



Metropolitan Edison Company
Post Office Box 480
Middletown, Pennsylvania 17057
717 944-4041

Writer's Direct Dial Number

March 10, 1980

TLL 101

Operating Reactors Branch No. 4
Attn: R. W. Reid, Chief
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

Dear Sir:

Three Mile Island Nuclear Station, Units I and II (TMI-1 and TMI-2)
Operating License Nos. DPR-50 and DPR-73
Docket Nos. 50-289 and 50-320
Permit Modifications

In response to your letter of January 25, 1980, concerning the reporting of changes and additions to permits and certificates for the protection of the environment, enclosed please find copies of the items listed below. With this submittal we have fully complied with the Technical Specification requirements.

1. ARMY CORPS OF ENGINEERS

Permit NABOP-F/4 75-1048. Permits maintenance dredging.

2. ARMY CORPS OF ENGINEERS

Permit NABOP-F/4 75-1048. Amendment. Allows relocation of dredge spoil basin.

3. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Authorization to Conduct Fire Brigade Training as required by NRC for 1978.

4. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Authorization to Conduct Fire Brigade Training as required by NRC for 1979.

5. ENVIRONMENTAL PROTECTION AGENCY

NPDES Permit 0009920 Amendment No. 3.

(Note: NPDES permit was submitted to NRC by our letter dated 1/14/77 (GQL 0006). Amendments 1 and 2 were submitted by our letter dated 8/3/77 (GQL 1050).)

6. ENVIRONMENTAL PROTECTION AGENCY

Request for consideration for a 301(c) and 301(g) modification.

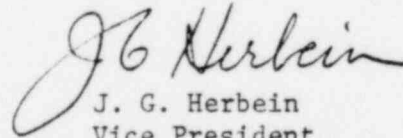
Metropolitan Edison Company is a Member of the General Public Utilities System

COO4
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-11

8003170 453

6. ENVIRONMENTAL PROTECTION AGENCY (Con't.)
(Note: Request still pending.)
7. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
NPDES Permit 0009920. Reapplication for a new permit.
(Note: Application still pending.)
8. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Approval to Clean TMI-I Cooling Towers dated 6/4/79.
(Prior approval dated 1/29/79, which is incorporated in this approval, is included.)
9. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Industrial Waste Permit No. 2270204. Amendment.
(Note: This amendment cancels the termal requirements of the permit which are now covered in Industrial Waste Permit No. 227206 which was submitted to NRC by our letter dated 3/15/78, GQL 0432.)
10. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Sewage Permit No. 2275419 Amendment No. 2.
(This amendment extends permit expiration date. The TMI sewage plant is currently not in service. Permit No. 2275419 was submitted to NRC by letter dated 1/14/77, GQL 0046 and Amendment 1 was submitted by letter dated 8/30/79, GQL 1108.)

Sincerely,



J. G. Herbein
Vice President
Nuclear Operations

JGH:DGM:hah

Enclosures

cc: J. T. Collins



REPLY TO ATTENTION OF:

①
DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

Rec'd
JAN 21 1976

NABOP-F/4 (Metro. Edison Co.) 75-1048

19 January 1976

Metropolitan Edison Company
Post Office Box 542
Reading, Pennsylvania 19603

Gentlemen:

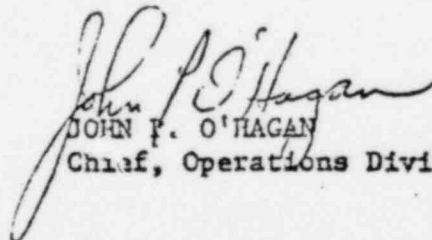
In response to your application for a Department of the Army permit, there are inclosed an original and one copy of permit form NADB FL 1000.

It is requested that you indicate your acceptance of the terms and conditions set forth in the inclosed permit by placing your signature and the date signed on page 4 thereof. Upon your acceptance of the terms and conditions, you are authorized to proceed with the construction indicated therein. Your particular attention is invited to conditions (b), (r), (s), and (v) of the permit.

The copy of the permit signed by you should be returned for retention in the records of this office. A self-addressed, franked envelope is inclosed for this purpose. Also inclosed is your NOTICE OF AUTHORIZATION, ENG FORM 4336, which must be conspicuously displayed at the site of the work prior to its commencement.

Your early response in this matter would be appreciated.

Sincerely yours,


JOHN P. O'HAGAN
Chief, Operations Division

3 Incls
As stated

Attachments: Obstruction Light Regs.
Ltr fr EPA



DEPARTMENT OF THE ARMY

PERMIT

NABOP-F/4(Metro. Edison Co.)75-1048

U.S. Army Engineer District, Baltimore
Corps of Engineers
P.O. Box 1715, Baltimore, Md. 21203

Metropolitan Edison Company
Post Office Box 542
Reading, Pennsylvania 19603

Referring to written request dated 10 September 1975 upon the recommendation of the Chief of Engineers, and under the provisions of Section 10 of the Act of Congress approved March 3, 1899 (33 U.S.C. 403), entitled "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," you are hereby authorized by the Secretary of the Army(Authority is also granted under the provisions of Section 404 of the Federal Water Pollution Control Act, 86 Stat. 816, P.L. 92-500) to suction dredge approx. 3000 cu.yds of sand, silt, gravel, and coarse sand from the intake channels of units 1 and 2, and the East-West low flow channel; to place the spoil material in the designated upland disposal area; and to maintenance dredge said channels for a 10 year period

in Susquehanna River

at Three Mile Island, Dauphin County, Pennsylvania

in accordance with the plans and drawings attached hereto titled:
"FIGURE 1 PROPOSED REMEDIAL DREDGING, FIGURE 2 AREA OF PROPOSED DREDGING,
FIGURE 3 DREDGE DISPOSAL AREAS, FIGURE 4 SUCTION DREDGE DISPOSAL BASIN"
ALL IN THREE MILE ISLAND NUCLEAR STATION,

subject to the following conditions:

(a) That this instrument 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 private property or invasion of private rights, or any infringement of Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining State or local assent required by law for the structure or work authorized.

(b) That the structure or work authorized herein shall be in accordance with the plans and drawings attached hereto and construction shall be subject to the supervision and approval of the District Engineer, Corps of Engineers, in charge of the District in which the work is to be performed.

(c) That the District Engineer may at any time make such inspections as he may deem necessary to assure that the construction or work is performed in accordance with the conditions of this permit and all expenses thereof shall be borne by the permittee.

(d) That the permittee shall comply promptly with any lawful regulations, conditions, or instructions affecting the structure or work authorized herein if and when issued by the Federal Water Quality Administration and/or the State water pollution control agency having jurisdiction to abate or prevent water pollution, including thermal or radiation pollution. Such regulations, conditions or instructions in effect or hereafter prescribed by the Federal Water Quality Administration and/or the State agency are hereby made a condition of this permit.

(e) That the permittee will maintain the work authorized herein in good condition in accordance with the approved plans.

(f) That this permit may, prior to the completion of the structure or work authorized herein, be suspended by authority of the Secretary of the Army if it is determined that suspension is in the public interest. *

(g) That this permit may at any time be modified by authority of the Secretary of the Army if it is determined that, under existing circumstances, modification is in the public interest. * The permittee, upon receipt of a notice of modification, shall comply therewith as directed by the Secretary of the Army or his authorized representative.

(h) That this permit may be revoked by authority of the Secretary of the Army if the permittee fails to comply with any of its provisions or if the Secretary determines that, under the existing circumstances, such action is required in the public interest. *

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

(j) That the United States shall in no way be liable for any damage to any structure or work authorized herein which may be caused by or result from future operations undertaken by the Government in the public interest.

(k) That no attempt shall be made by the permittee to forbid the full and free use by the public of all navigable waters at or adjacent to the structure or work authorized by this permit.

(l) 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.

(m) That the permittee shall notify the District Engineer at what time the construction or work will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of its completion.

(n) That if the structure or work herein authorized is not completed on or before 31st day of December, 1986, this permit, if not previously revoked or specifically extended, shall cease and be null and void.

(o) That the legal requirements of all Federal agencies be met.

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

(q) That all the provisions of this permit shall be binding on any assignee or successor in interest of the permittee.

(r) 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 Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

(s) 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. (See EPA Ltr attached)

(t) That the permittee agrees that it will prosecute the construction of work authorized herein in a manner so as to minimize any degradation of water quality.

(u) That the permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the authorized structure or work, shall, without expense to the United States, at the direction of the Secretary of the Army and in such time and manner as the Secretary or his authorized representative may direct, restore the waterway to its former condition. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designee may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

(v) That no building or other structure may be erected on the fill authorized by this permit unless such building or other structure is appropriately identified and described in the plans and drawings attached hereto; that buildings or other structures authorized by this permit, once erected, may not be significantly modified in their outward appearance or torn down and other buildings or structures erected in their place unless a modification of this permit is authorized by the Secretary of the Army or his authorized representative; and that neither the fill itself nor buildings or structures erected in accordance with the plans and drawings attached hereto may be dedicated to any different use than that contemplated at the time of issuance of this permit unless modification of this permit is authorized by the Secretary of the Army or his authorized representative.

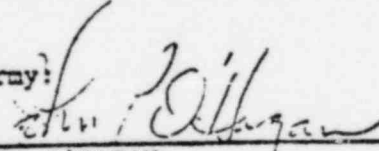
(w) MAINTENANCE DREDGING:

(1) That when the work authorized herein includes periodic maintenance dredging it may be performed under this permit for 10 years from the date of issuance of this permit; and (2) That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake any maintenance dredging:

* A judgment as to whether or not suspension, modification or revocation is in the public interest involves a consideration of the impact that any such action or the absence of any such action may have on factors affecting the public interest. Such factors include, but are not limited to navigation, fish and wildlife, water quality, economics, conservation, aesthetics, recreation, water supply, flood damage prevention, ecosystems and, in general, the needs and welfare of the people

By authority of the Secretary of the Army:

Issued for & in behalf of
Colonel Robert S. McGarry
District Engineer


JOHN P. O'HAGAN
Chief, Operations Division

JAN 19 76

Date

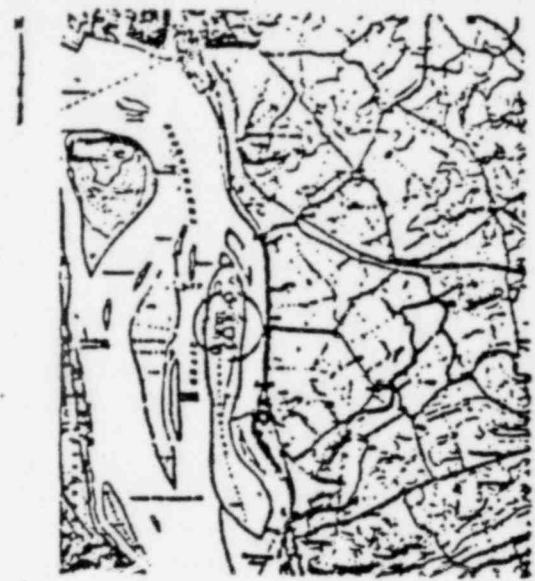
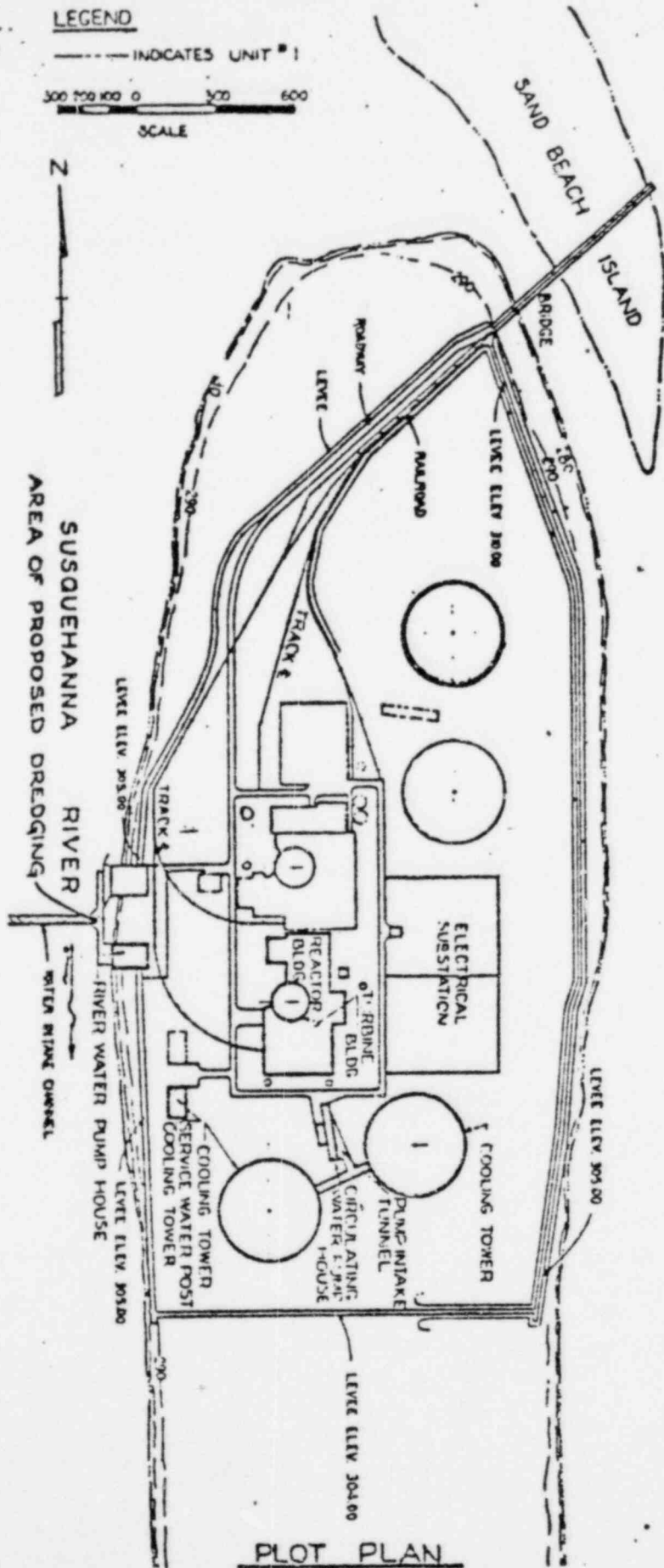
Permittee hereby accepts the terms and conditions of this permit.

NADE FL 1000a
Rev. 26 Nov 73


Permittee

2/17/76

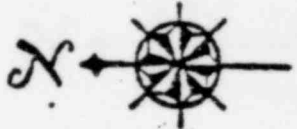
Date



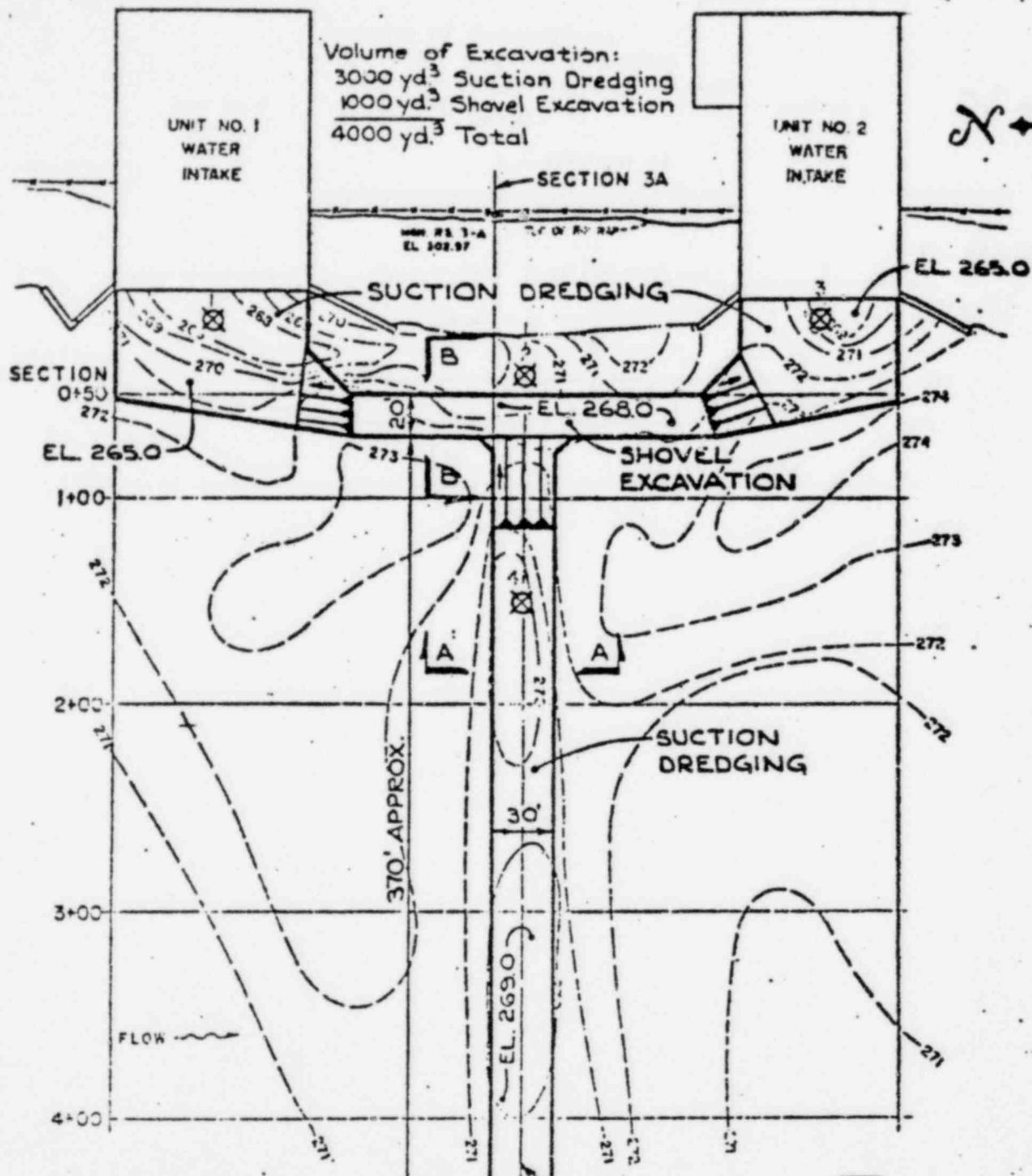
LOCATION MAP

2000 1000 0 2000 4000
 SCALE

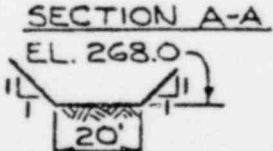
FIGURE 1
PROPOSED REMEDIAL DREDGING
THREE MILE ISLAND NUCLEAR STATION



Volume of Excavation:
 3000 yd.³ Suction Dredging
 1000 yd.³ Shovel Excavation
 4000 yd.³ Total



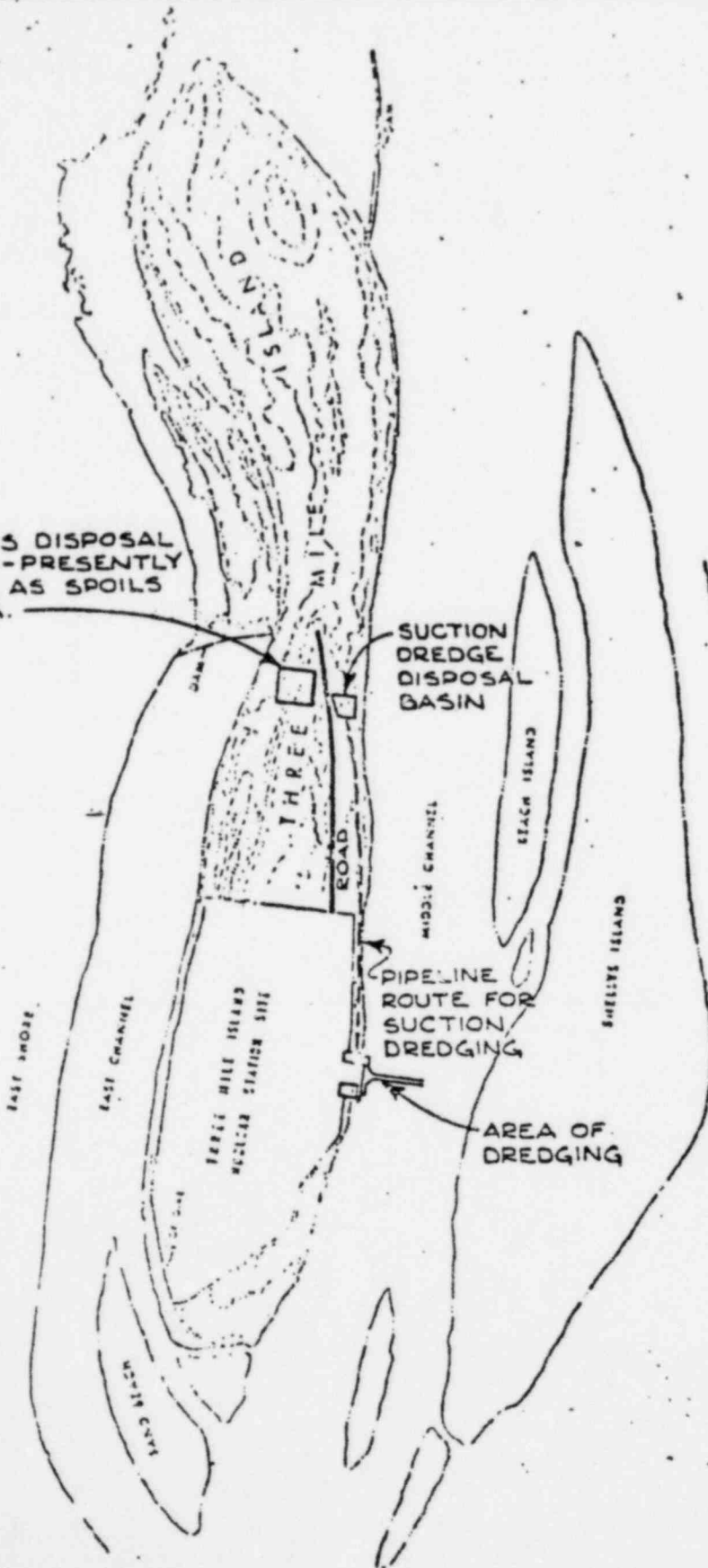
- LEGEND**
- ⊗ BOTTOM SAMPLE LOCATIONS
 - NO. 1 SANDY SILT
 - NO. 2 SANDY GRAVEL
 - NO. 3 SANDY SILT
 - NO. 4 COARSE SAND



SECTION A-A
SECTION B-B

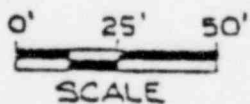
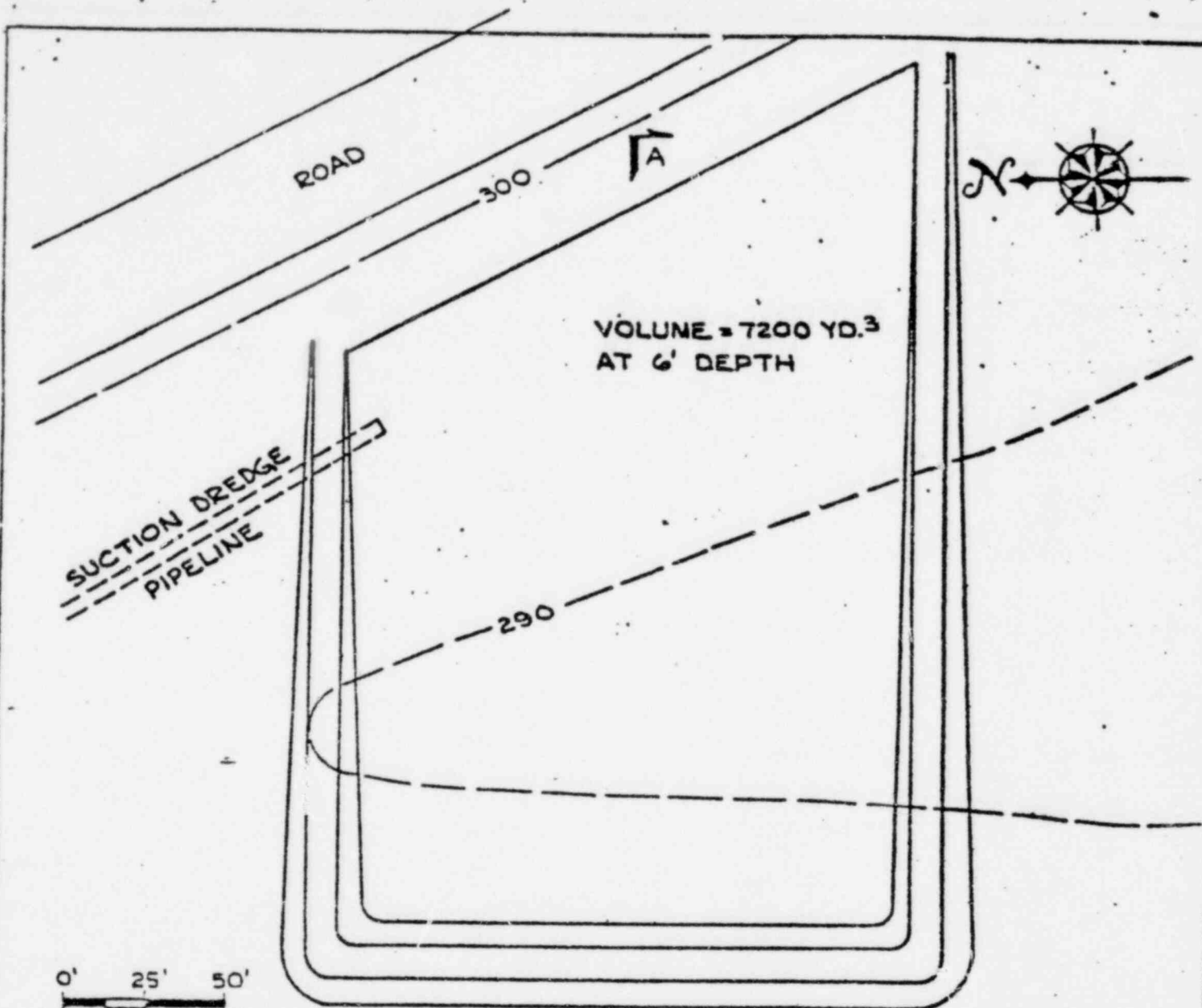
FIGURE 2
 AREA OF PROPOSED DREDGING
 THREE MILE ISLAND NUCLEAR STATION

SOLIDS DISPOSAL
AREA - PRESENTLY
USED AS SPOILS
AREA.

