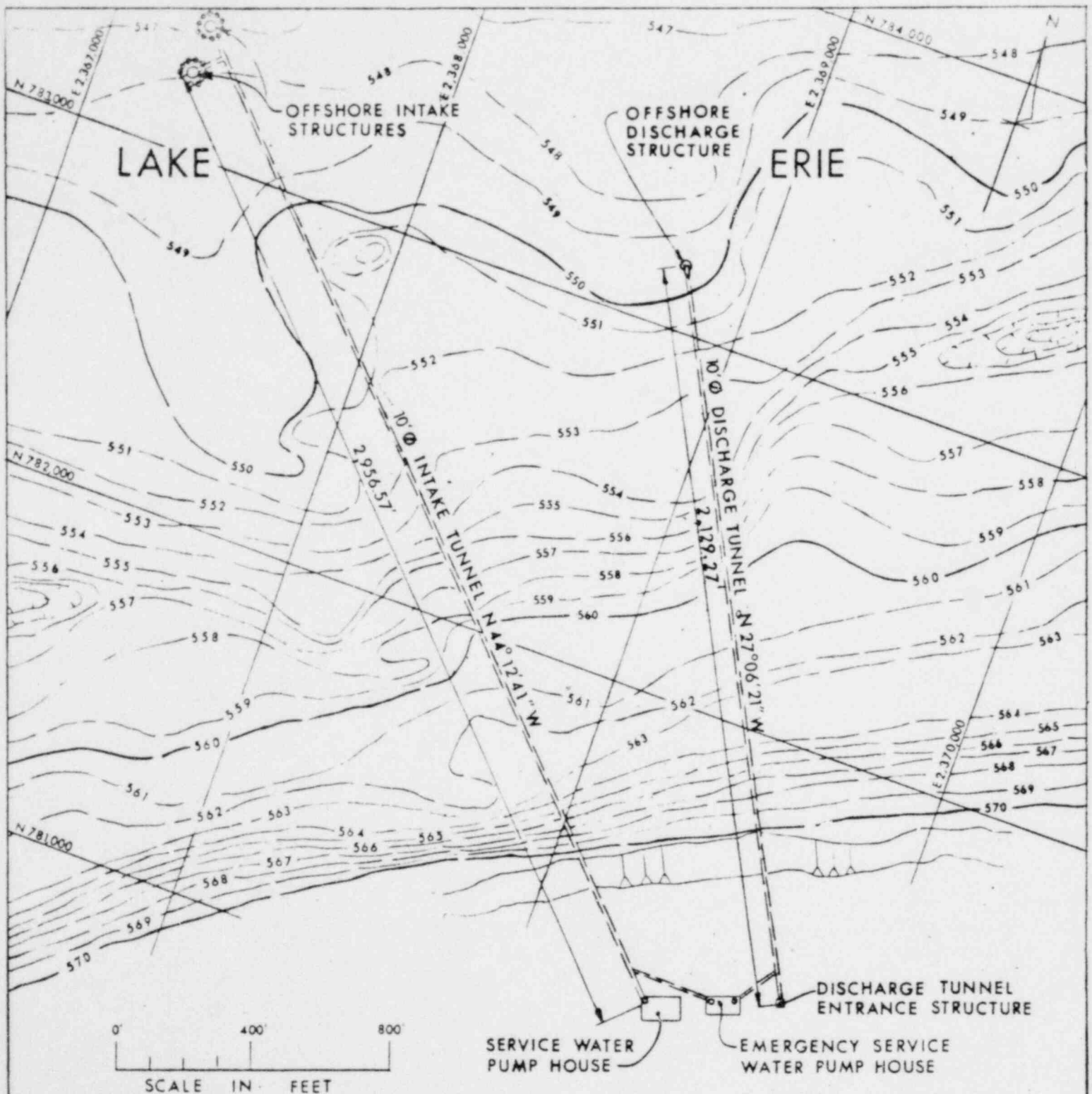
IN LAKE ERIE, 7 MILES NE OF PAINESVILLE

LAKE COUNTY, OHIO

APPLICATION NO.

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

JANUARY, 1976



NOTE:

ALL CONTOUR ELEVATIONS ARE IN FEET ABOVE MEAN WATER LEVEL AT FATHER POINT, QUEBEC, INTERNATIONAL GREAT LAKES DATUM, 1955.

PROPOSED WATER INTAKE AND DISCHARGE STRUCTURES
IN LAKE ERIE, 7 MILES NE OF PAINESVILLE
LAKE COUNTY, OHIO

APPLICATION BY:
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

JANUARY, 1976

REVISION 2 AUG. 77

SHEET 2 OF 5

NOTE

ALL ELEVATIONS ARE IN FEET ABOVE MEAN WATER LEVEL AT FATHER POINT, QUEBEC, INTERNATIONAL GREAT LAKES DATUM, I.L.

LAKE ERIE

HIGH MONTHLY MEAN WL. 573.5

LOW WATER DATUM EL. 568.6

SERVICE WATER PUMP HOUSE

FL. EL. 542.68

APPROX. BOT. OF LAKE

10' DIA. INTAKE RISER SHAFT

10' DIA. CONCRETE INTAKE TUNNEL

CAISSON MAX. TOP EL. 555.9

INTAKE HEAD (2 REQ'D)

6' DIA. DOWNSHAFT

INV. EL. 434.1

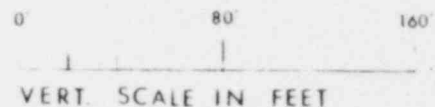
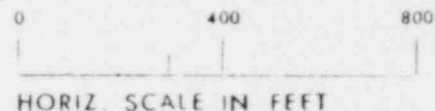
S=0052