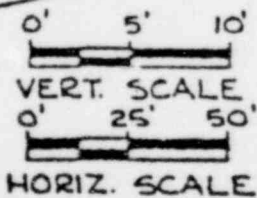
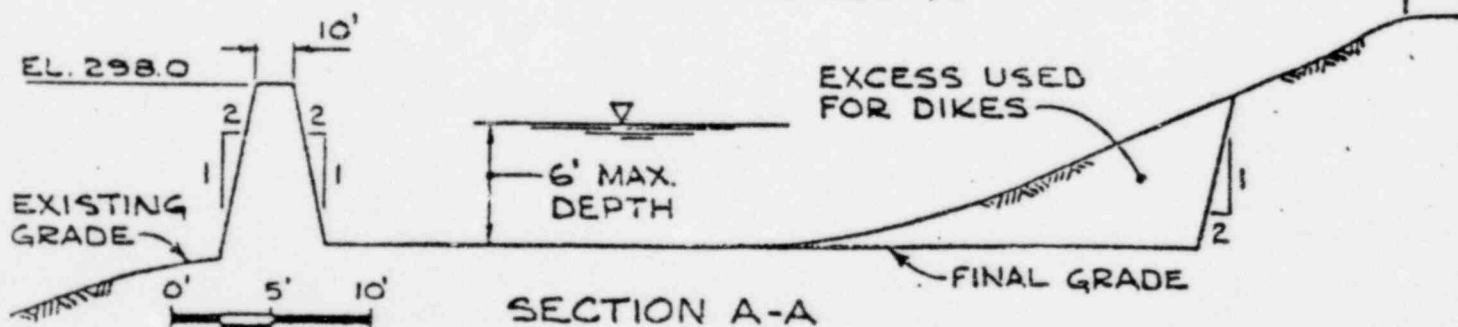


0' 400' 1200' 2000'
SCALE

FIGURE 3
DREDGE DISPOSAL AREAS
THREE MILE ISLAND NUCLEAR STATION



PLAN-SUCTION DREDGE BASIN



SECTION A-A

FIGURE 4
SUCTION DREDGE DISPOSAL BASIN
THREE MILE ISLAND NUCLEAR STATION

The U. S. Code of Federal Regulations, Title 33, Subpart 67 30-5 (c) states that all structures erected in navigable waters in depths in excess of three feet at mean low water require obstruction lights unless the applicant is advised to the contrary by the Coast Guard District Commander. If the structures authorized by this permit are to be built in water depths in excess of three feet at mean low water, you must contact the Commander (O-2), Fifth Coast Guard District, Federal Building, 431 Crawford Street, Portsmouth, Virginia 23705, to ascertain the need for the placement of obstruction lights.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

NOV 10 1975

Major William L. Jones
Chief, Regulatory Functions Branch
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Md. 21203

Re: NABOP-F/4 (Metropolitan Edison Co.) 75-1048

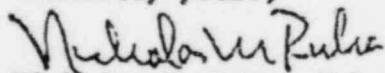
Dear Major Jones:

We have reviewed the referenced Public Notice, dated October 14, 1975 describing an application for a permit for work in navigable waters. We have considered the water pollution potential as well as the possible effect on the environment by construction of the facility. We have no objection to the above permit request provided the appropriate Water Quality Certification is issued to the applicant. We do, however, recommend that the following conditions be attached to and made part of any permit issued for the proposed construction:

1. Dikes will be constructed with adequate distance between the inlet and outlet to insure maximum detention time for the settling of solids. The dikes will also be of sufficient height and strength to prevent spillage at any point other than the outlet structure.
2. Excavation, dredging, or filling in the Susquehanna River will be done so as to minimize disturbance of the bottom or turbidity increases in the water which tend to degrade water quality and damage aquatic life.
3. Deposition of dredged or excavated materials on shore, and all earthwork operations on shore will be carried out in such a way that sediment runoff and soil erosion to the Susquehanna River are minimized.
4. On completion of earthwork operations, all fills in the Susquehanna River or on shore, and other areas on shore disturbed during construction will be seeded, rip-rapped or given some other type of protection from subsequent soil erosion.
5. Applicant will employ measures to prevent or control spills of fuels or lubricants from entering the Susquehanna River.

Please advise us of any action taken on the above permit request.

Sincerely yours,


Nicholas M. Ruha, Chief
EIS & Wetlands Review Section



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
BALTIMORE DISTRICT, BALTIMORE, MARYLAND
NOTICE OF AUTHORIZATION

19 January 1976

A PERMIT TO suction dredge approx. 3000 cu.yds of sandy silt, gravel, and coarse sand from the intake channels of units 1 & 2, and the East-West low flow channel; to place the spoil material in the designated upland disposal area; and to maintenance dredge said channels for a 10-year period in Susquehanna River AT Three Mile Island, Dauphin County, Pennsylvania

HAS BEEN ISSUED TO Metropolitan Edison Company
Post Office Box 542
ADDRESS OF PERMITTEE Reading, Pennsylvania 19603

ON 19 January 19 76

PERMIT NUMBER
NABOP-F/4 (Metro, Edison Company) 75-1048

John P. O'Hagan
JOHN P. O'HAGAN
Chief, Operations Division
for the District Engineer

ENG Form 4336
Jul 70

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

GPO: 1971 O-418-898



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
BALTIMORE DISTRICT, BALTIMORE, MARYLAND
NOTICE OF AUTHORIZATION

19 January 1976

A PERMIT TO suction dredge approx. 3000 cu.yds of sandy silt, gravel, and coarse sand from the intake channels of units 1 & 2, and the East-West low flow channel; to place the spoil material in the designated upland disposal area; and to maintenance dredge said channels for a 10-year period in Susquehanna River AT Three Mile Island, Dauphin County, Pennsylvania

HAS BEEN ISSUED TO Metropolitan Edison Company
Post Office Box 542
ADDRESS OF PERMITTEE Reading, Pennsylvania 19603

ON 19 January 19 76

PERMIT NUMBER
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John P. O'Hagan
JOHN P. O'HAGAN
Chief, Operations Division
for the District Engineer

ENG Form 4336
Jul 70

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

GPO: 1971 O-418-898



DNG

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

(2)



(14) 15

REPLY TO ATTENTION OF:

NABOP-F/4 (Met. Edison Co.) 75-1048

15 March 1976

See L₃
1 cc RCU
1 cc Insto
eng - 5 file
G
S

Metropolitan Edison Company
P.O. Box 542
Reading, Pennsylvania 19603

Gentlemen:

In accordance with your written request dated 8 March 1976, the plans for work authorized by the Secretary of the Army in permit dated 19 January 1976 from the District Engineer at Baltimore District, Baltimore, Maryland are hereby approved as revised.

The revised plans provide for the relocation of the spoil disposal sites on the island within the dike system surrounding the TMI facility in Susquehanna River at Three Mile Island, Dauphin County, Pennsylvania.

All of the conditions pertaining to the work authorized on 19 January 1976 remain in full force and effect.

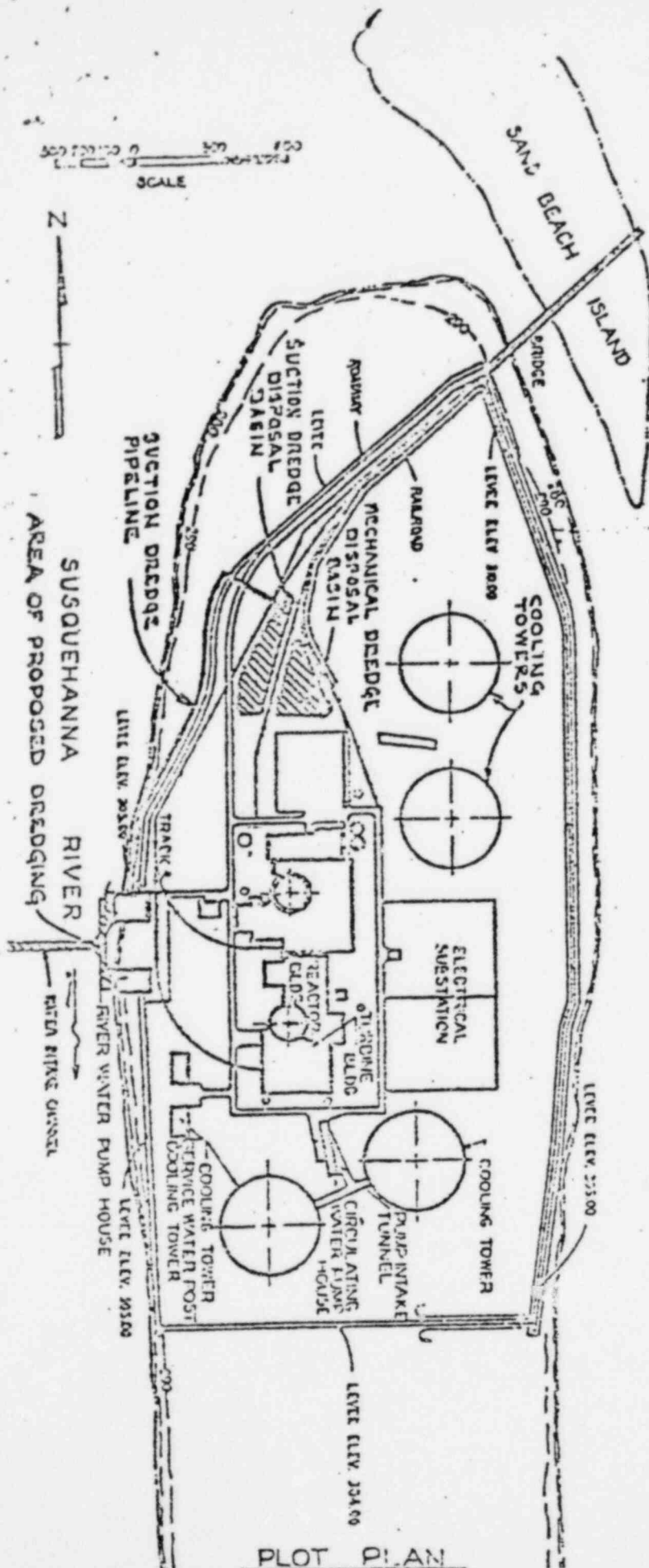
By Authority of the Secretary of the Army:

John P. O'Hagan
JOHN P. O'HAGAN
Chief, Operations Division

Issued for & in behalf of
Colonel Robert S. McGarry
District Engineer

Attachment: Set of Plans





LOCATION MAP

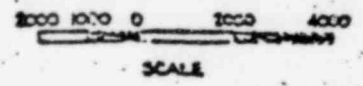
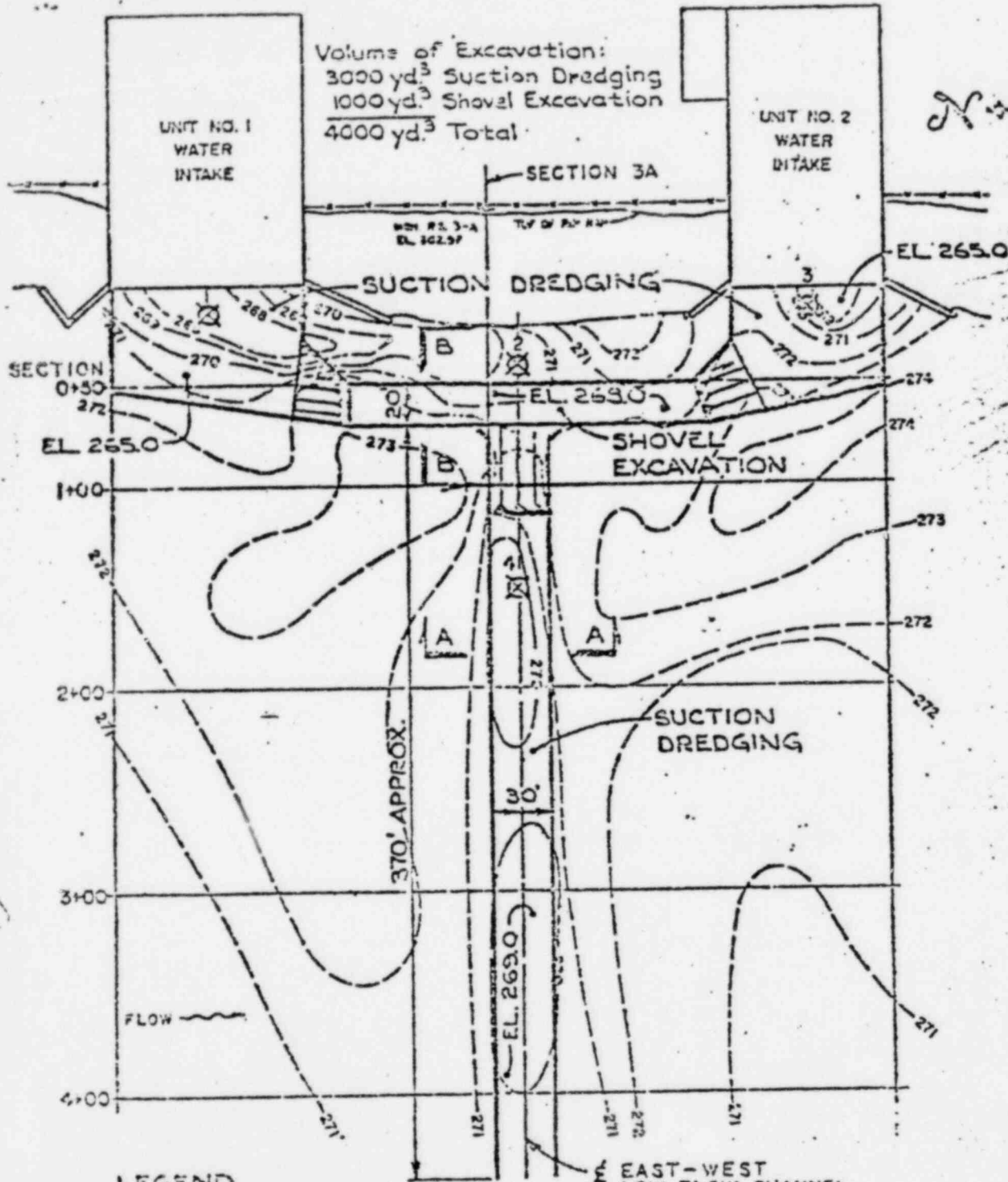
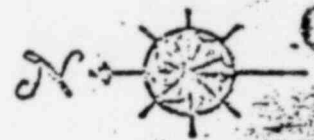


FIGURE 1
 PROPOSED REMEDIAL DREDGING
 AND DREDGE DISPOSAL AREAS
 THREE MILE ISLAND NUCLEAR STATION

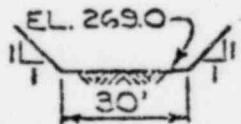
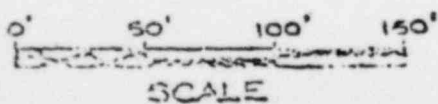
Volumes of Excavation:
 3000 yd.³ Suction Dredging
 1000 yd.³ Shovel Excavation
 4000 yd.³ Total



LEGEND

- ☒ BOTTOM SAMPLE LOCATIONS
- NO. 1 SANDY SILT
- NO. 2 SANDY GRAVEL
- NO. 3 SANDY SILT
- NO. 4 COARSE SAND

ELEVATIONS IN FEET

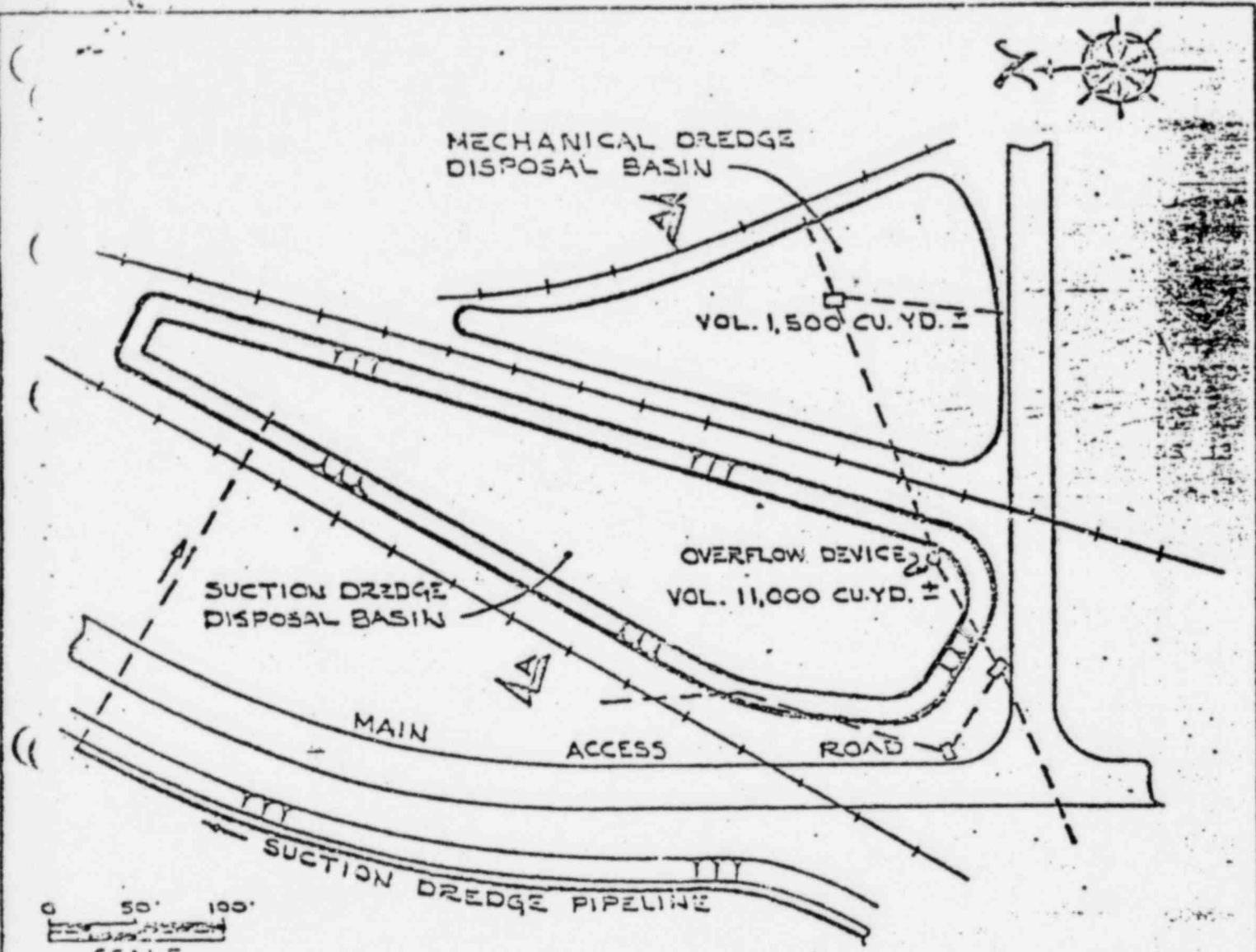


SECTION A-A

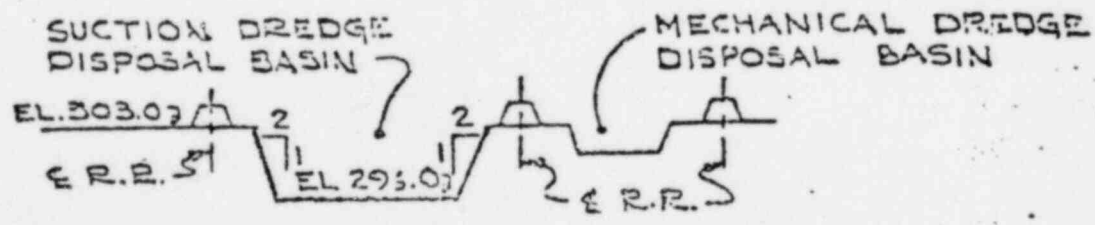


SECTION B-B

FIGURE 2
AREA OF PROPOSED DREDGING
THREE MILE ISLAND NUCLEAR STATION



PLAN-DREDGE DISPOSAL BASINS



SECTION A-A

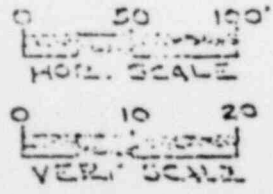


FIGURE 3
SUCTION DREDGE DISPOSAL BASINS
THREE MILE ISLAND NUCLEAR STATION

(3)

02 0016 0003 0050.0

63. 0009. 0000

COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

Harrisburg Regional Office
407 South Cameron Street
Harrisburg, Pennsylvania 17120

June 7, 1978

Copies to

~~3cc - EST~~
 1cc - JGN
 1cc - Chrono
 orig - File
 1cc - L3
 1cc - Rmk
 1cc - G. Miller
 (Station Super)

Metropolitan Edison Company
P. O. Box 542
Reading, PA 19603

ATTN: Mr. G. J. Troffer
Manager - Generation Quality Assurance

Gentlemen:

This will acknowledge receipt of your June 7, 1978 request for fire training at your company's Three Mile Island facility.