3,057

10' INTAKE TUNNEL

INV. EL. 449.9

PROFILE- INTAKE TUNNEL



DISCHARGE TUNNEL ENTRANCE STRUCTURE

LAKE ERIE

FL. EL. 601.1

LOW WATER DATUM EL. 568.6

APPROX. BOT. OF LAKE

10' DIA. DISCHARGE DOWNSHAFT

10' DIA. CONCRETE DISCHARGE TUNNEL

CONC. CAISSON TOP EL. 556.4

DISCHARGE NOZZLE ϕ EL. 552.4

6' DIA. RISER SHAFT

INV. EL. 438.9

S=0055

2,129.27

INV. EL. 450.7

PROFILE- DISCHARGE TUNNEL

PROPOSED WATER INTAKE AND DISCHARGE STRUCTURES

DESIGNED BY J. W. H. HARRIS, CIVIL ENGINEER, TORONTO, ONTARIO

APPROVED BY J. W. H. HARRIS

ENGINEERING COMPANY

JANUARY 1978

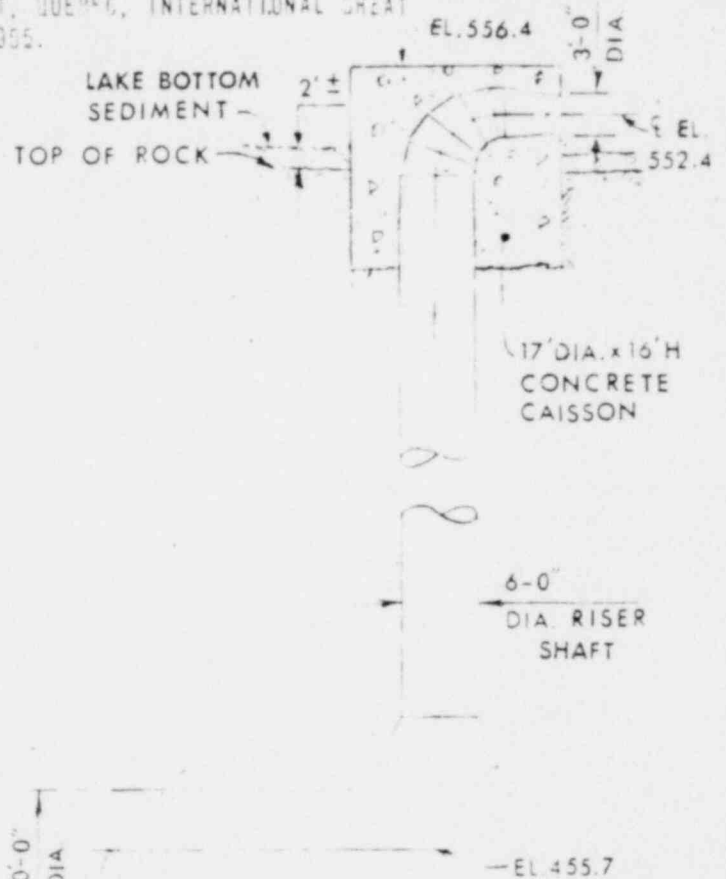
REVISION 2 AUG 77

SHEET 2 OF 3

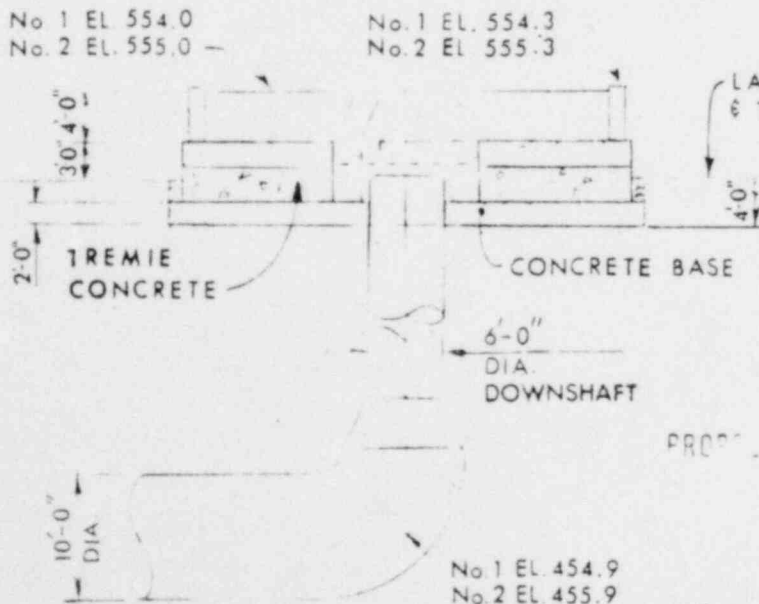
ALL ELEVCS. ARE IN FEET ABOVE MEAN WATER LEVEL
AT FATHER POINT, QUEBEC, INTERNATIONAL GREAT
LAKES DATUM, 1955.



**INTAKE HEAD
PLAN
(2 REQ'D.)**



**DISCHARGE
NOZZLE**

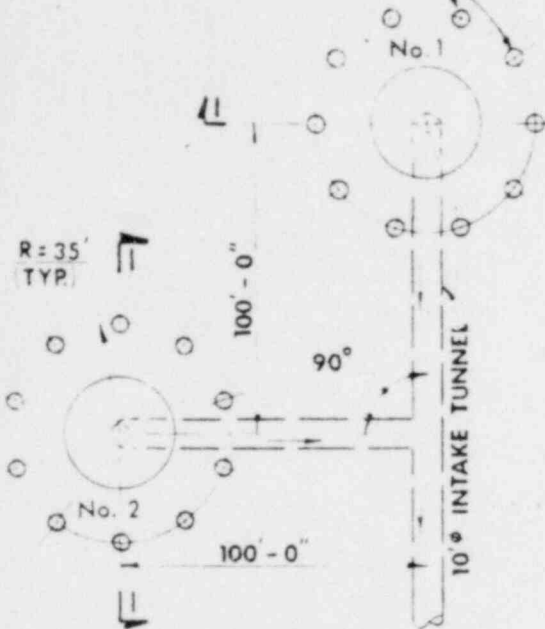


**INTAKE HEAD
SECTION**

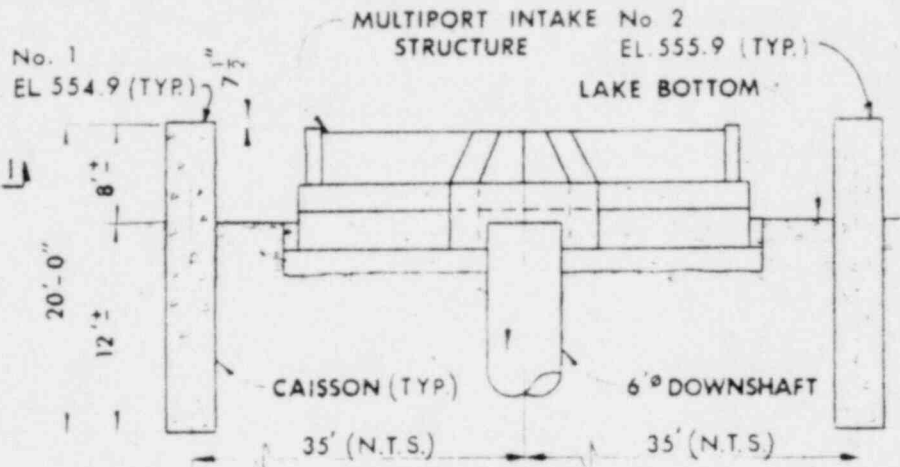
PROPOSED WATER INTAKE AND DISCHARGE STRUCTURE
8 LANE ELEV. 7 MILES N.W. OF PARADISVILLE
LAKE COUNTY, OHIO

APPLICATION BY:
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
JANUARY, 1976

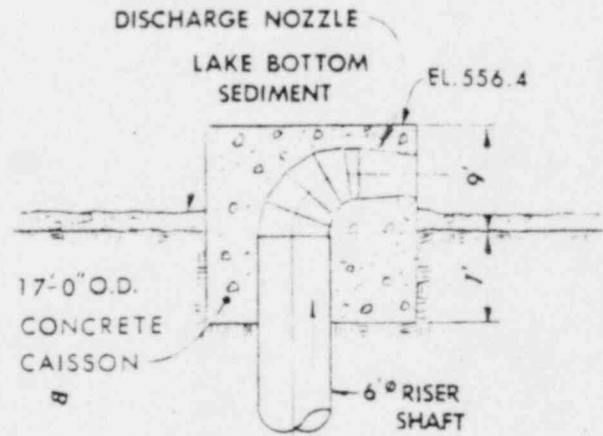
10 CAISSONS
REINFORCED CONCRETE
72" O.D. STEEL PIPE (TYP.)



INTAKE STRUCTURES

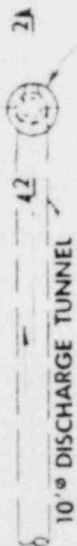


SECTION 1-1

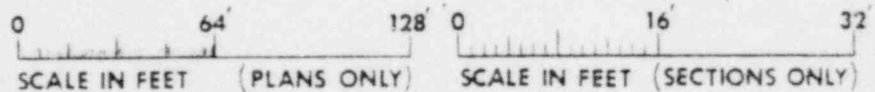


SECTION 2-2

NOTE:
ALL ELEVS. ARE IN FEET ABOVE MEAN
WATER LEVEL AT FATHER POINT, QUEBEC,
INTERNATIONAL GREAT LAKES DATUM, 1955.



DISCHARGE STRUCTURE



PROPOSED WATER INTAKE AND DISCHARGE STRUCTURES
IN LAKE ERIE, 7 MILES NE OF PAINESVILLE
LAKE COUNTY, OHIO

APPLICATION BY:
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
JANUARY, 1976



Mr. Carl Banks, Senior Engineer
The Cleveland Electric Illuminating Company
P.O. Box 5000
Cleveland, Ohio 44101

November 21, 1978

Dear Mr. Banks:

We received information from you concerning the Perry Nuclear Power Plant (PNPP) on November 8, 1978. However, a few issues discussed at our October 12, 1978 meeting remain unresolved. Below, the issues in question are presented according to the writer's understanding. Please respond with any necessary clarifications, corrections and justifications. The plan approval procedure cannot continue until these issues are resolved.