Approval for the training is granted for the proposed site on the dates indicated in your request. The approval is subject to the following conditions:

- (1) burning shall be limited to the hours between 0700 a.m. and 0400 p.m.;
- (2) only the fuel specified in your letter shall be utilized;
- (3) no burning shall be conducted if unfavorable atmospheric conditions prevail;
- (4) the Department shall be notified of any change in your proposal.

If you have any questions, do not hesitate to contact me.

Very truly yours,

Leif Ericson
Regional Air Pollution Control Engineer

LE:gu



10/20/79 (155/2014) 3PT 02. 006. 0003. 0050. 0001
001/2000
RECEIVED 4 63. 009. 0008. 0002. 01



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

MET-ED CO.
Bureau of Air Quality Control
GENERAL DIVISION
407 South Cameron Street
Harrisburg, Pennsylvania 17101
(717) 787-9685

May 21, 1979

RECEIVED

JUN - 1 PM 3:01

MET-ED CO.
GENERATION
DIVISION

Doc 25
3cc UTT
1cc JWH
1cc Chrono
orig file
1cc RMK
1cc W-2 Miller

Metropolitan Edison Company
P. O. Box 542
Reading, Pennsylvania 19603

Attention: Mr. G. J. Troffer
Manager - Generation Quality Assurance

Gentlemen:

This will acknowledge receipt of your May 9, 1979 request for fire training at your company's Three Mile Island facility.

Approval for the training is granted for the proposed site on the dates indicated in your request. The approval is subject to the following conditions:

- (1) burning shall be limited to the hours between 0700 a.m. and 0400 p.m.;
- (2) only the fuel specified in your letter shall be utilized;
- (3) no burning shall be conducted if unfavorable atmospheric conditions prevail;
- (4) the Department shall be notified of any change in your proposal.

If you have any questions, do not hesitate to contact me.

Very truly yours,

Leif Ericson
Regional Air Pollution Control Engineer
Harrisburg Region

(5)

EPA-4

02.0016.0001.0005.01 *revised*
63.0050.0020.0001.01



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

RECEIVED

MAR 24 1978

NET-ED 00
GENERATION
DIVISION

In reply refer to: 3EN43

APR 21 1978

J. G. Herbein, Vice President
Metropolitan Edison Company
P. O. Box 542
Reading, PA 19603

Copies to	
3CC	GJT
1CC	JGH
1CC	RMK
1CC	L3
1CC	Chrono
1CC	Subject
1CC	G.P. Miller
1CC	J.P. O'Hanlon
ORIG	Holding File

Re: NPDES Permit Number
EPA PA0009920
Amendment Number 3

Dear Sir:

Enclosed is Amendment Number 3 authorizing revisions to the above-referenced National Pollutant Discharge Elimination System permit previously issued in accordance with provisions of the Federal Water Pollution Control Act Amendments of 1972.

This permit amendment becomes effective on immediately, unless you or another party file a timely and proper request for an adjudicatory hearing, pursuant to 40 C.F.R. §125.36. If such request is duly filed, those terms and conditions of the Amendment affected by the issues raised in your request shall not be effective until final agency action has occurred in accordance with 40 C.F.R. §125.36(d)(2).

Sincerely,

Stephen R. Wassersug
Stephen R. Wassersug
Director
Enforcement Division

Enclosure

PERMITTEE

Metropolitan-Edison Company

3 Mile Island

Permit Number PA0009920

Amendment Number 3

Page 1 of 2

NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM
DISCHARGE PERMIT
AMENDMENT NO. 3

Pursuant to the provisions of the Federal Water Pollution Control Act Amendments of 1972, the U.S. Environmental Protection Agency hereby authorizes the following revisions to the above captioned permit:

1 Pages 17a and 17b of 18 (Special Conditions)

a. Replace Special Conditions 11, 12, 13 and 14 with the following Special Conditions:

11. The permittee shall at all times maintain in good working order and operate the Mechanical Draft Cooling Towers (MDCT's) as efficiently as possible so as to minimize temperature differential between ambient river temperature and the temperature of the discharge; provided, however, the MDCT's may be shut down when in the judgment of the responsible TMINS personnel a combination of atmospheric conditions and river temperature may exist which causes the waste water to be heated as it passes through the MDCT's or ice formation is observed to occur within the MDCT's.
12. The temperature of the discharge shall never exceed a maximum of 87°F, except when the ambient river temperature exceeds 87°F, in which case, the discharge temperature shall not exceed the ambient river temperature; the temperature of the discharge shall not change by more than 5°F during any one hour period.

Ambient river temperature is the temperature of the river upstream of the heated waste discharge. The ambient temperature sampling point should be unaffected by any sources of waste heat. The temperature of the intake water will be considered as ambient river temperature so long as the intake water is unaffected by TM's or any other nearby heated water discharge.

13. The following temperature limitations shall never be exceeded:
- During the period November 1 through April 30, the temperature of the discharge shall not exceed 12°F above ambient river temperature.
 - During the period May 1 through October 31, the temperature of the discharge shall not exceed 7°F above ambient river temperature.
 - During plant cooldown operations the temperature of the discharge shall not exceed 12°F above ambient river temperature.
14. The chief of the Operations Section of the Harrisburg Regional Office of the Bureau of Water Quality Management shall be advised by telephone within 24 hours when the MDCT's are shut down for reasons other than those specified in condition 11 above and again when tower operation is resumed; shall be notified within 24 hours when the discharge limitations specified in condition 13 above are exceeded and again when the discharge is in compliance with such limitations; and shall be notified, at least thirty (30) days in advance, whenever possible of all scheduled plant cooldown operations.
- Add the following Special Condition to the permit:
 - At no time shall the discharge exceed the rate of 150 million gallons per day.
 - Change the number of the following Special Condition to 19:
 - The discharge of corrosion inhibitors, biocides (other than chlorine) and/or dispersants without the prior written approval of the Regional Administrator, is prohibited.

The changes as set forth by this amendment are/were effective immediately.

The remainder of the permit remains in full force and effect.

By Charles W. Lopez
Enforcement Division Director

April 21, 1978
Date

9. It is recognized that influent quality changes, equipment malfunction, or other circumstances beyond the control of the permittee, may sometimes result in effluents exceeding the permit limitations despite the exercise of appropriate care, maintenance, and corrective measures by the permittee. The permittee may come forward to demonstrate to the Agency that such circumstances exist in any case where effluents exceed the limitation set forth in this permit. The Agency may consider such information in determining whether there is an actionable violation.
10. EPA will not utilize a notification of noncompliance in a criminal prosecution against the individual who gave the notification, except in a prosecution for perjury or for giving a false statement.
11. The permittee shall at all times maintain in good working order and operate the Mechanical Draft Cooling Towers (MDCT's) as efficiently as possible so as to minimize temperature differential between ambient river temperature and the temperature of the discharge; provided, however, the MDCT's may be shut down when the judgment of the responsible TMDNS personnel a combination of atmospheric conditions and river temperature may exist which causes the waste water to be heated as it passes through the MDCT's or ice formation is observed to occur within the MDCT's.
12. The temperature of the discharge shall never exceed a maximum of 87°F, except when the ambient river temperature exceeds 87°F, in which case, the discharge temperature shall not exceed the ambient river temperature; the temperature of the discharge shall not change by more than 5°F during any one hour period

Ambient river temperature is the temperature of the river upstream of the heated waste discharge. The ambient temperature sampling point should be unaffected by any sources of waste heat. The temperature of the intake water will be considered as ambient river temperature so long as the intake water is unaffected by TMI's or any other nearby heater water discharge.

13. The following temperature limitations shall never be exceeded:
 - a. During the period November 1 through April 30, the temperature of the discharge shall not exceed 12°F above ambient river temperature.
 - b. During the period May 1 through October 31, the temperature of the discharge shall not exceed 7°F above ambient river temperature.
 - c. During plant cooldown operations the temperature of the discharge shall not exceed 12°F above ambient river temperature.
14. The Chief of the Operations Section of the Harrisburg Regional Office of the Bureau of Water Quality Management shall be advised by telephone within 24 hours when the MDCT's are shut down for reasons other than those specified in condition 11 above and again when tower operation is resumed; shall be notified within 24 hours when the discharge limitations specified in condition 13 above are exceeded and again when the discharge is in compliance with such limitations; and shall be notified, at least thirty (30) days in advance, whenever possible of all scheduled plant cooldown operations.
15. Within two years after both nuclear reactor units are in commercial operation, the Metropolitan-Edison Company will collect and submit to the Department of Environmental Resources and the EPA, stream data which accurately defines the thermal plume or zone of impact from the TMNS heated waste discharge. As a minimum, thermal plume mapping data collected to meet the Nuclear Regulatory Commission's Environmental Resources and the EPA.
16. The Permittee shall submit to the Pennsylvania Department of Environmental Resources within ninety (90) days of issuance of Amendment No. 1 to the NPDES permit, an application for a new Pennsylvania Water Quality Management permit for the facilities associated with the thermal component of discharge 001.
17. For substances not specifically limited in the permit, the permittee is limited to the amount of the substance reported in the NPDES application. The permittee is not authorized to discharge any substance in excess of that reported in the NPDES application.
18. At no time shall the discharge exceed the rate of 150 million gallons per day.

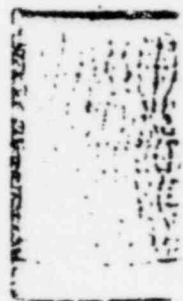
Page 17c of 18
Permit No. PA0009920
Amendment No. 3

19. The discharge of corrosion inhibitors, biocides (other than chlorine) and/or dispersants without the prior written approval of the Regional Administrator, is prohibited.

6

GQL 1558

REQUEST FOR CONSIDERATION FOR A 301(c) OR 301(g) MODIFICATION		Form Approved OMB No. 158-R0164
NAME ON PRESENT PERMIT Metropolitan Edison Company, Three Mile Island Station		
PERMIT NO. PA 0009920	OUTFALL NO. 001	
EFFLUENT GUIDELINE THAT YOU REQUEST A VARIANCE FROM Cooling Tower Blowdown: Phosphorous and noncorrosive inhibitors		
I am applying for a: <input type="checkbox"/> 301(c) <input type="checkbox"/> 301(g) <input checked="" type="checkbox"/> BOTH		
COMMENT		
SIGNATURE OF APPLICANT OR CORPORATE OFFICIAL John O. Herbein, Vice President-Generation		DATE 9-22-78



File: 61.1415.0000
02.0016.0001.0005.02

Metropolitan Edison Company
Post Office Box 542
Reading Pennsylvania 19640
215 929-3601

Writer's Direct Dial Number

August 15, 1979
GQL 0991

Mr. Frederick Marrocco
Regional Water Quality Manager
Pa. Department of Environmental Resources
407 South Cameron Street
Harrisburg, PA 17120

Dear Mr. Marrocco:

NPDES Permit No. 0009920
Three Mile Island Nuclear Station (TMI)

The subject permit expires January 30, 1980. Enclosed are four copies of our application for a new NPDES permit as well as the required permit application fee.

As detailed in the application, upon completion of the cooling tower cleaning operation, additional information will be supplied for outfall 005. Further, as the hazardous substances regulations have yet to be finalized we wish to reserve our right to update our application once the regulations are finalized.

Should your staff have any questions regarding this submittal or require any additional information, please call Eric Nielsen of my staff at 215-921-6586.

Sincerely,

/s/ J. G. Herbein
J. G. Herbein
Vice President
Nuclear-Operations

JGH:ESN:mrm

Enclosures: Application (4 copies)
Application Fee

cc: Mr. James Donato
PA. Department of Environmental Resources
407 South Cameron Street
Harrisburg, PA 17120

002697
 THE CHECK ATTACHED IS IN FULL PAYMENT OF THE ITEMS LISTED BELOW. IF NOT CORRECT, PLEASE RETURN PROMPTLY
 METROPOLITAN EDISON COMPANY

VENDOR NUMBER	REGISTER NUMBER	INVOICE NUMBER	INVOICE DATE			INVOICE AMOUNT	DISCOUNT OR CONTRA	NET AMOUNT
			MO.	DAY	YR.			
00540	074767		07	27	79	350.00		350.00

PLEASE DETACH THIS MEMORANDUM BEFORE DEPOSITING CHECK
 *A LESS FREIGHT B INVOICE NOT SUBJECT TO PA. SALES TAX C CREDIT MEMO D CORRECTED INVOICE E THIS INVOICE WAS RECEIVED TOO LATE FOR PAYMENT ON ORIGINAL DUE DATE.
 R-LESS RETENTIONS

No. 002697

METROPOLITAN EDISON COMPANY
 TMI OPERATING ACCOUNT

60-46
 313

CHECK DATE		
MO.	DAY	YEAR
07	01	79

PAY EXACTLY *****350 DOLLARS AND 00 CENTS

CHECK AMOUNT
*****350.00

AMERICAN BANK AND TRUST CO. OF PA.
 PHILADELPHIA, PA.

TO THE ORDER OF
 COMMONWEALTH OF PENNSYLVANIA
 HARRISBURG PA



⑈002697⑈ ⑈031300465⑈ 030⑈8420⑈

NOTE: All attached pages/tables/figures are sequentially numbered by section.

FORM APPROVED
OMB No. 153-R0100

FOR AGENCY USE									

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION I. APPLICANT AND FACILITY DESCRIPTION

Unless otherwise specified on this form all items are to be completed. If an item is not applicable indicate 'NA.'

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

Please Print or Type

1. Legal Name of Applicant (see instructions)	101	<u>Metropolitan Edison Company</u>
2. Mailing Address of Applicant (see instructions) Number & Street	102a	<u>P.O. Box 542</u>
City	102b	<u>Reading</u>
State	102c	<u>Pennsylvania</u>
Zip Code	102d	<u>19640</u>
3. Applicant's Authorized Agent (see instructions) Name and Title	103a	<u>E. S. Nielsen</u> <u>Licensing Engineer - - Metropolitan Edison Company</u>
Number & Street Address	103b	<u>P.O. Box 542</u>
City	103c	<u>Reading</u>
State	103d	<u>Pennsylvania</u>
Zip Code	103e	<u>19640</u>
Telephone	103f	<u>215- 921-6588</u> Area Number Code
4. Previous Application If a previous application for a National or Federal discharge per- mit has been made, give the date of application. Use numeric designation for date.	104	<u>08 25 71</u> YR MO DAY

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete, and accurate.

<u>J. G. Herbein</u>	102e	<u>Vice President- Nuclear Operations</u>
Printed Name of Person Signing		Title
<u>/s/ J. G. Herbein</u>	102f	<u>79 08 15</u> YR MO DAY
Signature of Applicant or Authorized Agent		Date Application Signed

18 U.S.C. Section 1001 provides that:
Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statement or representation, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

FOR AGENCY USE					

9. All Facility Discharges and other Losses: Number and Discharge Point, (a) Volume. Specify the number of discharge points and the volume of water discharged or lost from the facility according to the categories below. Estimate average volume per day in thousand gallons per day.

		Number of Discharge Points	Total Volume Used or Discharged, Thousand Gall/Day
a. Surface Water	103a1	1	*
b. Sanitary wastewater transport system	103b1	1	*
c. Storm water transport system	103c1	2	*
d. Combined sanitary and storm water transport system	103d1	N/A	N/A
e. Surface impoundment with no effluent	103e1	1	N/A*
f. Underground percolation	103f1	N/A	N/A
g. Well injection	103g1	N/A	N/A
h. Waste acceptance firm	103h1	8	*
i. Evaporation	103i1	6	*
j. Consumption	103j1	#	*
k. Other*	103k1	5	*
l. Facility discharges and volume Total Item 9.	103l1	27	*
* If there are discharges to 'other,' specify.	103m1	*	

* See Item 12 - Additional Information

10. Permits, Licenses and Applications

List all existing, pending or denied permits, licenses and applications related to discharges from this facility (see instructions).

Issuing Agency	For Agency Use	Type of Permit or License	ID Number	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA	Expiration Date YR/MO/DA
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1. ACOE		Dredging	NABOP-F/4	75/09/10	76/12/31		86/12/31
			75-1048				
2. EPA		NPDES	PA0009920	75/08/25	75/01/30		80/01/30
3. NRC		Unit 1 License	DPR-50	70/03/20	77/04/19		2008/5/18

11. Maps and Drawings

Attach all required maps and drawings to the back of this application (see instructions).

12. Additional Information

Item Number	Information
7.	See attached page <u>1</u> for additional information.
8.	See attached page <u>1</u> for additional information.
9.	See attached page <u>2</u> for additional information.
10.	Permit list continued on attached page <u>8</u> .
11.	See map/drawing index on attached page <u>9</u> .

7. FACILITY INTAKE WATER

Figure 1 graphically displays TMI water flow paths.

Table 1 details water usage.

8. FACILITY WATER USE

Refer to Table 1. Also, note that the sewage treatment plant (STP) is currently not in operation.

9. ALL FACILITY DISCHARGES AND OTHER LOSSES; NUMBER AND DISCHARGE

There are a total of 27 discharge points listed in Item 9. Figure 1 is a simplified flow diagram, Table 1 details water usage and Figure 2 indicates the discharge locations. The following is a description of those discharges listed in Item 9.

a. Surface Water - This is current NPDES discharge, 001 which is the main outfall for the entire plant. (TMI Unit 1 & 2).

b. Sanitary - This is a current NPDES source which is designated by monitoring point number 101. This source combines with other flows and exists through discharge 001. At this time the sewage treatment plant (STP) is not in service and this waste source does not exit through discharge 001. Until such time that the STP returns to service, all sanitary wastes are being removed for offsite treatment and disposal.

When the STP becomes operational, daily flows which will be treated by the STP are estimated to be 14.4 thousand gallon/day maximum. Any additional flows will be treated offsite or the STP will be modified to handle the additional flow.

c. Storm Water Transport System - This discharge has been designated as NPDES discharge 005 in our application to amend the NPDES Permit dated 3-10-78 (GQL 0192). The discharge is normally comprised of storm water runoff from the yard drain system. Occasionally it is used for discharging treated effluent from cooling tower cleaning operations. It also allows for the treatment of construction runoff prior to discharge.

The storm water and construction runoff discharged through outfall 005 is intermittent (dependent on rainfall) and of a negligible amount.

As described to PaDER in our letter dated December 28, 1978, GQL 2054, a total of approximately 2.2 million gallons of water will be periodically discharged out discharge 005 during cooling tower cleaning operations.

There are three other storm water transport discharges all located on the west side of TMI. These discharges drain surface runoff from the areas immediately surrounding the Unit 1 and Unit 2 intake screen houses and the area just south of outfall 001. These drains are not expected to create contamination any different from nearby hi-ways and railroad right of ways which are located on both sides of the river. The flow from these discharges are intermittent (dependent on rainfall) and of a negligible amount.

- d. Combined Sanitary/Storm Water Discharge - Not applicable
- e. Surface Impoundment with No Effluent - During the periodic maintenance dredging which is carried out at the station, the dredged spoil effluent is treated by long term settling with usually no effluent from the dredging settling basin. Met-Ed also is subject to the requirements of Army Corps of Engineer and PaDER permits which specifically cover any dredging operations.
- f. Underground Percolation - Not applicable
- g. Well Injection - Not applicable
- h. Waste Acceptance Firm - Solid and liquid wastes are removed from seven treatment systems as follows:

1. Sewage Treatment Plant (STP) - (NPDES designation No. 101) - Wastes are removed for offsite treatment and disposal. Currently approximately 21,000 thousand gallons/day are generated. These wastes are removed on an approximate daily (6 day/week) basis. When the STP becomes operational, it is estimated that approximately 100 gallons/day of waste sludge will be generated. This sludge will then be periodically removed for offsite disposal.

2. Industrial Waste Filter System - (NPDES designation No. 104) - Waste filter cake is removed for offsite treatment and disposal. Approximately 3300 pounds/day are generated. The filter cake is then periodically removed for offsite disposal.

3. Industrial Waste Treatment System - (NPDES designation No. 107) - Waste oil is removed for offsite treatment and disposal. Approximately 20 gallons/day of waste oil is generated. This waste is periodically removed for offsite disposal.

4. Radioactive Waste Treatment System - Wastes which cannot be discharged to the river are removed for offsite treatment and disposal. Approximately 5000 cubic ft/unit are removed each year.

5. Pre-Operational Settling Basins (NPDES designation No. 103) - Accumulated settled wastes are removed as required for offsite treatment and disposal.

6. Stormwater Transport System - comprises of the East Dam settling area which discharges through outfall 005. Accumulated solids from the settling area are periodically removed and used as landfill. After cooling tower cleaning operations, accumulated solids are also removed as required.
7. Dredging Settling Basin - After dredging operations, accumulated solids are removed as required and landfilled.
8. Intake Screen Houses - Water for each Unit enters through its own corresponding intake screen house. The water is screened in order to prevent fouling of equipment from debris which may be present in the river. The materials which accumulate on these screens are periodically removed and landfilled.
 - i. Evaporation - There are six sources of evaporation, which are the four natural draft cooling towers (NDCT) and the two mechanical draft cooling towers (MDCT) Evaporation rates of 4625 and 400 gallons per minute are approximate values for each NDCT and MDCT respectively.
 - j. Consumption - Currently, water is not being used for drinking as it is being supplied by bottled water.
 - k. Other - There are a total of five discharges listed in this category. Three of these discharges are emergency outfalls which are currently numbered as NPDES outfalls 002, 003 and 004. These outfalls are described as follows:

1. Discharge 002

This discharge is an alternate route to the Susquehanna River for the effluent from the TMI-2 Mechanical Draft Cooling Tower (MDCT).. Water discharged through TMI discharge 002 would have received the same treatment as water discharged through the main outfall, 001. This alternate path from the cooling tower basin to the river was installed to allow continued cooling tower operation in the event that the main station discharge (001) were to become plugged. In the event that the normal discharge path from the TMI-2 MDCT is blocked, the water level in the cooling tower basin would rise until the water spilled over into the 002 discharge trough. The water would then flow to the river.

2. Discharge 003

This discharge operates in the same manner as discharge 002, and is an alternate route to the Susquehanna River for the effluent from the TMI-1 MDCT.

3. Discharge 004

This discharge allows the TMI-1 MDCT to be isolated in the event of a problem arising which could require that work be performed on the MDCT. Should such a problem arise, the normal unit discharge would be diverted from the MDCT to a 48" pipe which discharges through the Station's East Dike. This emergency discharge has not yet been used.

There are two discharges associated with the intake screen houses. Both Units have trash removal facilities to screen the intermittent sluicing waters serving the bar rakes and traveling screens. The sluicing water is returned to the river and is cleaner than the water which enters TMI. This flow is intermittently discharged from each Unit screen house through an approximate six inch diameter pipe. This flow is considered to be negligible.

1. Facility discharges and volume total - Due to the varying nature of all the discharges detailed in this section, a single total discharge volume cannot be provided. It is believed that each discharge must be individually considered. Table 1 details all the normal discharge flows associated with the station.

NOTE:

In Section II of this application, information is provided for outfalls 001, 002, 003, 004 and 005. In most instances, the information provided for outfalls 002, 003 and 004 will refer back to discharge 001 since these outfalls are merely redundant emergency outfalls which have virtually the same characteristics as the effluent discharged from outfall 001.

Item 8 of Section II requests information regarding discharge distance from shore and depth below water level. Discharge pipe size, elevation and distance from discharge headwall to river are given. Those outfalls which are not at river level have rip-rap channels leading from the discharge headwall to the river.

11. Maps and Drawings

The following is a listing of all Figures/Maps supplied as a part of this application.

1. Section I - Figure 1 - TMI Water Use Flow Diagram
2. Section I - Figure 2 - Location Diagram
3. Section I - Figure 3 - USGS Map
4. Section II - Figure 1 - Simplified Flow Diagram
5. Section II - Figure 2 - Data Set 1 Sampling Locations
6. Section II - Figure 3 - Data Set 2 Sampling Locations

TABLE 1

N/A = Not Applicable
MGD = Million Gallon/Day

<u>Discharge No.</u>	<u>Average Flow *1 (MGD)</u>	<u>Maximum Anticipated Flow (MGD)</u>
001	61.7	159.2 *3
002	N/A *2	60.91 *3
003	N/A	83.80 *3
004	N/A	83.80 *3
005	N/A	*4
101 (Currently not in use)	N/A	0.0144 (Projected)
103	0.001	0.144
104	0.063	0.251
105	0.042	0.216
107	0.223	0.288
108	0.039	0.324

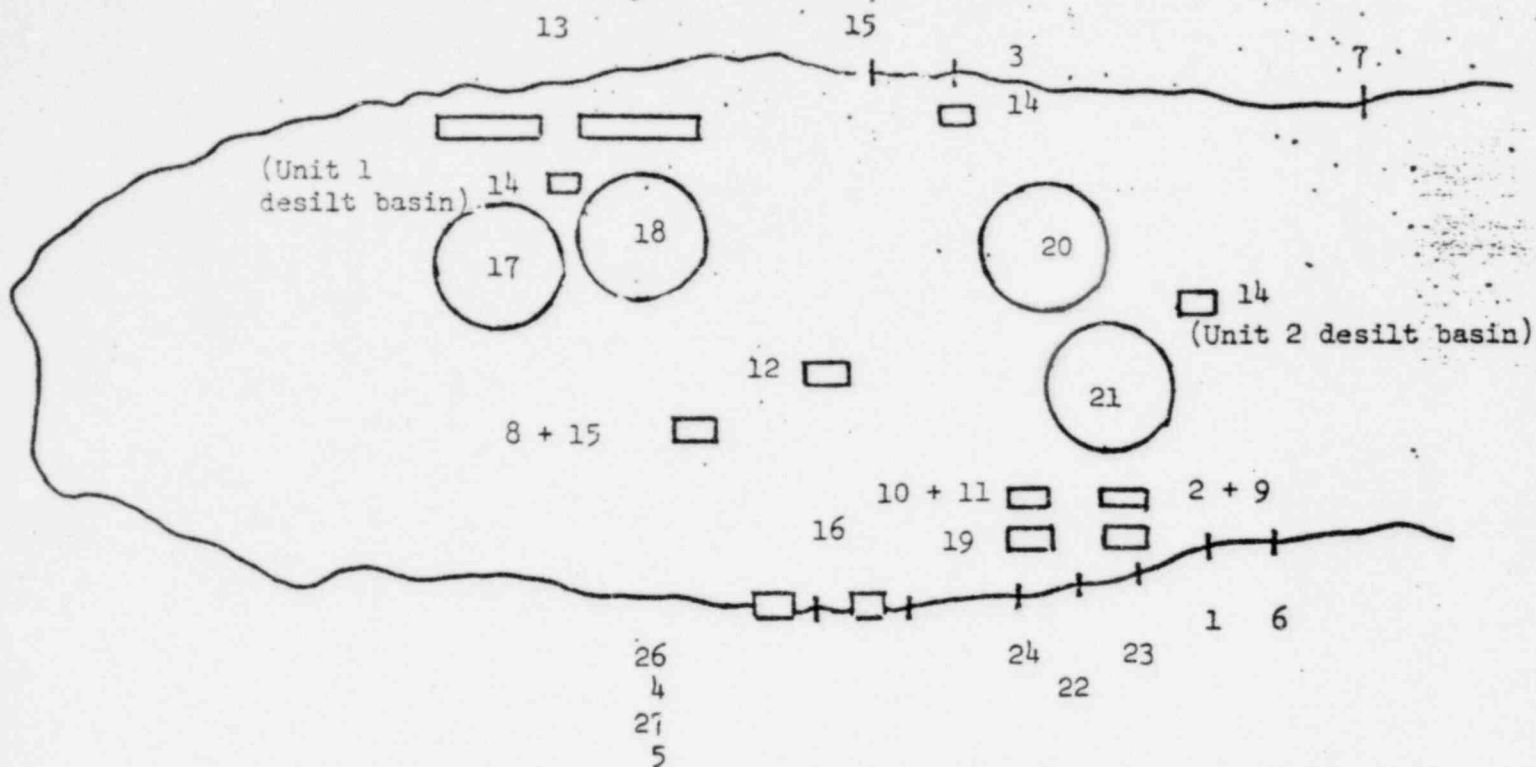
Evaporative Losses

4 Natural Draft Cooling Towers	-	26.64 MGD (4625 gallon/minute/tower)
2 Mechanical Draft Cooling Towers	-	<u>1.152 MGD (400 gallons/minute/tower)</u>
TOTAL - All Cooling Towers		27.80

- *1 Average flows were determined from 1978 station operating data. When TMI Units 1 and 2 resume operation, subsequent data may reveal higher average flows.
- *2 Discharge 002 is an emergency outfall and is not used under normal operating conditions. As detailed in our letter dated 6/20/78, GQL 1093, average flow is negligible.
- *3 This data previously supplied by letter dated 6/3/77, GQL 0759.
- *4 Discharge 005 normal flow is dependent on rainfall and is considered to be negligible. Cooling Tower cleaning flows are as detailed in our letters dated 12/28/78, GQL 2054 and 5/15/79, GQL 0691.

FIGURE 2

LOCATION DIAGRAM



The 27 discharges listed on Page I-3, Item 9, are located in the above approximate positions on TMI. The numbers are listed sequentially to correspond with Item 9.

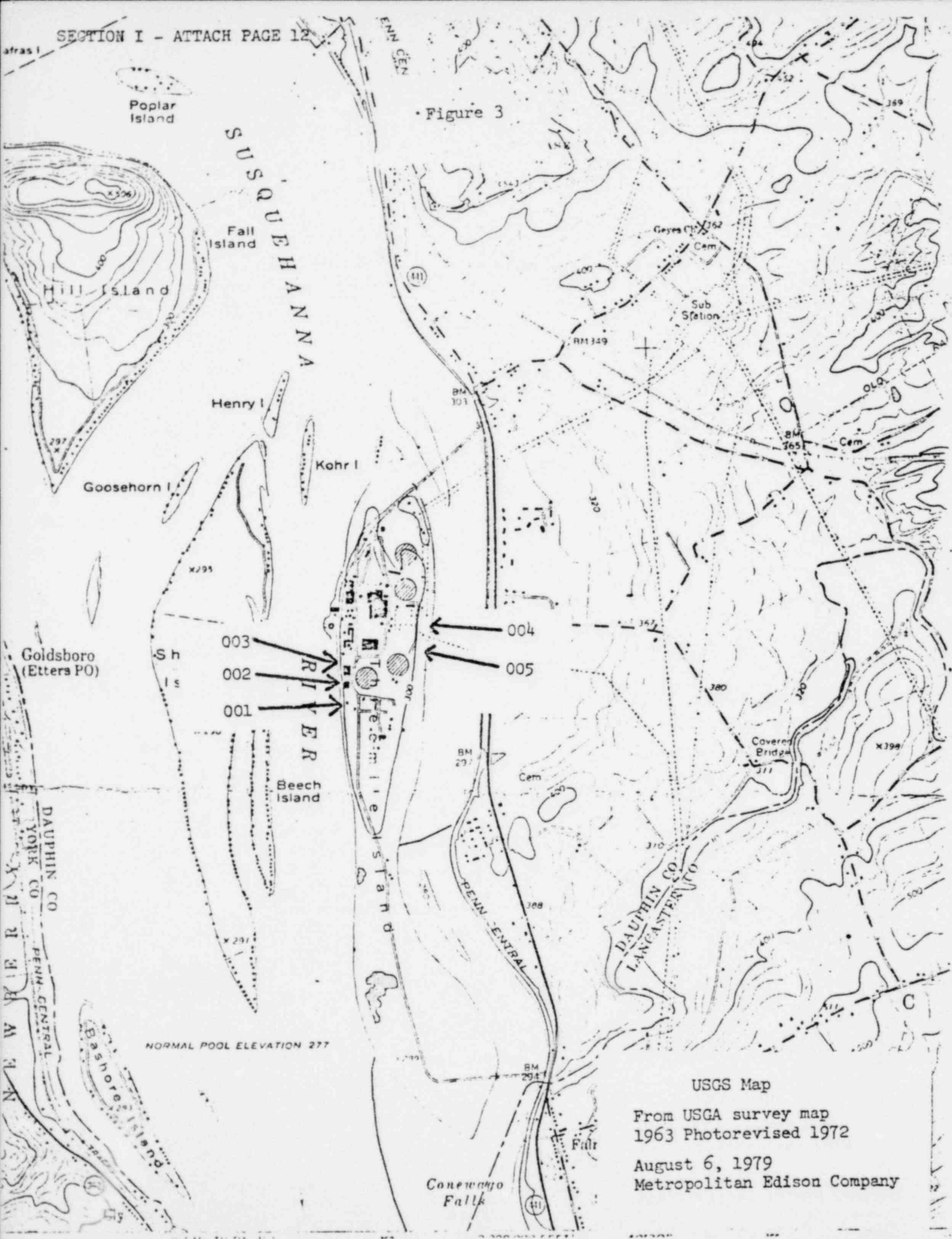
- | | |
|---|---|
| 1. 9.a. Outfall 001 | 13. 9.h.5. Pre-Op settling basins |
| 2. 9.b. Sewage Treatment Plant | 14. 9.h.6. Stormwater Transport System/
desilting basins |
| 3. 9.c. Outfall 005 | 15. 9.h.7 Dredging settling basin |
| 4. 9.c. Unit 1 Screen House are
a runoff drain | 16. 9.h.8. Intake Screen Houses |
| 5. 9.c. Unit 2 Screen House are
a runoff drain | 17. 9.i. Unit 1 NDCT |
| 6. 9.c. Area runoff drain south
of outfall 001 | 18. 9.i. Unit 1 NDCT |
| 7. 9.c. Area runoff drain south
of outfall 005 | 19. 9.i. Unit 1 MDCT |
| 8. 9.e. Dredging settling basin | 20. 9.i. Unit 2 NDCT |
| 9. 9.h.1. Sewage Treatment Plant | 21. 9.i. Unit 2 NDCT |
| 10. 9.h.2. Industrial Waste Filter
System | 22. 9.i. Unit 2 MDCT |
| 11. 9.h.3. Industrial Waste Treatment
System | 23. 9.k.1. Outfall 002 |
| 12. 9.h.4. Radioactive Waste Treatment
System | 24. 9.k.2. Outfall 003 |
| | 25. 9.k.3. Outfall 004 |
| | 26. 9.k. Unit 1 Intake Screen Discharge |
| | 27. 9.k. Unit 2 Intake Screen Discharge |

Location Map

August 6, 1979

Metropolitan Edison Company

Figure 3



USGS Map
 From USGA survey map
 1963 Photorevised 1972
 August 6, 1979
 Metropolitan Edison Company

STANDARD FORM 6 - MANUFACTURING AND COMMERCIAL

FOR AGENCY USE									

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1. Discharge Serial No. and Name					
a. Discharge Serial No. (see instructions)	201a	<u>001</u>			
b. Discharge Name Give name of discharge, if any. (see instructions)	201b	<u>Normal Station Discharge</u>			
c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.	201c	<u>001</u>			
2. Discharge Operating Dates					
a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	202a	<u>74 01</u> YR MO			
b. Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best estimate) the discharge will begin.	202b	<u>N/A</u> YR MO			
c. Discharge to End Date If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end.	202c	<u>N/A</u> YR MO			
3. Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)	203	<input type="checkbox"/> N/A			
4. Discharge Location Name the political boundaries within which the point of discharge is located.					<u>Agency Use</u>
State	204a	<u>Pennsylvania</u>	204d	_____	
County	204b	<u>Dauphin</u>	204e	_____	
(if applicable) City or Town	204c	<u>Londonderry Township</u>	204f	_____	
5. Discharge Point Description Discharge is into (check one): (see instructions)					
Stream (includes ditches, arroyos, and other intermittent watercourses)	205a	<input checked="" type="checkbox"/> STR			
Lake		<input type="checkbox"/> LKE			
Ocean		<input type="checkbox"/> OCE			
Municipal Sanitary Wastewater Treatment System		<input type="checkbox"/> MTS			
Municipal Combined Sanitary and Storm Drainage System		<input type="checkbox"/> MCS			

DISCHARGE SERIAL NUMBER

FOR AGENCY USE									

- Municipal Storm Water Transport System
- Well (Injection)
- Other

- STS
- WFL
- OTH

If 'other' is checked, specify

6. Discharge Point - Lat/Long Give the precise location of the point of discharge to the nearest second.
- Latitude
- Longitude
7. Discharge Receiving Water Name Name the waterway at the point of discharge. (see instructions)

205b _____

206a 40 DEG 09 MIN 10 SEC

206b 76 DEG 43 MIN 40 SEC

207a Susquehanna River

If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8.

8. Offshore Discharge
- a. Discharge Distance from Shore
- b. Discharge Depth Below Water Surface
9. Discharge Type and Occurrence
- a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)
- b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.
- c. Discharge Occurrence - Months If this discharge normally operates (either intermittently, or continuously) on less than a year around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)

207b

For Agency Use			207c	For Agency Use
Major	Minor	Sub		303e

209a 0 feet

209b 0 * feet

209c (con) Continuous (int) Intermittent

209d 7 days per week

209e JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC N/A

Discharge Pipe
 inv. elevation = 275'0"
 pipe size = 72"
 * normal river elevation is 278'0" and runs through center of discharge pipe

Complete Items 10 and 11 if "intermittent" is checked in Item 9.a. Otherwise, proceed to Item 12.

10. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.
11. Intermittent Discharge Duration and Frequency
- a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.
- b. Intermittent Discharge Frequency State the average number of discharge occurrences per day during days when discharging.
12. Maximum Flow Period Give the time period in which the maximum flow of this discharge occurs.

210 _____ thousand gallons per discharge occurrence. N/A

211a _____ hours per day N/A

211b _____ discharge occurrences per day N/A

212 From _____ to _____ month month N/A

FOR AGENCY USE				

13. Activity Description Give a narrative description of activity producing this discharge. (see instructions)

213a

General process is the generation of electricity.

The specific activities which cause this discharge are as follows:

- a. Natural draft cooling tower blowdown water
- b. Filtered boiler makeup waste water
- c. Neutralized demineralizer regeneration waste
- d. Service cooling water
- e. Decontaminated radioactive liquid waste
- f. Tertiary treated sanitary wastes*
- g. Treated industrial wastes

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production. (see instructions)

* Sanitary wastes are presently being removed for offsite treatment and disposal. Sanitary waste treatment system may be re-activated at a later date.

a. Raw Materials N/A

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214a				

b. Products

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214b				
4911	Electric Services	1.706	Z-1	**

** Note: Outfalls 002, 003, 004 are emergency outfalls for Outfall 001.

FOR AGENCY USE									

16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (See instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080	X	Copper 01042	X
Ammonia 00610	X	Iron 01045	X
Organic nitrogen 00605		Lead 01051	
Nitrate 00620	X	Magnesium 00927	X
Nitrite 00615	X	Manganese 01055	X
Phosphorus 00665	X	Mercury 71900	
Sulfate 00945	X	Molybdenum 01062	
Sulfide 00745		Nickel 01067	X
Sulfite 00740		Selenium 01147	
Bromide 71570		Silver 01077	
Chloride 00940	X	Potassium 00937	
Cyanide 00720	X	Sodium 00929	X
Fluoride 00951	X	Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	X
Beryllium 01012	X	Algicides* 74051	X
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022	X	Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	X
Calcium 00916	X	Phenols 32730	X
Cobalt 01037		Surfactants 38260	
Chromium 01034	X	Chlorine 50060	X
Fecal coliform bacteria 74055	X	Radioactivity* 74050	X

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

FOR AGENCY USE									

17. Description of Intake and Discharge *

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for. (see instructions)
 In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16: ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)
Flow* MGD 50050	N/A	159.12	144.72	N/A	159.12	*	*	*
pH Units 00400	** 6.0-9.0	N/A	X	** 6.0 or back-ground	** 9.0 or back-ground	**	**	**
Temperature (winter) ° F 74028	**	**	**	**	**	**	**	**
Temperature (summer) ° F 74027	**	**	**	**	**	**	**	**
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chemical Oxygen Demand (COD) mg/l 00340	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Suspended (nonfilterable) Solids mg/l 00530	35		72		560			
Specific Conductance micromhos/cm at 25° C 00095	326	326	X	500	1100	-		
Settleable Matter (residue) ml/l 00545	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Other discharges sharing intake flow (serial numbers). (see instructions)

* Flows estimated based on pump capacity. Same data supplied to PaDER in our letter dated 6/3/77 (GQL 0759).

** See Item 26 - Additional Information

DISCHARGE SERIAL NUMBER

FOR AGENCY USE

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17. (Cont'd.) *

Parameter and Code 2r7a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)
Ammonia 00610	u		u					
Oil and Grease 00550	u		u					
Chlorine (residual) 50060	u		u					
Phenols		0.0461	u					
Zinc		0.0067	u					
Nickel		0.0576	u					
Chromium		0.0037	u					
Copper		0.0113	u					
Cyanide	u		u					
Beryllium	u		u					

18. Plant Controls Check if the following plant controls are available for this discharge.

Alternate power source for major pumping facility.

Alarm or emergency procedure for power or equipment failure

Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of Material(s)

b. Name and address of manufacturer

c. Quantity (pounds added per million gallons of water treated).

219

APS

ALM

u = Undetermined

219a

*

219b

*

219c

*

* See Item 26 - Additional Information

FOR AGENCY USE									

d. Chemical composition of these additives (see instructions).

219d

*

Complete items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)

220

- Boiler Blowdown
- Boiler Chemical Cleaning
- Ash Pond Overflow
- Boiler Water Treatment — Evaporator Blowdown
- Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices
- Condense Cooling Water
- Cooling Tower Blowdown
- Manufacturing Process
- Other

- BLBD
- BCCL
- APOF
- EPBD
- OCFP
- COND
- CTBD
- MFPR
- OTHR *

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

221a

7 °F. *

Winter

221b

12 °F. *

22. Discharge Temperature, Rate of Change Per Hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

222

5 °F./hour *

23. Water Temperature, Percentile Report (Frequency of Occurrence)

In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)

Frequency of occurrence

a. Intake Water Temperature (Subject to natural changes)

223a

b. Discharge Water Temperature

223b

10%	5%	1%	Maximum
°F	°F	°F	°F
°F	°F	°F	°F

N/A

24. Water Intake Velocity (see instructions)

224

Approx. 0.2' / second
_____ feet/sec.

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

225

_____ minutes N/A

* See Item 26 - Additional Information

WASTE ABATEMENT

15a.

(Refer to attached simplified flow diagram)

Raw river water enters the plant via the Unit 1 and Unit 2 Intake Screen Houses. The water passes through automatic bar rakes and traveling screens (PSCREE). The accumulated leaves and trash are then removed for landfill disposal (SLANDD). This water is periodically chlorinated. The water is then pumped through automatic strainers and heated in the service water heat exchangers. A portion of the heated water is used as makeup water for the circulating water system (RECOVE) and the balance of the water is mixed with several other wastes and returned to the river via the mechanical draft cooling towers. The circulating water is cooled by four natural draft cooling towers (PTEMPE) and then returned to the condensers (ESURFA). This flow remains in this cycle (RCYCL) however it is regularly blown down in order to prevent a high concentration of solids from building up in the cooling towers. Approximately once/year, the basins of the cooling towers for each unit need to be thoroughly cleaned. This cleaning operation will usually occur during a unit outage. Flow from the cooling towers will be blown down as far as possible and be discharged as detailed in our letter dated May 15, 1979 GQL 0691. The remainder of the flow will be discharged out through outfall 005. The flow going out 005 will be treated by settling v... will be accomplished by the cooling tower desilting basin and east dam area (PSEDIM). In order to maintain settling areas of an effective size, they are periodically dredged out and the accumulated solids are then land filled (SLANDD). An additional contributory source to outfall 005 is the yard drain system which effectively channels all surface and construction runoff to the east dam where it is provided with settling (PSEDIM) prior to discharge.

The normal blowdown from the cooling towers combines with heated service water along with intermittent releases of regeneration wastes, which are first neutralized (CNEUT). These regeneration wastes come from the Units 1 and 2 neutralizer tanks which are currently known as NPDES discharges 105 and 108. Additional wastes from current NPDES discharges 103 and 107 also combine with this flow. Discharge 103, consists of two basins which were used for treatment of pre-operational wastes. These basins may be used in the future for chemical cleaning of the plant. Chemical cleaning is expected to occur every 10 years for each unit. The basins regularly fill up due to rainfall. In order to prevent an overflow, they are regularly drained. The treatment mechanism afforded by these basins is sedimentation (PSEDIM), pH adjustment (CPHADJ) and lime addition (COTHER), as required, to precipitate phosphates and iron. This is followed by removal of accumulated solids (SLANDD) as necessary.

Discharge 107 also known as the Industrial Waste Treatment System treats various wastes from Units 1 and 2. The wastes are pumped to a large sump, from there coagulants/coagulant aids are added (CCOAGU) to remove suspended solids and iron. This settled sludge is then routed to the Industrial Waste Filter System for further treatment. Waste oils are skimmed (PSKIMC) away while passing through an air floatation unit (PFLOAT). The waste oils are removed for offsite disposal (SLANDD). The effluent is pH adjusted prior to discharge (CPHADJ).