1. The auxiliary cooling water (also called service water) is used in a cooling system that is completely separate from the reactor cooling water system. The auxiliary water will use once-through cooling, completely bypassing the cooling towers. The entire amount of auxiliary cooling water (maximum of 39,000 gpm per unit) will be pumped from Lake Erie, through the condensers and back to the lake. However, the general plans for the PTI and the 401 certification clearly state that 21,050 gpm per unit (maximum) of the total 39,000 gpm per unit (maximum) auxiliary cooling water would be used as cooling tower makeup in the corresponding unit. Thus, only 17,950 gpm per unit (maximum) would be discharged to the lake. The auxiliary cooling water will have ΔT of 15°F but will have a temperature reading less than the coolside blowdown from the cooling towers (90°F).
 - a. Please make any necessary clarifications in the above statement, and/or
 - b. Explain why the auxiliary cooling water cannot be used for cooling tower makeup.
2. 2.5 cycles of concentration were used in the design criteria even though data supplied to our Central Office shows 4 cycles of concentration is nonlethal. Furthermore, a letter addressed to you from Mr. Milton G. Capriotti and J. P. Sockei, dated October 17, 1978, stated that doubling the cycles of concentration to 5 would decrease the heat rejection by approximately 10% or 49.3×10^6 BTU/Hr. We consider a 10% decrease to be significant. Please justify your choice of 2.5 cycles of concentration.

Mr. Carl Banks, Senior Engineer
November 21, 1978
Page 2

From reviewing our files and the discussion at the October 12, 1978 meeting, the writer understands the following points as described below. Please respond appropriately, making any necessary clarifications and/or corrections.

1. Pre-operational cleaning wastes will include 1,500 pounds of sodium hydroxide (NaOH) and 1 ton of phosphorous containing detergents. The wastes will be treated in a lined lagoon, where the phosphates will be precipitated with hydrated lime. The overflow will be discharged to the lake.
2. Regenerants will be neutralized and will be discharged to the lake via a settling pond.
3. No rust inhibitors will be added to water at the PNPP.
4. The following waste streams will be treated and will be completely reused (i.e., no blowdown) as makeup within the plant.
 - a. Floor drains (after oil removal)
 - b. Filter backwash
 - c. Sludge lagoon underdrains
 - d. Cooling tower basin cleaning
 - e. Auxiliary boiler blowdown
 - f. Labs and sampling wastes
 - g. Sump wastes
5. Will there be any chemical cleaning wastes from generator tube cleaning? If so, how will these wastes be treated?
6. The Report on General Plans for the PTI and 401 Certification indicates that wastewater sludges will be trucked off-site. Lime sludges may be dewatered and hauled to an approved site or disposed on-site. Sludge disposal should be approved by the Office of Land Pollution Control of the Ohio EPA.
7. It is the writer's understanding that the PNPP has been designed to meet the New Source Performance Guidelines. Please supply a written statement to this effect.

Mr. Carl Banks, Senior Engineer
November 21, 1978
Page 3

Your response to the above issues will facilitate the plan approval procedure.
Thank you for your cooperation.

Yours truly,

Melinda Merryfield-Secker

Melinda Merryfield-Secker
Environmental Scientist

MMB/fmk

1. There are three different cooling water systems that can affect the discharge to Lake Erie. They are the circulating water system (CW), the service water system (SW) and the emergency service water system (ESW).

The ESW system functions during a normal plant shutdown or following a loss of coolant accident (LOCA) to remove residual heat from nuclear components and the reactor. It does not function during normal operation. It is an open cooling water system, which pumps about 22,700 gpm/unit of water directly from the lake, through the heat exchangers, and back to the lake. It is completely separate from the other two systems.

The SW system functions during normal plant operation to cool miscellaneous non-nuclear components in the plant. It is an open cooling water system which pumps about 69,400 gpm (both units) from the lake. The CW system functions during normal plant operation to remove waste heat from the plant condensers and reject this heat to the atmosphere through the cooling towers. The CW system is a closed cycle system which circulates about 545,000 gpm in a closed loop. Makeup to the cooling towers is taken from the SW discharge before it reaches the lake. Blowdown from the cooling towers is added back into the SW discharge before it reaches the lake. Cooling tower evaporation, makeup, and blowdown varies with the atmospheric conditions. The net result is a range of SW discharge flows to the lake of 43,000 gpm to 50,400 gpm (monthly average flows). The maximum makeup flow to each unit's cooling tower is 21,978 gpm (monthly average), however, 8,745 gpm per cooling tower blowdown is added back into the SW discharge at the same time. The net return flow is 42,934 gpm (roughly 43,000 gpm). The cooling tower blowdown temperature varies from 68°F to 86°F and is usually higher than the SW discharge temperature which varies from 49°F to 89°F (monthly average temperatures).