The combined flow now enters the mechanical draft cooling towers where it is further cooled (PTEMPE). Intermittent batches (7500 gallons) of radioactive liquid wastes are then added at flow rates varying from 5-50 gpm in order to provide a combined effluent which meets regulatory requirements. Prior to combining with the main effluent flow, the radioactive wastes pass through an evaporator (TDISTI) and a demineralizer (MIONOX) for treatment. All concentrates produced from the evaporator are either claimed for re-use or packaged for offsite disposal (SLANDD). Also, all slurries produced as a result of radioactive systems are packaged for offsite shipment, treatment, and disposal (SLANDD).

In addition to the radioactive liquid wastes, sanitary waste from current NPDES discharge 101 would be added (if the sewage plant becomes operable) to the main waste flow effluent after the mechanical draft cooling towers. All sanitary wastes are treated by an activated sludge treatment system (BACTIV). In addition phosphates are removed (MOTHER) and the pH is adjusted (PHADJ) prior to discharge. Waste sludge is removed for offsite disposal (SLANDD). At the time of this application all sanitary wastes are being removed for offsite treatment until such time that the sewage plant becomes operational.

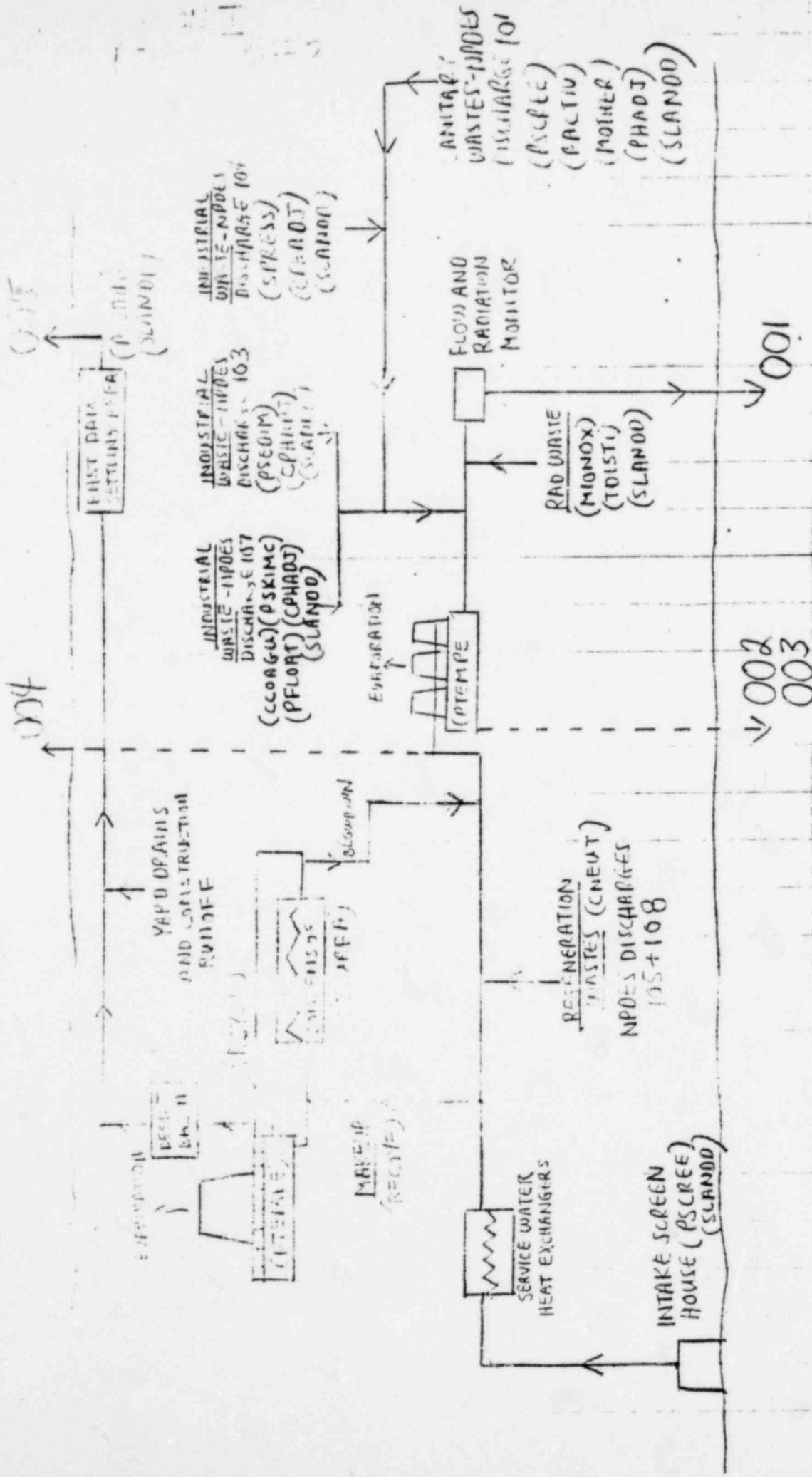
Prior to combining with the main waste flow, the sanitary wastes (when the sewage plant becomes operable) combine with the effluent from the Industrial Waste Filter System which is known as NPDES Discharge 104. The wastes from discharge 104 go through a filter press (SPRESS) to remove solids. These solids are periodically removed for offsite disposal (SLANDD). Once the solids are removed, the effluent is treated for pH adjustment (PHADJ) prior to discharge.

NOTE:

The preceding narrative describes the TMI treatment systems in a general manner.

SECTION II
FIGURE I

→ EAST SIDE



→ SUSQUEHANNA RIVER

NOTE - DASHED LINE (---) INDICATES EMERGENCY OUTFALL

SIMPLIFIED FLOW DIAGRAM

The following is a summary of thermal data which was obtained during 1978.

In 1978, during normal operation of Three Mile Island Nuclear Station, the temperature of the ambient intake water, the temperature of the discharge water at outfall 001, and the flow rate of the discharge water were continuously monitored. The date, time, temperature, and flow rate were recorded at the station. The minimum, average, and maximum of these temperatures and flow rates are summarized and reported below:

Temperature (°F) of Intake Water

<u>Month</u>	<u>Min.</u>	<u>Ave.</u>	<u>Max.</u>	<u>Month</u>	<u>Min.</u>	<u>Ave.</u>	<u>Max.</u>
Jan.	31.2	34.1	42.5	July	63.5	77.2	87.7
Feb.	32.0	33.0	37.4	Aug.	71.5	77.0	82.9
March	32.5	36.2	42.9	Sept.	63.1	70.8	78.7
April	41.4	48.2	59.1	Oct.	51.2	56.7	63.5
May	52.0	60.5	76.1	Nov.	36.5	47.5	52.3
June	56.9	74.2	82.0	Dec.	31.8	36.1	44.4

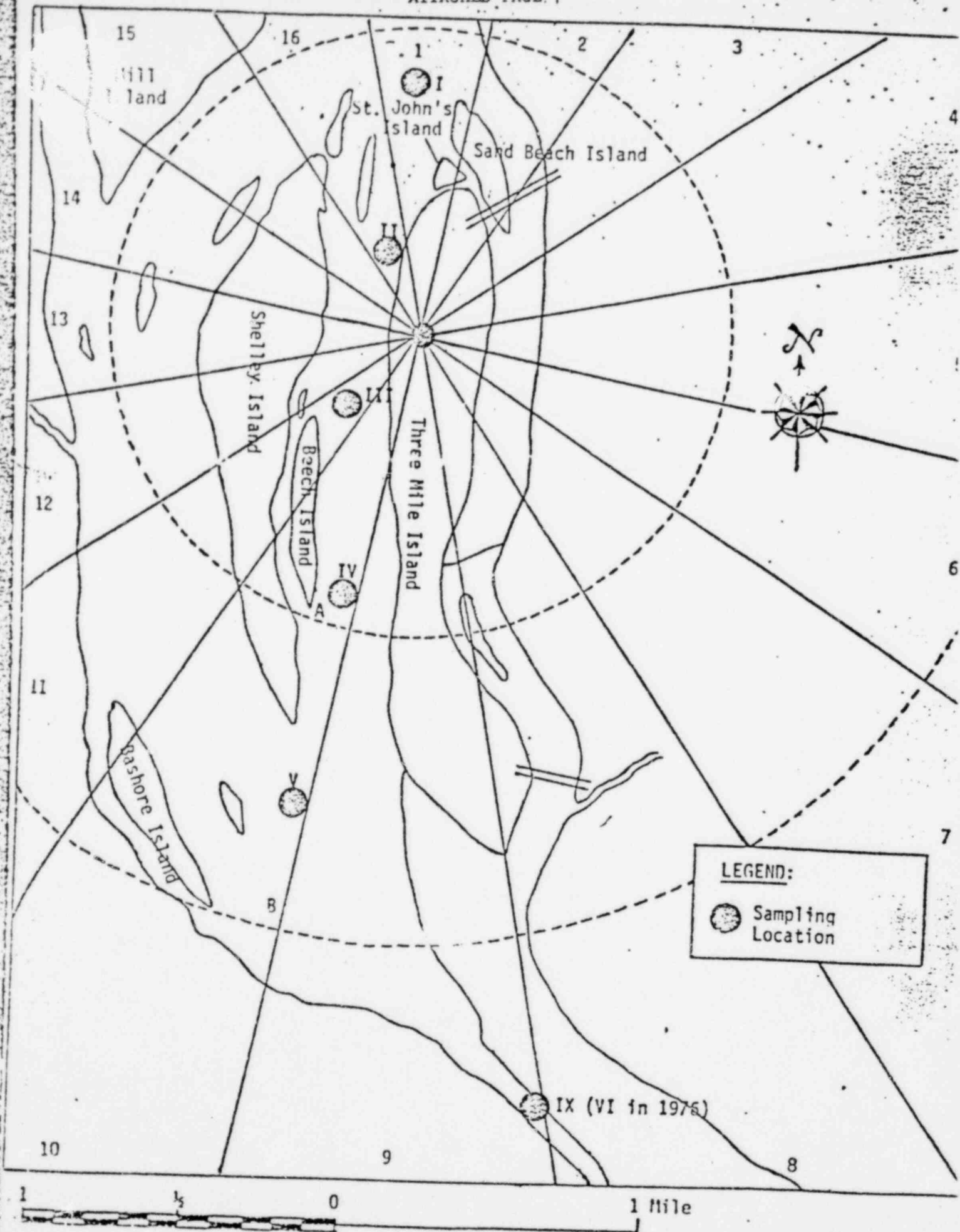
Temperature (°F) of Discharge Water

<u>Month</u>	<u>Min.</u>	<u>Ave.</u>	<u>Max.</u>	<u>Month</u>	<u>Min.</u>	<u>Ave.</u>	<u>Max.</u>
Jan.	32.1	36.0	44.6	July	64.8	78.1	89.1
Feb.	32.7	35.7	42.9	Aug.	71.5	78.1	84.5
March	32.6	38.5	46.4	Sept.	59.3	71.5	80.9
April	45.8	50.3	60.7	Oct.	48.8	57.7	68.8
May	52.0	62.5	79.0	Nov.	37.4	49.9	62.1
June	49.6	75.2	83.2	Dec.	33.4	39.9	58.4

Influent/Effluent Parameters

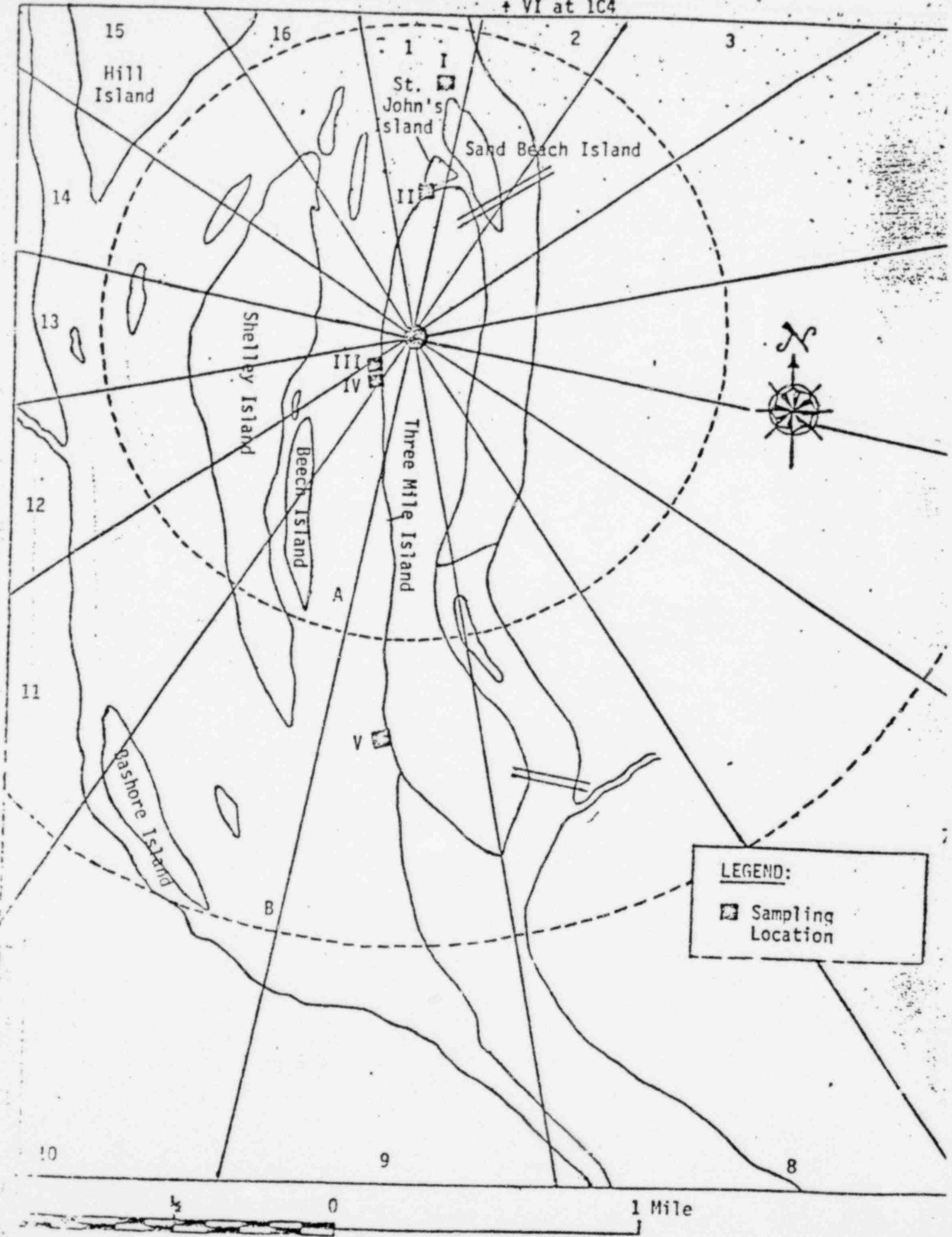
The reports entitled "Three Mile Island Nuclear Station Operational Aquatic Chemistry Study June 74 - December 76" details extensively the chemical constituents of the Susquehanna River both upstream and downstream of TMI.

Essentially, the report describes 2 data sets which were taken over the three year period. Figures 2 and 3 detail the sampling locations for each data set and tables 2 through 12 list the data.



THREE MILE ISLAND NUCLEAR STATION
H₂O CHEMISTRY SAMPLING LOCATIONS
DATA SET 2

SECTION II - FIGURE 3,
ATTACHED PAGE 8
+ VI at 1C4



THREE MILE ISLAND NUCLEAR STATION

TABLE F-1
WATER CHEMISTRY - YEARLY RESULTS PER STATION - 1974 to 1976
DATA SET 1

Parameter	Site I - 1974				Site I - 1975				Site I - 1976			
	n	min	max	mean±s.d.	n	min	max	mean±s.d.	n	min	max	mean±s.d.
Cu	11	<0.0005	0.027	0.0378±0.0030	19	0.0012	0.0100	0.0054±0.0024	17	0.0040	0.0130	0.0073±0.0020
Cr	11	<0.0020	0.0071	0.0325±0.0015	19	0.0007	0.0160	0.0033±0.0034	17	0.0004	0.0160	0.0033±0.0036
Fe	11	0.263	10.90	2.437±3.287	19	0.79	10.0	1.96±2.07	17	0.18	3.80	0.96±0.40
Mn	11	0.130	1.60	0.435±0.518	19	0.10	0.74	0.43±0.14	17	0.150	0.570	0.284±0.115
Zn	11	0.0021	0.010	0.0131±0.0128	19	0.0048	0.0730	0.0241±0.0102	17	0.0030	0.2400	0.0455±0.0663
Ca	11	0.0030	0.1500	0.0161±0.0427	19	0.0076	0.9520	0.0216±0.0110	17	0.0010	0.1170	0.0243±0.0317
Mg	11	17.0	39.2	29.6±7.7	19	6.6	35.0	19.6±8.2	17	12.0	55.0	26.3±11.8
Na	11	6.5	15.0	11.2±3.2	19	4.2	20.0	9.5±4.2	17	2.5	12.0	8.2±3.1
K	11	2.23	14.5	9.5±3.0	19	4.8	16.0	3.4±3.3	17	4.5	14.0	9.0±2.9
Phenol	0	0.0004	0.0156	3.03±0.67	19	0.95	4.0	2.10±0.94	17	0.35	3.2	1.87±0.53
				0.0355±0.0056	14	0.0034	0.0110	0.0066±0.0027	17	0.0003	0.0110	0.0042±0.0030

Parameter	Site II - 1974				Site II - 1975				Site II - 1976			
	n	min	max	mean±s.d.	n	min	max	mean±s.d.	n	min	max	mean±s.d.
Cu	11	<0.0005	0.029	0.0062±0.0030	19	<0.0005	0.0110	0.0049±0.0030	17	0.0044	0.0120	0.0032±0.0023
Cr	11	0.0011	0.0057	0.0022±0.0012	19	0.00043	0.0180	0.0035±0.0038	17	0.0005	0.0180	0.0037±0.0041
Fe	11	0.330	11.0	1.869±2.097	19	0.60	8.00	1.61±1.83	17	0.44	1.30	1.00±0.37
Mn	11	0.160	1.7	0.364±0.446	19	0.14	0.92	0.40±0.16	17	0.150	0.550	0.303±0.113
Zn	11	0.0024	0.0510	0.0106±0.0136	19	0.0051	0.0820	0.0243±0.0196	17	0.0075	0.4500	0.0576±0.1031
Ca	11	0.0045	0.1300	0.0293±0.0352	19	0.0060	0.0120	0.0194±0.0102	17	0.0013	0.0350	0.0254±0.0252
Mg	11	16.5	40.0	28.4±9.1	19	6.00	35.0	19.0±8.2	17	12.2	36.0	24.2±7.3
Na	11	5.5	11.7	8.5±2.6	19	3.5	15.0	8.6±2.5	17	2.2	13.0	7.3±2.3
K	11	5.7	12.0	8.4±2.3	19	4.9	12.0	7.7±2.3	17	4.2	14.0	7.7±2.4
Phenol	5	0.0016	0.0049	3.11±0.53	19	1.0	3.9	2.4±1.0	17	0.80	3.0	2.60±0.65
				0.0031±0.0012	14	<0.0035	0.0130	0.0051±0.0025	17	0.0003	0.0064	0.0036±0.0016

Parameter	Site III - 1974				Site III - 1975				Site III - 1976			
	n	min	max	mean±s.d.	n	min	max	mean±s.d.	n	min	max	mean±s.d.
Cu	11	<0.0005	0.029	0.0097±0.0003	19	<0.0005	0.0150	0.0004±0.0046	17	0.0044	0.0150	0.0131±0.0052
Cr	11	0.0016	0.0090	0.0025±0.0018	19	0.00075	0.0170	0.0045±0.0035	17	0.0013	0.0210	0.0045±0.0040
Fe	11	0.360	8.00	1.745±2.161	19	0.97	10.00	2.30±1.97	17	0.53	2.0	1.26±0.41
Mn	11	0.206	1.3	0.363±0.314	19	0.13	0.77	0.30±0.15	17	0.150	0.509	0.336±0.106
Zn	11	0.0050	0.0410	0.0111±0.0100	19	0.0031	0.1000	0.0314±0.0273	17	0.0012	0.4800	0.0675±0.1025
Ca	11	0.0090	0.1200	0.0396±0.0305	19	0.0092	0.1000	0.0296±0.0218	17	0.0043	0.0650	0.0291±0.0100
Mg	11	19.92	42.0	33.6±3.7	19	3.8	41.0	24.1±11.0	17	9.5	53.0	29.2±12.4
Na	11	1.92	14.5	10.2±2.7	19	4.9	17.0	11.1±3.5	17	2.0	16.0	9.0±3.9
K	11	2	14.7	10.4±2.7	19	5.0	22.0	10.4±4.1	17	3.0	16.0	9.4±3.4
Phenol	3	0.0006	0.0069	3.61±0.81	19	1.6	5.2	3.1±1.3	17	1.00	4.00	2.74±1.20
				0.0010±0.0021	14	<0.0035	0.0126	0.0049±0.0029	17	0.0018	0.062	0.0036±0.0010

WATER CHEMISTRY - YEARLY RESULTS PER STATION - 1974 to 1976

DATA SET 1

Results in mg/l

Parameter	Site IV - 1974			Site IV - 1975			Site IV - 1976		
	n	min	max	n	min	max	n	min	max
Cu	11	<0.0005	0.023	19	0.0095	0.0110	17	0.0034	0.0250
Cr	11	0.0015	0.0055	19	0.00058	0.0170	17	0.0003	0.0300
Fe	11	0.493	8.6	19	0.90	8.80	17	0.24	1.60
Mn	11	0.190	1.6	19	0.16	0.90	17	0.140	0.516
Hf	11	0.0012	0.0390	19	0.0047	0.1000	17	<0.0100	0.292±0.103
Zn	11	0.0060	0.1200	19	0.0078	0.0540	17	0.0024	0.0629±0.1186
Ca	11	15.5	42.6	19	2.4	36.0	17	8.0	42.0
Mg	11	6.0	12.6	19	3.6	15.0	17	3.1	13.0
Na	11	5.7	12.8	19	4.4	15.0	17	5.4	13.0
K	11	2.1	4.2	19	0.9	4.2	17	0.91	3.3
Phenol	8	0.0003	0.0065	14	0.0014	0.0110	17	0.0024	0.0093
									0.0041±0.0016

Parameter	Site V - 1974			Site V - 1975			Site V - 1976		
	n	min	max	n	min	max	n	min	max
Cu	11	<0.0005	0.023	19	<0.0005	0.0092	16	0.0040	0.079
Cr	11	0.001	0.0038	19	0.0013	0.0150	17	0.0010	0.0250
Fe	11	0.325	6.30	19	0.62	9.50	17	0.22	1.80
Mn	11	0.168	1.2	19	0.13	0.72	17	0.130	0.460
Hf	11	0.00467	0.0370	19	0.0044	0.1200	17	<0.0100	0.269±0.111
Zn	11	0.0050	0.0900	19	0.0045	0.0450	17	0.0012	0.0500
Ca	11	17.5	37.0	19	7.4	36.0	17	7.0	40.0
Mg	11	6.0	13.6	19	3.6	17.0	17	2.7	14.0
Na	11	5.9	13.2	19	5.0	14.0	17	5.5	13.0
K	11	2.2	3.8	19	0.8	4.0	17	0.89	3.0
Phenol	8	0.00047	0.0071	14	0.0026	0.0038	17	0.0008	0.0062
									0.0035±0.0015

Parameter	Site VI - 1975		
	n	min	max
Cu	10	<0.0005	0.0130
Cr	10	0.0012	0.0099
Fe	10	0.13	4.2
Mn	10	0.02	0.49
Hf	10	0.0038	0.1200
Zn	10	0.0055	0.0380
Ca	10	7.8	35.0
Mg	10	3.9	8.0
Na	10	4.4	7.0
K	10	1.4	5.0
Phenol	1	<0.0035	<0.0035

Parameter	Site VI - 1975		
	n	min	max
Cu	10	<0.0005	0.0130
Cr	10	0.0012	0.0099
Fe	10	0.13	4.2
Mn	10	0.02	0.49
Hf	10	0.0038	0.1200
Zn	10	0.0055	0.0380
Ca	10	7.8	35.0
Mg	10	3.9	8.0
Na	10	4.4	7.0
K	10	1.4	5.0
Phenol	1	<0.0035	<0.0035

TABLE 4

WATER CHEMISTRY - YEARLY RESULTS ALL STATIONS - 1974 to 1976

DATA SET 1

Results in mg/l

Parameter	1974			
	n	min	max	mean \pm 1 σ
Cu	55	<0.0005	0.038	0.0068 \pm 0.0073
Cr	55	0.0011	0.0080	0.0023 \pm 0.0012
Fe	55	0.260	11.0	1.817 \pm 2.532
Mn	55	0.130	1.90	0.370 \pm 0.392
Ni	55	0.0012	0.0440	0.0113 \pm 0.0108
Zn	55	0.0038	0.150	0.0350 \pm 0.0320
Ca	55	16.5	44.0	30.1 \pm 7.89
Mg	55	5.50	15.8	9.86 \pm 2.88
Na	55	5.30	14.7	9.28 \pm 2.55
K	55	2.10	5.40	3.176 \pm 0.650
Phenol	40	0.0003	0.0186	0.0039 \pm 0.0030

Parameter	1975			
	n	min	max	mean \pm 1 σ
Cu	105	<0.0005	0.015	0.0054 \pm 0.0035
Cr	105	0.00043	0.018	0.0037 \pm 0.0034
Fe	105	0.130	10.0	1.87 \pm 1.87
Mn	105	0.020	0.820	0.358 \pm 0.171
Ni	105	0.0031	0.120	0.0286 \pm 0.0246
Zn	105	0.0045	0.100	0.0216 \pm 0.0154
Ca	105	6.60	41.0	20.25 \pm 9.02
Mg	105	3.50	20.0	9.15 \pm 3.37
Na	105	4.40	22.0	8.34 \pm 3.24
K	105	0.800	5.20	2.52 \pm 1.10
Phenol	71	0.0014	0.0130	0.0050 \pm 0.0024

Parameter	1976			
	n	min	max	mean \pm 1 σ
Cu	84	0.0034	0.790	0.0098 \pm 0.0043
Cr	85	0.00042	0.0250	0.0042 \pm 0.0051
Fe	85	0.180	2.00	1.026 \pm 0.418
Mn	85	0.130	0.570	0.2942 \pm 0.1096
Ni	85	0.0012	0.550	0.0614 \pm 0.1007
Zn	85	0.0010	0.117	0.0234 \pm 0.0218
Ca	85	7.00	55.0	25.24 \pm 10.63
Mg	85	2.00	14.0	7.94 \pm 3.08
Na	85	3.00	16.0	8.16 \pm 2.63
K	85	0.800	4.80	2.134 \pm 0.835
Phenol	85	0.0008	0.0110	0.0038 \pm 0.0019

TABLE 6

WATER CHEMISTRY - PROGRAM RESULTS ALL STATIONS - 1974 to 1976

DATA SET 1

Results in mg/l

Parameter	n	min	max	mean \pm 1 σ
Cu	244	<0.0005	0.790	0.0072 \pm 0.0051
Cr	245	0.00042	0.0250	0.0034 \pm 0.0034
Fe	245	0.130	11.0	1.5896 \pm 1.7505
Mn	245	<0.0200	1.90	0.3418 \pm 0.2346
Ni	245	0.0012	0.550	0.0334 \pm 0.0580
Zn	245	0.0010	0.150	0.0265 \pm 0.0228
Ca	245	6.60	55.0	24.89 \pm 9.57
Mg	245	2.00	20.0	8.99 \pm 3.03
Na	245	3.00	22.0	8.58 \pm 2.71
K	245	0.800	5.40	2.6043 \pm 0.9420
Phenol	196	0.0003	0.011	0.0042 \pm 0.0023

TABLE 7

WATER CHEMISTRY - YEARLY RESULTS PER STATION - 1974 to 1976

DATA SET 2

Results in mg/l

Parameter	Site I - 1974			Site I - 1975			Site I - 1976			mean±s
	n	min	max	n	min	max	n	min	max	
Alk	5	77.6	96.0	5	24.6	92.8	5	46.0	117.0	76.3±34.1
pH	5	9.0	9.25	5	6.88	9.31	5	7.30	8.96	8.37±0.71
D.O.	2	12.4	13.6	5	8.54	9.91	5	6.9	12.0	9.2±1.9
SS	5	5.0	22.0	5	16.6	35.3	4	6.3	55.0	22.6±22.0
Ca	5	25.68	42.50	5	20.0	32.0	5	16.0	26.0	22.0±4.2
Mg	5	9.63	18.5	5	5.0	12.0	5	4.0	8.5	6.9±1.6
Na	5	8.75	13.70	5	6.3	14.0	5	4.2	10.0	7.1±2.6
K	5	1.7	2.6	5	1.6	2.2	5	1.4	1.9	1.66±0.21
Hard	3	0.015	0.045	5	0.05	0.17	5	0.040	0.062	0.039±0.027
NO ₃ -N	3	0.0195	0.4790	3	0.023	0.6900	4	0.07	0.70	0.37±0.30
NO ₂ -N	5	0.0015	0.0245	5	0.0025	0.0120	5	0.0025	0.005	0.0054±0.0031
Cl	5	10.62	15.6	5	2.0	17.4	5	5.0	14.0	9.7±3.6
SO ₄	5	75.6	163.2	5	48.0	143.0	5	40.0	73.0	59.6±15.5
FC ₁ (s)	5	0.024	0.400	5	0.023	0.101	5	0.007	0.01	0.07±0.047
PO ₄ (t)	4	0.054	0.523	5	0.120	0.790	5	0.092	0.260	0.130±0.065
Phenol	4	0.00164	0.0092	4	<0.0035	<0.0035	5	0.0035	0.0130	0.0067±0.0039
Cr	5	0.0010	0.0024	5	0.0018	0.0046	5	<0.0020	0.0015	0.0013±0.0033
Cu	5	<0.0005	0.0071	5	0.0022	0.0014	5	0.0040	0.03	0.0113±0.0107
Fe	5	0.170	1.000	5	0.40	2.0	5	0.37	1.30	0.73±0.40
Mn	5	<0.020	0.320	5	0.16	0.55	5	0.09	0.55	0.15±0.261
Ni	5	0.00343	0.0154	5	0.0096	0.0320	5	0.0140	0.0690	0.025±0.0230
Zn	5	0.0286	0.029	5	0.0049	0.0330	5	0.0060	0.0230	0.0104±0.0072

Parameter	Site II - 1974			Site II - 1975			Site II - 1976			mean±s
	n	min	max	n	min	max	n	min	max	
Alk	5	68.4	96.0	5	27.4	86.0	5	47.0	113.0	76.0±33.0
pH	5	7.93	8.80	5	7.30	9.09	5	7.4	9.92	8.37±0.63
D.O.	2	11.5	19.0	5	9.6	10.2	5	6.0	12.0	9.2±1.0
SS	5	2.5	23.0	5	20.4	37.7	4	9.7	44.0	20.7±15.9
Ca	5	27.12	41	5	20.0	33.0	5	16.0	28.0	23.2±4.6
Mg	5	11.0	19.5	5	4.6	16.0	5	4.6	10.0	7.6±2.3
Na	5	9.00	13.60	5	6.4	14.0	5	4.2	10.0	7.1±2.6
K	5	1.81	2.7	5	1.6	2.3	5	1.4	1.9	1.65±0.22
Hard	3	0.015	0.054	5	0.06	0.14	4	0.040	0.065	0.001±0.027
NO ₃ -N	3	0.0217	0.469	5	0.20	0.68	4	0.19	0.73	0.43±0.27
NO ₂ -N	5	0.0013	0.0243	5	0.0042	0.0130	5	0.003	0.006	0.007±0.003
Cl	5	10.5	16.1	5	5.7	17.4	5	5.2	14.6	9.8±3.4
SO ₄	5	80.3	167.0	5	46.0	149.0	5	26.0	81.0	56.4±21.5
FC ₁ (s)	5	0.009	0.353	5	0.045	0.073	5	0.007	0.02	0.019±0.046
PO ₄ (t)	4	0.050	0.526	5	0.0734	0.4000	5	0.130	0.55	0.296±0.155
Phenol	5	0.0010	0.0054	4	<0.0035	<0.0035	5	0.0010	0.0032	0.0013±0.0029
Cr	5	0.0012	0.0019	5	0.0017	0.0049	5	0.0007	0.0035	0.0020±0.0010
Cu	5	<0.0005	0.0074	5	0.0020	0.0062	5	0.0069	0.0250	0.0136±0.0079
Fe	5	0.150	1.060	5	0.51	1.00	5	0.30	1.3	0.75±0.45
Mn	5	0.050	0.374	5	0.22	0.64	5	0.10	0.20	0.144±0.066
Ni	5	0.00482	0.0122	5	0.0060	0.0290	5	0.0190	0.0700	0.0326±0.0037
Zn	5	0.0010	0.0139	5	0.0056	0.0190	5	0.0039	0.0220	0.0121±0.0037

TABLE 8

WATER CHEMISTRY - YEARLY RESULTS PER STATION - 1974 to 1976

DATA SET 2

Results in mg/l

Parameter	Site III - 1974			Site III - 1975			Site III - 1976		
	n	min	max	n	min	max	n	min	max
Alk	5	58.4	99.6	5	24.6	94.8	5	45.0	119.0
Cl	5	6.00	9.61	5	7.12	9.48	5	7.6	8.75
D.O.	2	9.00	11.70	5	7.07	11.3	5	7.6	8.75
SS	5	5.8	30.0	5	13.6	33.5	4	8.0	46.0
Ca	5	26.84	42.5	5	20.0	34.0	5	16.0	30.0
Mg	5	10.0	19.0	5	5.0	20.0	5	5.5	11.0
Na	5	8.90	14.60	5	6.1	12.0	5	4.3	12.0
K	5	2.08	2.8	5	1.6	2.5	5	1.4	2.2
NO ₃ N	3	0.06	0.215	5	0.10	0.13	5	0.030	0.300
NO ₂ N	3	0.0214	0.517	3	0.024	0.690	4	0.22	0.83
NO ₃ N	5	0.0016	0.0255	5	0.0020	0.0140	5	0.0014	0.0150
Cl	5	10.4	17.1	5	6.1	13.2	5	5.6	16.5
SO ₄	5	20.1	170.0	5	51.0	160.0	5	32.0	84.0
e-P04	5	0.011	1.107	5	0.031	0.076	5	0.097	0.01
PO ₄ (t)	5	0.070	1.107	5	0.0374	0.96	5	0.140	0.420
Phenol	4	0.0020	0.0072	4	<0.0035	0.0024	5	0.0025	0.0120
Cr	5	<0.0020	0.0013	5	0.0018	0.0063	5	0.003	0.0040
Cu	5	<0.0005	0.0023	5	0.0023	0.0059	5	0.0016	0.0120
Fe	5	0.160	0.335	5	0.20	1.90	5	0.36	1.30
Mn	5	0.020	0.252	5	<0.02	0.48	5	0.00	0.25
Ni	5	0.0039	0.0066	5	0.0006	0.0210	5	0.0220	0.0770
Zn	5	0.00312	0.0160	5	0.0023	0.0310	5	0.0095	0.0420

Parameter	Site III - 1975			Site III - 1976		
	n	min	max	n	min	max
Alk	5	59.3	27.6	5	59.3	27.6
Cl	5	9.41	0.93	5	9.41	0.93
D.O.	5	9.09	1.44	5	9.09	1.44
SS	4	25.0	7.9	4	25.0	7.9
Ca	5	25.6	5.4	5	25.6	5.4
Mg	5	10.6	6.1	5	10.6	6.1
Na	5	8.2	2.4	5	8.2	2.4
K	5	1.9	0.33	5	1.9	0.33
NO ₃ N	5	0.110	0.012	5	0.110	0.012
NO ₂ N	4	0.315	0.333	4	0.315	0.333
Cl	5	0.0064	0.0043	5	0.0064	0.0043
SO ₄	5	11.2	4.7	5	11.2	4.7
e-P04	5	0.076	0.028	5	0.076	0.028
PO ₄ (t)	5	0.351	0.3458	5	0.351	0.3458
Phenol	5	0.0032	0.0006	5	0.0032	0.0006
Cr	5	0.0034	0.0020	5	0.0034	0.0020
Cu	5	0.0033	0.0015	5	0.0033	0.0015
Fe	5	0.96	0.65	5	0.96	0.65
Mn	5	0.75	0.19	5	0.75	0.19
Ni	5	0.0157	0.0069	5	0.0157	0.0069
Zn	5	0.0242	0.0316	5	0.0242	0.0316

Parameter	Site IV - 1974			Site IV - 1975			Site IV - 1976		
	n	min	max	n	min	max	n	min	max
Alk	5	73.2	93.6	5	34.0	63.2	5	44.0	113.0
Cl	5	7.05	9.02	5	7.34	8.95	5	7.40	9.05
D.O.	2	9.0	12.85	5	8.27	9.94	5	6.7	12.0
SS	5	3.5	31.0	5	3.0	23.6	5	7.3	19.0
Ca	5	23.92	36.5	5	19.0	29.0	4	22.0	29.0
Mg	5	7.63	15.0	5	4.4	15.0	5	5.4	9.5
Na	5	7.95	12.10	5	5.7	12.0	5	4.2	10.0
K	5	1.9	2.75	5	1.4	2.2	5	1.3	2.0
NO ₃ N	3	0.025	0.054	5	0.05	0.16	5	0.060	0.09
NO ₂ N	3	0.0137	0.425	3	0.11	0.75	4	0.06	0.72
NO ₃ N	5	0.0013	0.0239	5	0.0030	0.1400	5	0.0020	0.006
Cl	5	9.1	14.76	5	6.4	19.0	5	5.6	13.6
SO ₄	5	63.5	137.0	5	46.0	136.0	5	22.0	63.0
e-P04	5	0.018	0.036	5	0.024	0.073	5	0.01	0.035
PO ₄ (t)	5	0.110	0.413	5	0.0318	0.3100	5	0.029	0.300
Phenol	4	0.0014	0.0050	4	<0.0035	0.0035	5	<0.0035	0.0094
Cr	5	0.0063	0.0016	5	0.0017	0.0071	5	0.0093	0.001
Cu	5	<0.0005	0.0074	5	0.0016	0.0067	5	0.0059	0.0160
Fe	5	0.309	0.503	5	0.053	1.600	5	0.35	1.20
Mn	5	0.020	0.170	5	0.016	0.520	5	0.053	0.17
Ni	5	0.0015	0.0065	5	0.0049	0.0240	5	0.0050	0.0020
Zn	5	0.00349	0.0070	5	0.0024	0.0120	5	0.0070	0.0200

Parameter	Site IV - 1974			Site IV - 1975			Site IV - 1976		
	n	min	max	n	min	max	n	min	max
Alk	5	60.5	8.3	5	65.2	22.0	5	44.0	113.0
Cl	5	6.65	0.46	5	8.75	0.71	5	7.40	9.05
D.O.	2	10.93	2.72	5	8.01	0.69	5	6.7	12.0
SS	5	15.7	12.3	5	15.3	0.8	5	7.3	19.0
Ca	5	29.96	4.74	5	23.0	3.7	4	22.0	29.0
Mg	5	10.70	2.69	5	8.7	4.3	5	5.4	9.5
Na	5	9.65	1.79	5	7.3	2.7	5	4.2	10.0
K	5	2.2	0.38	5	1.6	0.30	5	1.3	2.0
NO ₃ N	3	0.060	0.038	5	0.102	0.039	5	0.060	0.09
NO ₂ N	3	0.131	0.2160	4	0.36	0.34	5	0.06	0.72
NO ₃ N	5	0.0070	0.0118	5	0.0309	0.0610	5	0.0020	0.006
Cl	5	12.49	2.32	5	11.4	5.3	5	5.6	13.6
SO ₄	5	94.3	27.6	5	70.2	34.4	5	22.0	63.0
e-P04	5	0.012	0.033	5	0.056	0.030	5	0.01	0.035
PO ₄ (t)	5	0.200	0.121	5	0.190	0.0926	5	0.029	0.300
Phenol	4	0.0027	0.0016	5	0.0035	0.0035	5	<0.0035	0.0094
Cr	5	0.0017	0.0005	5	0.0017	0.0071	5	0.0093	0.001
Cu	5	0.0074	0.0030	5	0.0016	0.0067	5	0.0059	0.0160
Fe	5	0.309	0.503	5	0.053	1.600	5	0.35	1.20
Mn	5	0.020	0.170	5	0.016	0.520	5	0.053	0.17
Ni	5	0.0015	0.0065	5	0.0049	0.0240	5	0.0050	0.0020
Zn	5	0.00349	0.0070	5	0.0024	0.0120	5	0.0070	0.0200

TABLE 9

WATER CHEMISTRY - YEARLY RESULTS PER STATION - 1974 to 1976

DATA SET 2

Results in mg/l

Parameter	Site V - 1974				Site V - 1975				Site V - 1976			
	n	min	max	mean±lo	n	min	max	mean±lo	n	min	max	mean±lo
Alk	5	43.0	84.4	61.4±17.6	5	31.6	72.4	44.6±17.1	5	31.0	110.0	64.8±32.5
pH	5	7.30	9.02	8.40±0.49	5	6.95	9.02	7.90±1.06	5	7.4	8.79	8.28±0.63
D.O.	2	9.0	12.23	10.62±2.28	5	8.2	10.1	8.60±0.82	5	7.1	12.0	9.1±1.9
SS	5	7.0	15.0	8.7±3.7	5	2.0	19	9.2±6.9	4	11.0	17.0	14.5±2.6
Ca	5	17.0	32.0	26.10±5.66	5	13.0	28.0	18.0±6.2	5	15.0	26.0	19.6±4.5
Mg	5	6.4	11.5	9.35±1.90	5	3.0	13.0	7.3±3.6	5	4.4	8.5	6.3±1.9
H ₂	5	5.15	9.80	7.34±1.91	5	2.5	11.0	5.4±3.5	5	3.5	10.0	6.2±2.9
K	5	1.8	2.3	1.90±0.42	5	1.3	2.0	1.62±0.31	5	1.2	2.0	1.66±0.32
NH ₃	3	0.028	0.032	0.053±0.040	4	<0.100	0.0420	0.036±0.024	5	<0.100	0.0750	0.095±0.011
NO ₃	3	0.0030	0.3450	0.1664±0.1606	3	0.10	0.63	0.33±0.27	4	0.18	0.71	0.41±0.26
NO ₂	5	0.0012	0.0215	0.0077±0.0035	5	0.0033	0.0110	0.0066±0.0036	5	0.003	0.006	0.007±0.003
Cl	5	7.15	12.5	9.50±2.45	5	3.95	16.4	7.61±5.03	5	4.2	16.8	8.4±4.1
SO ₄	5	57.5	99.6	82.1±17.4	5	39.0	106.0	57.3±28.9	5	24.0	57.0	43.4±16.0
o-P04	5	0.015	0.010	0.235±0.475	5	0.023	0.076	0.074±0.031	5	0.007	0.02	0.017±0.003
P04(t)	5	0.062	1.010	0.320±0.399	4	0.120	0.250	0.173±0.060	5	0.064	0.370	0.211±0.116
Phenol	4	<0.0035	0.0064	0.0052±0.0027	5	<0.0035	0.0030	0.0034±0.0002	5	0.0030	0.0167	0.0053±0.0014
Cr	5	0.0012	0.0016	0.0012±0.0004	5	0.0013	0.0093	0.0031±0.0035	5	0.0007	0.002	0.0016±0.0006
Cu	5	<0.0005	0.0052	0.0019±0.0021	5	0.0013	0.0059	0.0029±0.0020	5	0.0012	0.0250	0.0033±0.0039
Fe	5	0.142	0.350	0.248±0.102	5	0.19	1.10	0.43±0.42	5	0.44	1.30	0.62±0.32
Mn	5	0.050	0.130	0.099±0.031	5	<0.020	0.260	0.127±0.095	5	0.11	0.16	0.13±0.02
Zn	5	0.0052	0.00605	0.0093±0.0024	5	0.0039	0.0230	0.0149±0.0099	5	0.0053	0.0780	0.0293±0.0279
	5	0.00593	0.015	0.0098±0.0037	5	0.0016	0.0076	0.0046±0.0027	5	0.0036	0.0420	0.0129±0.0163

Parameter	Site IX - 1974				Site IX - 1975				Site VI* - 1976			
	n	min	max	mean±lo	n	min	max	mean±lo	n	min	max	mean±lo
Alk	5	66.0	119.0	81.6±21.0	4	64.9	111.0	81.3±21.0	5	20.0	110.0	66.2±33.3
pH	5	7.90	8.92	8.45±0.42	4	7.35	8.82	8.07±0.61	5	7.60	8.71	8.26±0.51
D.O.	1	13.60	13.60	13.60±0.0	4	7.01	10.0	8.6±1.3	5	6.6	11.0	9.8±1.7
SS	5	2.3	29.0	9.1±11.2	4	6.0	22.0	11.0±7.4	4	11.0	20.0	14.5±4.7
Ca	5	17.0	30.5	24.50±4.97	4	15.0	24.0	20.0±3.9	5	12.0	25.0	19.4±4.7
Mg	5	6.24	11.0	8.75±1.79	4	5.1	8.0	6.3±1.3	5	4.2	8.3	6.6±1.6
H ₂	5	4.40	8.70	6.30±1.70	4	2.5	5.6	4.3±1.4	5	2.5	8.3	5.1±2.2
K	5	1.3	2.3	1.69±0.42	4	1.3	1.9	1.69±0.26	5	1.1	2.1	1.62±0.45
NH ₃	3	0.029	0.051	0.060±0.036	3	<0.100	0.0460	0.032±0.031	5	0.030	0.04	0.074±0.036
NO ₃	3	0.0091	0.254	0.1640±0.1348	3	0.12	1.07	0.49±0.51	4	0.16	0.91	0.46±0.37
NO ₂	5	0.0009	0.024	0.0067±0.0100	4	0.0041	0.0210	0.0101±0.0077	5	0.003	0.006	0.006±0.004
Cl	5	6.2	10.66	8.49±2.06	4	4.6	7.6	6.2±1.2	5	4.1	11.3	7.3±2.6
SO ₄	5	40.3	67.0	60.1±11.2	4	22.0	42.0	32.8±8.7	5	<20.0	52.0	40.4±16.0
P04(s)	5	0.031	0.563	0.157±0.231	4	0.0370	0.0900	0.0654±0.0264	5	0.007	0.02	0.048±0.047
P04(t)	5	0.057	0.621	0.280±0.214	3	0.0673	0.3600	0.206±0.1468	5	0.092	0.300	0.200±0.090
Phenol	4	0.0012	0.0054	0.0032±0.0018	3	<0.0015	0.0064	0.0045±0.0017	5	<0.0035	0.0059	0.0046±0.0033
Cr	5	0.0010	0.0011	0.0016±0.0005	4	0.0011	0.0110	0.0040±0.0047	5	0.0003	0.001	0.0015±0.0003
Ca	5	<0.0005	0.0071	0.0025±0.0030	4	0.0015	0.0065	0.0034±0.0022	5	0.0041	0.0130	0.0050±0.0035
Fe	5	0.130	0.285	0.219±0.069	4	0.07	0.60	0.31±0.22	6	0.30	0.50	0.43±0.10
Mn	5	<0.020	0.140	0.076±0.045	4	0.04	0.21	0.093±0.076	5	0.052	0.21	0.130±0.063
H ₂	5	0.0034	0.00903	0.0074±0.0032	4	0.0039	0.0310	0.0137±0.0126	5	0.0075	0.034	0.0313±0.0305
Zn	5	0.0011	0.0114	0.0066±0.0040	4	0.0024	0.0050	0.0037±0.0015	5	0.0055	0.0310	0.0125±0.0108