2. 2½ cycles of concentration was chosen to minimize the total dissolved solids to 535 mg/l in the CW system and blowdown flow. If 5 cycles of concentration were chosen, the TDS in the CW blowdown would be 1070 mg/l.

Another consideration in choosing $2\frac{1}{2}$ cycles of concentrations was to minimize the corrosion problems in the plant equipment (especially chloride pitting of the stainless steel condenser tubes) and to minimize scaling problems in the cooling towers. With $2\frac{1}{2}$ concentrations, the chlorides would be at 95 mg/l and at 5 concentrations, the chlorides would be at 190 mg/l.

The cooling tower drift is a very small flow (55 gpm) and as such is not significant. However, doubling the cooling tower concentrations would double the amount of solids deposited by the cooling tower drift.

We consider the difference in heat rejection between a $2\frac{1}{2}$ cycle concentration system and a 5 cycle concentration system to be insignificant. The difference (49.3×10^6 BTU/hr) is only .3% of what was originally intended to be discharged to the lake ($16,802 \times 10^6$ BTU/hr). Also, this is not the yearly average affect, but the effect for the worst month (March). During certain months (July, August and September), the effect is reversed and the CW blowdown helps to decrease the plant discharge temperature (CW blowdown temperatures are lower than SW discharge temperatures). So during these months, there is less heat rejection to the lake with a $2\frac{1}{2}$ cycles of concentration system than with a 5 cycles of concentration system.

The decision to use $2\frac{1}{2}$ cycles of concentration was made in June of 1974 and all affected equipment has been sized accordingly. The number of cycles of concentration and all other characteristics of the plant's water systems were described in CEI's Application for Ohio EPA Permit to Install, transmitted to Dr. Ira J. Whitman, Director Ohio EPA from Harold Williams, Executive Vice President of CEI on June 10, 1974.

1. Preparational cleaning wastes will contain approximately 1,500 pounds of sodium phosphate compound containing some biodegradable wetting agents or detergents. The wastes will be treated with hydrated lime in a lined lagoon to precipitate the phosphate. After a suitable settling time, the clear supernatant, which will now only contain the sodium from the original sodium phosphate waste, will be discharged to the main plant effluent. The total volume of this supernatant would be approximately one million gallons containing approximately 1,500 pounds of sodium as sodium hydroxide. If the supernatant exceeds the limit of pH9 it would be adjusted to between the range pH6 through 9 before being discharged. The precipitate will be physically removed and hauled to an approved off site disposal area.
2. The makeup demineralizer regenerant wastes will be neutralized and discharged to the lake via main plant discharge. All other plant regenerant wastes will be routed to the plant radwaste system.
3. This statement is correct.
4.
 - a. All floor drains will be reused within the plant after oil removal except the floor drain from the Hypochlorite Generating Building. This drains rainwater and a safety shower from a pipe trench in the building to a yard catch basin. The only other exception is floor drains in the upper control building complex which only serve to carry off fire system deluge water to the yard drains.
 - b. This statement is correct.
 - c. This statement is correct.
 - d. No chemicals will be used to clean the cooling tower basins. Normally the basins do not require cleaning; however, they may be physically cleaned after several years of operation by draining and physically removing any accumulated sediment.
 - e. Auxiliary boiler blowdown is directed to the plant radwaste system.
 - f. Labs and sampling wastes are directed to the plant radwaste system.
 - g. All sumps on PNPP are collection points for floor or yard drains and are handled as drains. Please further define or clarify what is meant by sump wastes if deemed further information is necessary.
5. There will be no chemical cleaning wastes of this type since the PNPP is an advanced design boiling water type reactor and will not have steam generator tubes which require cleaning.
6. Off-site disposal sites for waste water sludges will be as approved by the Office of Land Pollution Control of the Ohio EPA.
7. As outlined in the third paragraph of Mr. Donald Rouser's letter to Dr. Ira L. Whitman, OEPA, dated June 6, 1974, it is the intent of the PNPP to comply with the United States Environmental Protection Agency guidelines respecting steam electric power plants as they are finally adopted. Any variation in the Company's design from the final guidelines will be corrected to match those guidelines.