*Same location, different number

TABLE 11

WATER CHEMISTRY - PROGRAM RESULTS PER STATION - 1974 to 1976

DATA SET 2
Results in mg/l

Parameter	Site I			Site II			Site III			Site VI		
	n	min	max	n	min	max	n	min	max	n	min	max
Alk	15	24.6	117.0	15	27.4	113.0	15	24.6	110.0	15	20.0	118.0
D.O.	15	6.88	0.96	15	7.38	9.69	15	6.00	9.40	15	7.35	8.92
SS	12	6.90	13.6	12	6.00	18.0	12	6.90	12.0	11	6.60	13.6
Ca	14	5.00	55.0	14	2.50	44.0	14	5.80	44.0	13	2.30	29.0
Mg	15	16.0	42.5	15	16.0	41.0	15	16.0	44.0	14	12.0	30.5
Na	15	4.90	13.5	15	4.60	18.5	15	16.0	42.5	14	4.20	11.0
K	15	4.20	13.7	15	4.20	14.0	15	5.00	20.0	15	4.30	14.6
SO ₄ -N	15	1.40	2.60	15	1.40	2.70	15	1.40	2.80	15	1.40	2.80
NO ₃ -N	13	0.0150	0.170	13	0.0150	0.140	13	0.0150	0.300	13	0.0150	0.300
NO ₂ -N	10	0.0023	0.700	10	0.0217	0.730	10	0.0214	0.820	10	0.0214	0.820
Cl ⁻	15	0.0015	0.0245	15	0.0013	0.0243	15	0.0016	0.0255	15	0.0016	0.0255
SO ₄	15	5.00	17.4	15	5.20	17.4	15	5.60	18.2	15	5.60	18.2
PO ₄ (s)	15	40.0	168.2	15	26.0	167.0	15	32.0	170.0	15	32.0	170.0
PO ₄ (t)	15	0.0070	0.409	15	0.0070	0.358	15	0.0070	1.107	15	0.0070	1.107
Phenol	13	0.0040	0.790	13	0.0032	0.550	13	0.0032	0.820	13	0.0032	0.820
Cr	15	0.0014	0.0130	15	0.0010	0.0032	15	0.0010	0.0120	15	0.0010	0.0120
Cu	15	0.0010	0.0046	15	0.0007	0.0049	15	0.0003	0.0068	15	0.0003	0.0068
Fe	15	<0.0005	0.0300	15	<0.0005	0.0250	15	<0.0005	0.0120	15	<0.0005	0.0120
Mn	15	0.170	2.00	15	0.150	1.80	15	0.160	1.90	15	0.160	1.90
Ni	15	<0.0200	0.550	15	0.0500	0.640	15	<0.0200	0.480	15	<0.0200	0.480
Zn	15	0.00343	0.0690	15	0.00482	0.0700	15	0.0039	0.0770	15	0.0039	0.0770
	15	0.0049	0.0330	15	0.0010	0.0220	15	0.0028	0.0810	15	0.0028	0.0810
mean±s												
			74.9±27.03			72.27±25.74						76.01±27.75
			8.43±0.69			8.43±0.61						8.27±0.57
			9.91±1.32			10.17±2.02						9.28±2.04
			22.6±12.90			22.45±11.47						11.35±0.11
			9.04±3.45			26.87±6.06						21.39±4.87
			8.02±2.83			10.41±4.07						7.07±1.97
			1.89±0.32			8.49±2.82						5.2±1.9
			0.0799±0.0399			1.95±0.35						1.73±0.33
			0.3094±0.2602			0.1163±0.0666						0.0723±0.0323
			0.0052±0.0060			0.3591±0.2421						0.3802±0.3604
			11.34±3.51			0.0072±0.0059						0.0074±0.0072
			83.67±37.39			11.43±3.58						7.41±2.15
			0.0756±0.0980			86.13±40.37						45.26±16.62
			0.2686±0.1922			0.0720±0.0068						0.0919±0.1409
			0.0049±0.0032			0.2949±0.1577						0.2323±0.1519
			0.0021±0.0007			0.0016±0.0019						0.0041±0.0014
			0.0062±0.0070			0.0022±0.0010						0.0022±0.0025
			0.791±0.5406			0.0067±0.0068						0.0017±0.0037
			0.222±0.171			0.8156±0.5032						0.0700
			0.0177±0.0163			0.223±0.1511						0.3299±0.1559
			0.0126±0.0096			0.0192±0.0167						0.1015±0.0628
						0.0105±0.0051						0.0177±0.0210
												0.0079±0.0074
mean±s												
			73.1±21.82			56.93±23.61						
			8.43±0.61			8.22±0.75						
			9.28±1.71			9.26±1.56						
			14.53±8.07			10.54±5.46						
			25.79±4.65			21.5±6.11						
			8.05±3.26			7.65±2.74						
			8.22±2.52			6.31±2.76						
			1.93±0.41			1.73±0.35						
			0.0376±0.0335			0.0015±0.0295						
			0.3103±0.2720			0.3109±0.2337						
			0.0151±0.0352			0.0071±0.0052						
			11.13±3.75			8.53±3.82						
			73.57±34.01			60.93±25.94						
			0.0506±0.0337			0.1106±0.2497						
			0.2013±0.0962			0.239±0.2317						
			0.0050±0.0020			0.0047±0.0018						
			0.0021±0.0014			0.0021±0.0020						
			0.0048±0.0040			0.0047±0.0060						
			0.5373±0.4379			0.43±0.347						
			0.149±0.119			0.186±0.0563						
			0.0162±0.0197			0.0176±0.0184						
			0.0090±0.0052			0.0090±0.0097						

TABLE 12

WATER CHEMISTRY - PROGRAM RESULTS ALL STATIONS - 1974 to 1976

DATA SET 2

Results in mg/l

Parameter	n	min	max	mean \pm 1 σ
Alk	89	20.0	118.0	70.14 \pm 24.17
pH	89	6.80	9.62	8.33 \pm 0.63
D.O.	70	6.60	18.0	10.05 \pm 2.31
SS	88	2.00	55.0	17.10 \pm 10.55
Ca	89	12.0	42.5	24.99 \pm 6.06
Mg	89	3.80	20.0	9.0283 \pm 3.5374
Na	89	2.50	14.6	7.8026 \pm 2.8407
K	89	1.10	2.70	1.8796 \pm 0.3650
NH ₃ -N	76	0.0150	0.300	0.0848 \pm 0.0422
NO ₃ -N	65	0.0023	1.07	0.3368 \pm 0.2591
NO ₂ -N	89	0.0009	0.140	0.0085 \pm 0.0147
Cl	89	3.95	19.8	10.29 \pm 3.63
SO ₄	89	<20.0	170	73.93 \pm 35.69
PO ₄ (s)	89	0.0070	1.107	0.0883 \pm 0.1601
PO ₄ (t)	87	0.0290	1.107	0.2682 \pm 0.1917
Phenol	82	0.0010	0.0130	0.0041 \pm 0.0020
Cr	89	0.0003	0.0110	0.0022 \pm 0.0015
Cu	89	<0.0005	0.0300	0.0052 \pm 0.0052
Fe	89	0.0580	2.00	0.616 \pm 0.4455
Mn	89	0.0160	0.640	0.1697 \pm 0.1244
Ni	89	0.0015	0.0240	0.0182 \pm 0.0175
Zn	89	0.0010	0.0810	0.0114 \pm 0.0106

FOR AGENCY USE									

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

FOR AGENCY USE	
SCHED. NO.	_____

<p>1. Improvements</p> <p>a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.</p> <p>b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)</p> <p>Locally developed plan Areawide Plan Basic Plan State approved implementation schedule Federal approved water quality standards implementation plan. Federal enforcement procedure or action State court order Federal court order</p> <p>c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.</p>	<p>300 N/A</p> <p>301a _____</p> <p>301b <input type="checkbox"/> LOC N/A <input type="checkbox"/> ARE <input type="checkbox"/> BAS <input type="checkbox"/> SQS <input type="checkbox"/> WQS <input type="checkbox"/> ENF <input type="checkbox"/> CRT <input type="checkbox"/> FED</p> <p>301c 3-character (general) N/A _____</p> <p>301d 6-character (specific) (see Table II) _____ _____ _____</p>
---	--

- | | |
|---|-----|
| New Facility | NEW |
| Modification (no increase in capacity or treatment) | MOD |
| Increase in Capacity | INC |
| Increase in Treatment Level | INT |
| Both increase in Treatment Level and Capacity | ICT |
| Process Change | PRO |
| Elimination of Discharge | ELI |

N/A

2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedule (Yr./Mo./Day)		3. Actual Completion (Yr./Mo./Day)	
a. Preliminary plan complete	302a	___/___/___	303a	___/___/___
b. Final plan submission	302b	___/___/___	303b	___/___/___
c. Final plan complete	302c	___/___/___	303c	___/___/___
d. Financing complete & contract awarded	302d	___/___/___	303d	___/___/___
e. Site acquired	302e	___/___/___	303e	___/___/___
f. Begin action (e.g., construction)	302f	___/___/___	303f	___/___/___
g. End action (e.g., construction)	302g	___/___/___	303g	___/___/___
h. Discharge Began	302h	___/___/___	303h	___/___/___
i. Operational level attained	302i	___/___/___	303i	___/___/___

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR AGENCY USE									

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1. Discharge Serial No. and Name		201a	<u>002</u>	
a.	Discharge Serial No. (see instructions)	201b	<u>TMI-2 Emergency Discharge</u>	
b.	Discharge Name Give name of discharge, if any. (see instructions)	201c	<u>002</u>	
c.	Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previ- ous discharge serial number.	2. Discharge Operating Dates		
a.	Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	202a	<u>74 01</u> YR MO	
b.	Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best esti- mate) the discharge will begin.	202b	<u>N/A</u> YR MO	
c.	Discharge to End Date If dis- charge is scheduled to be discon- tinued within the next 5 years, give the date (within best esti- mate) the discharge will end.	202c	<u>N/A</u> YR MO	
3.	Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)	203	<input type="checkbox"/> N/A	
4.	Discharge Location Name the political boundaries within which the point of discharge is located	204a	<u>Pennsylvania</u>	Agency Use 204d
	State	204b	<u>Dauphin</u>	204e
	County	204c	<u>Londonderry Township</u>	204f
	(if applicable) City or Town	5. Discharge Point Description Discharge is into (check one): (see instructions)		
	Stream (includes ditches, arroyos, and other intermittent watercourses)	205a	<input checked="" type="checkbox"/> TR	
	Lake		<input type="checkbox"/> LKE	
	Ocean		<input type="checkbox"/> OCE	
	Municipal Sanitary Wastewater Treatment Works		<input type="checkbox"/> MTS	
	Municipal Combined Sanitary and Storm Drainage System		<input type="checkbox"/> MCS	

DISCHARGE SERIAL NUMBER

FOR AGENCY USE					

Municipal Storm Water Transport System

Well (Injection)

Other

STS

WEL

OTH

If 'Other' is checked, specify

6. Discharge Point - Lat/Long Give the precise location of the point of discharge to the nearest second.

Latitude

Longitude

205b

205a

206b

40 DEG 09 MIN 10 SEC

76 DEG 43 MIN 40 SEC

7. Discharge Receiving Water Name Name the waterway at the point of discharge (see instructions)

207a

Susquehanna River

If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8.

8. Offshore Discharge

a. Discharge Distance from Shore

b. Discharge Depth Below Water Surface

207b

For Agency Use		
Major	Minor	Sub

207c

For Agency Use	
303e	

208a

208b

Approx. 100 feet

N/A feet

Discharge Pipe

Inv. elevation = 289'0"
Pipe size = 48"

9. Discharge Type and Occurrence

a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)

b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.

c. Discharge Occurrence - Months If this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)

209a

209b

209c

(con) Continuous *
 (int) Intermittent

 days per week

JAN FEB MAR APR *
 MAY JUN JUL AUG
 SEP OCT NOV DEC

Complete Items 10 and 11 if "intermittent" is checked in Item 9a. Otherwise, proceed to Item 12.

10. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.

210

 thousand gallons per discharge occurrence. *

11. Intermittent Discharge Duration and Frequency

a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.

b. Intermittent Discharge Frequency State the average number of discharge occurrences per day during days when discharging.

211a

211b

 hours per day *

 discharge occurrences per day *

12. Maximum Flow Period Give the time period in which the maximum

212

From to *
month month

*See Item 26-
Additional Information

FOR AGENCY USE									

13. Activity Description Give a narrative description of activity producing this discharge. (see instructions)

2133 | As described in Section I, Item 9 (facility discharges), Discharge 002 is an emergency discharge which would be used in the event that discharge 001 became inoperable.

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production. (see instructions)

a. Raw Materials N/A

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214a				

b. Products *

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214b				

*See Item 26 - Additional Information

FOR AGENCY USE									

15. Waste Abatement *

a. Waste Abatement Practices
Describe the waste abatement practices used on this discharge with a brief narrative. (See instructions)

215a Narrative: _____

b. Waste Abatement Codes *
Using the codes listed in Table II of the Instruction Booklet, describe the waste abatement processes for this discharge in the order in which they occur if possible.

215b (1) _____, (2) _____, (3) _____,
 (4) _____, (5) _____, (6) _____,
 (7) _____, (8) _____, (9) _____,
 (10) _____, (11) _____, (12) _____,
 (13) _____, (14) _____, (15) _____,
 (16) _____, (17) _____, (18) _____,
 (19) _____, (20) _____, (21) _____,
 (22) _____, (23) _____, (24) _____,
 (25) _____.

* See Item 26 - Additional Information

FOR AGENCY USE.

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16. Wastewater Characteristics *

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (See instructions)

Parameter 216	Present	Parameter 216	Present
Color 0050		Copper 01042	
Ammonia 00610		Iron 01045	
Organic nitrogen 00605		Lead 01051	
Nitrate 00620		Magnesium 00927	
Nitrite 00615		Manganese 01055	
Phosphorus 00665		Mercury 71900	
Sulfate 00945		Molybdenum 01062	
Sulfide 00745		Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940		Potassium 00937	
Cyanide 00720		Sodium 00929	
Fluoride 00951		Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	
Calcium 00916		Phenols 32730	
Cobalt 01037		Surfactants 38260	
Chromium 01034		Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

* See Item 26 - Additional Information

FOR AGENCY USE

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17. Description of Intake and Discharge *

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for. (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16: ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)
Flow* Gallons per day 00056								
pH Units 00400			X					
Temperature (winter) ° F 74028								
Temperature (summer) ° F 74027								
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310								
Chemical Oxygen Demand (COD) mg/l 00340								
Total Suspended (nonfilterable) Solids mg/l 00530								
Specific Conductance micromhos/cm at 25° C 00095			X					
Settleable Matter (residue) ml/l 00545								

*Other discharges sharing intake flow (serial numbers). (see instructions)

*See Item 26 - Additional Information

DISCHARGE SERIAL NUMBER

FOR AGENCY USE									

17. (Cont'd.) *

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)

18. Plant Controls Check if the following plant controls are available for this discharge.

Alternate power source for major pumping facility.

Alarm or emergency procedure for power or equipment failure

Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of Material(s)

b. Name and address of manufacturer

c. Quantity (pounds added per million gallons of water treated).

218

APS

ALM

219a

*

219b

*

219c

*

*See Item 26 - Additional Information

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d. Chemical composition of these additives (see instructions).

219d

Complete items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)

220

Boiler Blowdown

Boiler Chemical Cleaning

Ash Pond Overflow

Boiler Water Treatment — Evaporator Blowdown

Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices

Condense Cooling Water

Cooling Tower Blowdown

Manufacturing Process

Other

 BLBD BCCL APOF EPBD OCFP COND CTBD MFPR OTHR

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

221a

_____ °F. *

Winter

221b

_____ °F. *

22. Discharge Temperature, Rate of Change Per Hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

222

_____ °F./hour *

23. Water Temperature, Percentile Report (Frequency of Occurrence)

In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)

Frequency of occurrence

a. Intake Water Temperature (Subject to natural changes)

223a

	10%	5%	1%	Maximum
a.	°F	°F	°F	°F
b.	°F	°F	°F	°F

N/A

b. Discharge Water Temperature

223b

24. Water Intake Velocity (see instructions)

224

_____ feet/sec. N/A

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

225

_____ minutes N/A

* See Item 26 - Additional Information

FOR AGENCY USE									

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

1. Improvements

- a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.
- b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)
- Locally developed plan
 - Areawide Plan
 - Basic Plan
 - State approved implementation schedule
 - Federal approved water quality standards implementation plan.
 - Federal enforcement procedure or action
 - State court order
 - Federal court order
- c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the Instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.

300

301a

FOR AGENCY USE	
SCHED. NO.	_____

N/A

301b

- LOC
- ARE
- BAS
- SQS
- WQS
- ENF
- CRT
- FED

N/A

301c

3-character (general)

N/A

301d

6-character (specific) (see Table II)

N/A

- | | |
|---|-----|
| New Facility | NEW |
| Modification (no increase in capacity or treatment) | MOD |
| Increase in Capacity | INC |
| Increase in Treatment Level | INT |
| Both increase in Treatment Level and Capacity | ICT |
| Process Change | PRO |
| Elimination of Discharge | ELI |

2. Implementation Schedule and 3. Actual Completion Dates

N/A

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedule (Yr./Mo./Day)		3. Actual Completion (Yr./Mo./Day)	
a. Preliminary plan complete	302a	___/___/___	303a	___/___/___
b. Final plan submission	302b	___/___/___	303b	___/___/___
c. Final plan complete	302c	___/___/___	303c	___/___/___
d. Financing complete & contract awarded	302d	___/___/___	303d	___/___/___
e. Site acquired	302e	___/___/___	303e	___/___/___
f. Begin action (e.g., construction)	302f	___/___/___	303f	___/___/___
g. End action (e.g., construction)	302g	___/___/___	303g	___/___/___
h. Discharge Began	302h	___/___/___	303h	___/___/___
i. Operational level attained	302i	___/___/___	303i	___/___/___

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR AGENCY USE									

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

<p>1. Discharge Serial No. and Name</p> <p>a. Discharge Serial No. (see instructions)</p> <p>b. Discharge Name Give name of discharge, if any. (see instructions)</p> <p>c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.</p>	<p>201a <u>003</u></p> <p>201b <u>TMI-1 Emergency Discharge</u></p> <p>201c <u>003</u></p>	
<p>2. Discharge Operating Dates</p> <p>a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.</p> <p>b. Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best estimate) the discharge will begin.</p> <p>c. Discharge to End Date If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end.</p>	<p>202a <u>74 01</u> <u>YR MO</u></p> <p>202b <u>N/A</u> <u>YR MO</u></p> <p>202c <u>N/A</u> <u>YR MO</u></p>	
<p>3. Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)</p>	<p>203 <input type="checkbox"/> <u>N/A</u></p>	
<p>4. Discharge Location Name the political boundaries within which the point of discharge is located.</p> <p>State</p> <p>County</p> <p>(if applicable) City or Town</p>	<p>204a <u>Pennsylvania</u></p> <p>204b <u>Dauphin</u></p> <p>204c <u>Londonderry Township</u></p>	<p style="text-align: right;"><u>Agency Use</u></p> <p>204d _____</p> <p>204e _____</p> <p>204f _____</p>
<p>5. Discharge Point Description Discharge is into (check one): (see instructions)</p> <p>Stream (includes ditches, arroyos, and other intermittent watercourses)</p> <p>Lake</p> <p>Ocean</p> <p>Municipal Sewerage Wastewater Treatment System</p> <p>Municipal Combined Sanitary and Storm Transport System</p>	<p>205a <input checked="" type="checkbox"/> STR</p> <p><input type="checkbox"/> LKE</p> <p><input type="checkbox"/> OCF</p> <p><input type="checkbox"/> MTS</p> <p><input type="checkbox"/> MCS</p>	

DISCHARGE SERIAL NUMBER

FOR AGENCY USE									

Municipal Storm Water Transport System

Well (Flow Line)

Other

If "Other" is checked, specify

STS

Well

Other

6. Discharge Point - Lat/Long Give the precise location of the point of discharge to the nearest second.

Latitude

Longitude

205b

205a 40 DEG 09 MIN 10 SEC

205b 76 DEG 43 MIN 40 SEC

7. Discharge Receiving Water Name Name the waterway at the point of discharge (see instructions)

207a

Susquehanna River

If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8.

8. Offshore Discharge

a. Discharge Distance from Shore

b. Discharge Depth Below Water Surface

207b

Approx. 90 feet

208b

0 feet

Discharge Pipe

Inv. elevation = 289'0"

Pipe size = 48"

For Agency Use		
Major	Minor	Sub

207c

For Agency Use
303e

9. Discharge Type and Occurrence

a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)

b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.

c. Discharge Occurrence - Months if this discharge normally operates (either intermittently, or continuously) on less than a year around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)

209a

(con) Continuous *

(int) Intermittent

209b

___ days per week *

209c

JAN FEB MAR APR

MAY JUN JUL AUG *

SEP OCT NOV DEC

Complete Items 10 and 11 if "intermittent" is checked in Item 9.a. Otherwise, proceed to Item 12.

10. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.

210

_____ thousand gallons per discharge occurrence. *

11. Intermittent Discharge Duration and Frequency

a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.

b. Intermittent Discharge Frequency State the average number of discharge occurrences per day during the discharge period.

211a

___ hours per day *

211b

___ discharge occurrences per day *

12. Maximum Flow Period Give the time period in which the maximum

212

From ___ to ___ *

*See Item 26 - Additional Information

FOR AGENCY USE									

13. Activity Description Give a narrative description of activity producing this discharge (see instructions)

213a

As described in Section I, Item 9 (facility discharges), Discharge 003 is an emergency discharge which would be used in the event discharge 001 became inoperable.

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production. (see instructions)

a. Raw Materials N/A

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214a				

b. Products *

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214b				

* See Item 26, - Additional Information

FOR AGENCY USE									

15. Waste Abatement *

a. Waste Abatement Practices
Describe the waste abatement practices used on this discharge with a brief narrative. (see instructions)

215a

Narrative: _____

b. Waste Abatement Codes *
Using the codes listed in Table II of the Instruction Booklet, describe the waste abatement processes for this discharge in the order in which they occur if possible.

215b

(1) _____, (2) _____, (3) _____,

(4) _____, (5) _____, (6) _____,

(7) _____, (8) _____, (9) _____,

(10) _____, (11) _____, (12) _____,

(13) _____, (14) _____, (15) _____,

(16) _____, (17) _____, (18) _____,

(19) _____, (20) _____, (21) _____,

(22) _____, (23) _____, (24) _____,

(25) _____.

*See Item 26 - Additional Information

FOR AGENCY USE									

16. Wastewater Characteristics *

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate (see instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080		Copper 01042	
Ammonia 00610		Iron 01045	
Organic nitrogen 00605		Lead 01051	
Nitrate 00620		Magnesium 00927	
Nitrite 00615		Manganese 01055	
Phosphorus 00665		Mercury 71900	
Sulfate 00945		Molybdenum 01062	
Sulfide 00745		Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940		Potassium 00937	
Cyanide 00720		Sodium 00929	
Fluoride 00951		Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	
Calcium 00916		Phenols 32730	
Cobalt 01037		Surfactants 38260	
Chromium 01034		Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

* See Item 26 - Additional Information

FOR AGENCY USE									

17. Description of Intake and Discharge *

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for. (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16: ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average)	In-Plant Treated Intake Water (Daily Average)	Daily Average	Minimum Value Observed or Expected During Discharge Activity	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of Analyses	Sample Type
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Flow* Gallons per day 00056								
pH Units 00400			X					
Temperature (winter) ° F 74028								
Temperature (summer) ° F 74077								
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310								
Chemical Oxygen Demand (COD) mg/l 00340								
Total Suspended (nonfilterable) Solids mg/l 00530								
Specific Conductance micromhos/cm at 25° C 00095			X					
Settleable Matter (residue) ml/l 00545								

*Other discharges sharing intake flow (serial numbers): (see instructions)

*See Item 26 - Additional Information

DISCHARGE SERIAL NUMBER

FOR AGENCY USE					

17. (Cont'd.)

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)

18. Plant Controls Check if the following plant controls are available for this discharge.

Alternate power source for major pumping facility.

Alarm or emergency procedure for power or equipment failure

Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of Material(s)

b. Name and address of manufacturer

c. Quantity (pounds added per million gallons of water treated).

218

APS

ALM

219a

*

219b

*

219c

*

*See Item 26 - Additional Information

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d. Chemical composition of these additives (see instructions).

219d

*

Complete items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)

220

- Boiler Blowdown
- Boiler Chemical Cleaning
- Ash Pond Overflow
- Boiler Water Treatment — Evaporator Blowdown
- Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices
- Condense Cooling Water
- Cooling Tower Blowdown
- Manufacturing Process
- Other

- BLBD
- BCCL
- APOF
- EPBD
- OCFP
- COND
- CTBD
- MFPR
- OTHR

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

221a

_____ °F. *

Winter

221b

_____ °F. *

22. Discharge Temperature, Rate of Change Per Hour

222

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

_____ °F./hour *

23. Water Temperature, Percentile Report (Frequency of Occurrence)
In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)
Frequency of occurrence

223a

a. Intake Water Temperature (Subject to natural changes)

223b

b. Discharge Water Temperature

10%	5%	1%	Maximum
_____ °F	_____ °F	_____ °F	_____ °F
_____ °F	_____ °F	_____ °F	_____ °F

#

24. Water Intake Velocity (see instructions)

224

_____ feet/sec.

N/A

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

225

_____ minutes

N/A

*See Item 26 - Additional Information

FOR AGENCY USE									

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

1. Improvements

a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.

300

301a

FOR AGENCY USE	
SCHED. NO.	_____

N/A

b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)

301b

- Locally developed plan
- Areawide Plan
- Basic Plan
- State approved implementation schedule
- Federal approved water quality standards implementation plan.
- Federal enforcement procedure or action
- State court order
- Federal court order

- LOC
- ARE
- BAS
- SQS
- WQS
- ENF
- CRT
- FED

N/A

c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.

301c

3-character (general)

N/A

301d

6-character (specific) (see Table II)

N/A

- | | |
|---|-----|
| New Facility | NEW |
| Modification (no increase in capacity or treatment) | MOD |
| Increase in Capacity | INC |
| Increase in Treatment Level | INT |
| Both increase in Treatment Level and Capacity | ICT |
| Process Change | PRO |
| Elimination of Discharge | ELI |

FOR AGENCY USE

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2. Implementation Schedule and 3. Actual Completion Dates . . . N/A

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedule (Yr./Mo./Day)	3. Actual Completion (Yr./Mo./Day)
a. Preliminary plan complete	302a ___/___/___	303a ___/___/___
b. Final plan submission	302b ___/___/___	303b ___/___/___
c. Final plan complete	302c ___/___/___	303c ___/___/___
d. Financing complete & contract awarded	302d ___/___/___	303d ___/___/___
e. Site acquired	302e ___/___/___	303e ___/___/___
f. Begin action (e.g., construction)	302f ___/___/___	303f ___/___/___
g. End action (e.g., construction)	302g ___/___/___	303g ___/___/___
h. Discharge Began	302h ___/___/___	303h ___/___/___
i. Operational level attained	302i ___/___/___	303i ___/___/___

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR AGENCY USE					

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1. Discharge Serial No. and Name

a. Discharge Serial No.
(see instructions)

201a 004

b. Discharge Name
Give name of discharge, if any.
(see instructions)

201b TMI -1 Emergency Discharge

c. Previous Discharge Serial No.
If previous permit application
was made for this discharge (see
Item 4, Section I), provide previ-
ous discharge serial number.

201c 004

2. Discharge Operating Dates

a. Discharge Began Date If the
discharge described below is in
operation, give the date (within
best estimate) the discharge
began.

202a 74 01
YR MO

b. Discharge to Begin Date If the
discharge has never occurred but
is planned for some future date,
give the date (within best esti-
mate) the discharge will begin.

202b N/A
YR MO

c. Discharge to End Date If dis-
charge is scheduled to be discon-
tinued within the next 5 years,
give the date (within best esti-
mate) the discharge will end.

202c N/A
YR MO

3. Engineering Report Available
Check if an engineering report is
available to receiving agency upon
request. (see instructions)

203 N/A

4. Discharge Location Name the
political boundaries within which
the point of discharge is located.

State

204a Pennsylvania 204d _____

County

204b Dauphin 204e _____

(if applicable) City or Town

204c Londonderry Township 204f _____

Agency Use

5. Discharge Point Description
Discharge is into (check one):
(see instructions)

Stream (includes ditches, arroyos,
and other intermittent watercourses)

205a STR

Lake

LKE

Ocean

OCE

Municipal Sewerage Wastewater
Treatment System

MFS

Municipal Combined Sewerage and
Sanitary System

MCS

DISCHARGE SERIAL NUMBER

FOR AGENCY USE					

Municipal Storm Water Transport System

Well (Injection)

Other

If "Other" is checked, specify

STS

WEL

OTH

5. Discharge Point - Lat/Long Give the precise location of the point of discharge to the nearest second.

Latitude

Longitude

205b

205a 40 DEG 09 MIN 10 SEC

205b 76 DEG 43 MIN 20 SEC

7. Discharge Receiving Water Name Name the waterway at the point of discharge. (see instructions)

207a

Susquehanna River

If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8.

8. Offshore Discharge

a. Discharge Distance from Shore

b. Discharge Depth Below Water Surface

207b

For Agency Use		
Major	Minor	Sub

207c

For Agency Use
<u>302e</u>

9. Discharge Type and Occurrence

a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)

b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.

c. Discharge Occurrence - Months If this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)

208a

Approx. 10 feet

208b

N/A feet

Discharge Pipe

Inv. elevation = 280'10"
Pipe size = 48"

209a

(con) Continuous *
 (int) Intermittent

209b

 days per week *

209c

JAN FEB MAR APR
 MAY JUN JUL AUG *
 SEP OCT NOV DEC

Complete Items 10 and 11 if "intermittent" is checked in Item 9.a. Otherwise, proceed to Item 12.

10. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.

210

 thousand gallons per discharge occurrence. *

11. Intermittent Discharge Duration and Frequency

a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.

b. Intermittent Discharge Frequency State the average number of discharge occurrences per day during days when discharging.

211a

 hours per day *

211b

 discharge occurrences per day *

12. Maximum Flow Period Give the time period in which the maximum

212

From to
month month

*See Item 26 - Additional Information.

FOR AGENCY USE									

13. Activity Description Give a narrative description of activity producing this discharge. (see instructions)

213a

004 is an emergency discharge. Discharge 004 would be used in the event that the Unit I MDET becomes blocked and can not be used.

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production. (see instructions)

a. Raw Materials *

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214a				

b. Products *

SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214b				

*See Item 26 - Additional Information

FOR AGENCY USE									

15. Waste Abatement *

a. Waste Abatement Practices
Describe the waste abatement practices used on this discharge with a brief narrative. (see instructions)

215a

Narrative: _____

b. Waste Abatement Codes *
Using the codes listed in Table II of the Instruction Booklet, describe the waste abatement processes for this discharge in the order in which they occur if possible.

215b

- (1) _____ , (2) _____ , (3) _____ ,
- (4) _____ , (5) _____ , (6) _____ ,
- (7) _____ , (8) _____ , (9) _____ ,
- (10) _____ , (11) _____ , (12) _____ ,
- (13) _____ , (14) _____ , (15) _____ ,
- (16) _____ , (17) _____ , (18) _____ ,
- (19) _____ , (20) _____ , (21) _____ ,
- (22) _____ , (23) _____ , (24) _____ ,
- (25) _____ .

*See Item 26 - Additional Information

FOR AGENCY USE

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16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate (see instructions)

Parameter 216	Present	Parameter 216	Present
Color 00380		Copper 01042	
Ammonia 00610		Iron 01045	
Organic nitrogen 00605		Lead 01051	
Nitrate 00620		Magnesium 00927	
Nitrite 00615		Manganese 01055	
Phosphorus 00665		Mercury 71900	
Sulfate 00945		Molybdenum 01062	
Sulfide 00745		Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940		Potassium 00937	
Cyanide 00720		Sodium 00929	
Fluoride 00951		Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	
Calcium 00916		Phenols 32730	
Cobalt 01037		Surfactants 38260	
Chromium 01034		Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Sub-section 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

*See Item 26 -- Additional Information

FOR AGENCY USE

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17. Description of Intake and Discharge *

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for. (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16: ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)
Flow* Gallons per day 00056								
pH Units 00400			X					
Temperature (winter) ° F 74028								
Temperature (summer) ° F 74027								
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310								
Chemical Oxygen Demand (COD) mg/l 00340								
Total Suspended (nonfilterable) Solids mg/l 00530								
Specific Conductance micromhos/cm at 25° C 00095			X					
Settleable Matter (residue) ml/l 00545								

*Other discharges sharing intake flow (serial numbers). (see instructions)

* See Item 26

FOR AGENCY USE

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17. (Cont'd.)

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)

18. Plant Controls Check if the following plant controls are available for this discharge.

Alternate power source for major pumping facility.

Alarm or emergency procedure for power or equipment failure

Complete Item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of Material(s)

b. Name and address of manufacturer

c. Quantity (pounds added per million gallons of water treated).

218

APS

ALM

219a

*

219b

*

219c

*

* See Item 26 - Additional Information

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d. Chemical composition of these additives (see instructions).

219d

Complete Items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)

- Boiler Blowdown
- Boiler Chemical Cleaning
- Ash Pond Overflow
- Boiler Water Treatment — Evaporator Blowdown
- Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices
- Condense Cooling Water
- Cooling Tower Blowdown
- Manufacturing Process
- Other

220

- BLBD
- BCCL
- APOF
- EPBD
- OCFP
- COND
- CTBD
- MFPR
- OTHR *

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

221a

_____ °F. *

Winter

221b

_____ °F.

22. Discharge Temperature, Rate of Change Per Hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

222

_____ °F./hour

23. Water Temperature, Percentile Report (Frequency of Occurrence)

In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)

Frequency of occurrence

- a. Intake Water Temperature (Subject to natural changes)
- b. Discharge Water Temperature

223a

223b

	10%	5%	1%	Maximum
a. Intake Water Temperature	_____ °F	_____ °F	_____ °F	_____ °F
b. Discharge Water Temperature	_____ °F	_____ °F	_____ °F	_____ °F

*

24. Water Intake Velocity (see instructions)

224

_____ feet/sec. N/A

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

225

_____ minutes N/A

*See Item 26 - Additional Information

DISCHARGE SERIAL NUMBER

FOR AGENCY USE									

26. Additional Information

229 Item	Information
9,10,11,12	Under normal operating conditions, discharge 004 will not be used. Discharge 004 is only used under emergency conditions.
14,15,16,17, 19	In the remote event of a discharge from outfall 004, the characteristics of the effluent are the same as that which has been detailed for discharge 001.
20, 21,22,23	In the remote event that the Unit 1 MDCT becomes blocked and cannot be used, the discharge would then go out outfall 004 and would not receive the additional cooling which would normally be provided by the MDCT. Therefore, the discharge temperature can be expected to be higher than which would normally occur.

FOR AGENCY USE									

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

1. Improvements

a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.

b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)

Locally developed plan

Areawide Plan

Basic Plan

State approved implementation schedule

Federal approved water quality standards implementation plan.

Federal enforcement procedure or action

State court order

Federal court order

c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.

300		
301a	_____	

301b	<input type="checkbox"/> LOC	
	<input type="checkbox"/> ARE	
	<input type="checkbox"/> BAS	
	<input type="checkbox"/> SQS	
	<input type="checkbox"/> WQS	
	<input type="checkbox"/> ENF	
	<input type="checkbox"/> CRT	
	<input type="checkbox"/> FED	
301c	3-character (general) _____	
301d	6-character (specific) (see Table II) _____ _____ _____	

FOR AGENCY USE	
SCHED. NO.	_____

N/A

N/A

N/A

N/A

- | | |
|---|-----|
| New Facility | NEW |
| Modification (no increase in capacity or treatment) | MOD |
| Increase in Capacity | INC |
| Increase in Treatment Level | INT |
| Both increase in Treatment Level and Capacity | ICT |
| Process Change | PRO |
| Elimination of Discharge | ELI |

FOR AGENCY USE

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N/A

2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedule (Yr./Mo./Day)		3. Actual Completion (Yr./Mo./Day)	
a. Preliminary plan complete	302a	___/___/___	303a	___/___/___
b. Final plan submission	302b	___/___/___	303b	___/___/___
c. Final plan complete	302c	___/___/___	303c	___/___/___
d. Financing complete & contract awarded	302d	___/___/___	303d	___/___/___
e. Site acquired	302e	___/___/___	303e	___/___/___
f. Begin action (e.g., construction)	302f	___/___/___	303f	___/___/___
g. End action (e.g., construction)	302g	___/___/___	303g	___/___/___
h. Discharge Began	302h	___/___/___	303h	___/___/___
i. Operational level attained	302i	___/___/___	303i	___/___/___

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR AGENCY USE									

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item II, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1. Discharge Serial No. and Name				
a. Discharge Serial No. (see instructions)	201a	<u>005</u>		
b. Discharge Name Give name of discharge, if any. (see instructions)	201b	<u>N/A</u>		
c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.	201c	<u>N/A</u>		
2. Discharge Operating Dates				
a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	202a	<u>73 01</u> YR MO		
b. Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best estimate) the discharge will begin.	202b	<u>N/A</u> YR MO		
c. Discharge to End Date If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end.	202c	<u>N/A</u> YR MO		
3. Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)	203	<input type="checkbox"/> N/A		
4. Discharge Location Name the political boundaries within which the point of discharge is located.				Agency Use
State	204a	<u>Pennsylvania</u>	204d	_____
County	204b	<u>Dauphin</u>	204e	_____
(if applicable) City or Town	204c	<u>Londonderry Township</u>	204f	_____
5. Discharge Point Description (Discharge is into (check one): (see instructions)				
Stream (includes ditches, arroyos, and other intermittent watercourses)	205a	<input checked="" type="checkbox"/> STR		
Lake		<input type="checkbox"/> LKE		
Ocean		<input type="checkbox"/> OCE		
Municipal Sanitary Wastewater Treatment Plant		<input type="checkbox"/> MTS		
Municipal Sewer-based Sanitary and Storm Drainage System		<input type="checkbox"/> MDS		

DISCHARGE SERIAL NUMBER

FOR AGENCY USE									

Municipal Storm Water Transport System

Well (direction)

Other

If "other" is checked, specify

STS

WEL

OTH

6. Discharge Point - Lat/Long Give the precise location of the point of discharge to the nearest second.

Latitude

Longitude

205b

206a

206b

207a

40 DEG 09 MIN 10 SEC

76 DEG 43 MIN 35 SEC

Susquehanna River

If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8

8. Offshore Discharge

a. Discharge Distance from Shore

b. Discharge Depth Below Water Surface

207b

208a

208b

Approx. 40 feet

N/A feet

For Agency Use

For Agency Use		
Major	Minor	Sub

207c

For Agency Use
<u>303e</u>

Discharge Pipe

Inv. elevation = 281'05"
Pipe size = 60"

9. Discharge Type and Occurrence

a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)

b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.

c. Discharge Occurrence - Months If this discharge normally operates (either intermittently, or continuously) on less than a year-round basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)

209a

209b

209c

(con) Continuous

(int) Intermittent

 days per week *

JAN FEB MAR APR

MAY JUN JUL AUG *

SEP OCT NOV DEC

Complete Items 10 and 11 if "Intermittent" is checked in Item 9.a. Otherwise, proceed to Item 12.

10. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.

210

 * thousand gallons per discharge occurrence.

11. Intermittent Discharge Duration and Frequency

a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.

b. Intermittent Discharge Frequency State the average number of discharge occurrences per day.

211a

211b

 * hours per day

 * discharge occurrences per day

* Intermittent flow dependent on rainfall and scheduling of cooling tower cleaning operations.

12. Maximum Flow Period Give the

212

From to *

FOR AGENCY USE									

13. Activity Description Give a narrative description of activity producing this discharge. (see instructions)

213a Construction runoff associated with TMI Unit 2, rainfall runoff from the TMI site and the cooling tower cleaning operations are the major activities which comprise this discharge.

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table 1 of the Instruction Booklet. For SIC Codes not listed in Table 1, use raw material or production units normally used for measuring production. (see instructions)

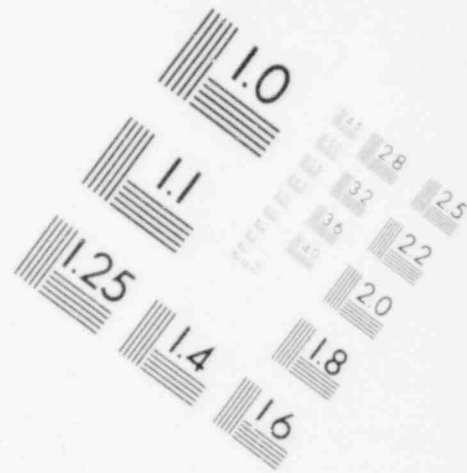
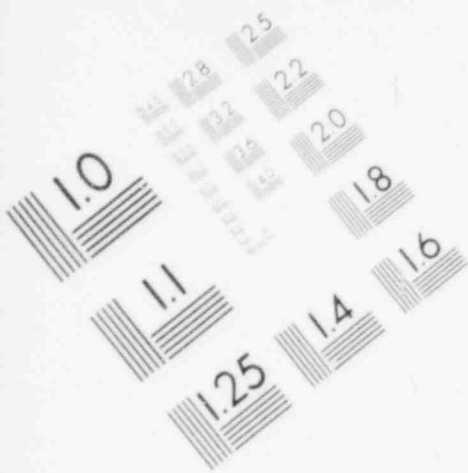
N/A

a. Raw Materials N/A

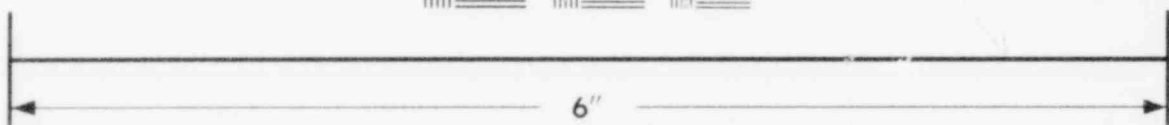
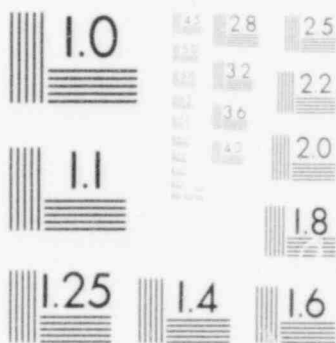
SIC Code	Name	Maximum Amount/Day	Unit (See Table 1)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214a				

b. Products

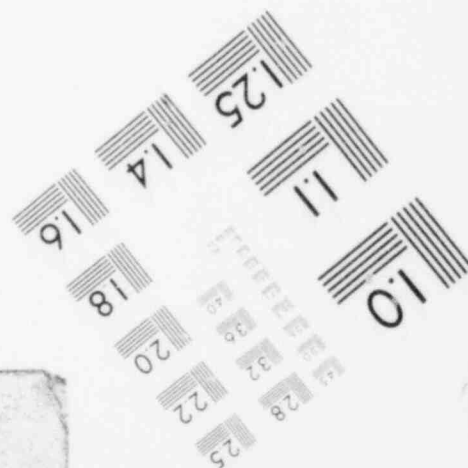
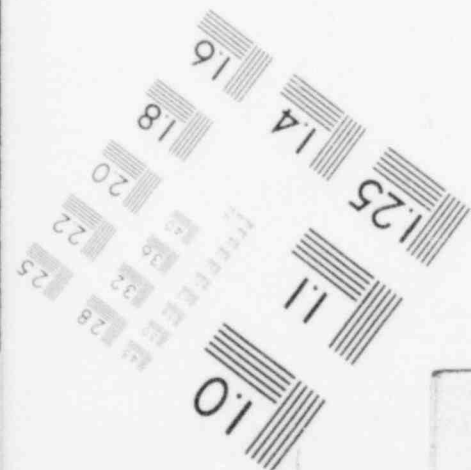
SIC Code	Name	Maximum Amount/Day	Unit (See Table 1)	Shared Discharges (Serial Number)
(1)	(2)	(3)	(4)	(5)
214b				
4911	Electric Services	1.706	Z-1	N/A



**IMAGE EVALUATION
TEST TARGET (MT-3)**



MICROCOPY RESOLUTION TEST CHART



FOR AGENCY USE									

15. Waste Abatement

a. Waste Abatement Practices
Describe the waste abatement practices used on this discharge with a brief narrative. (see instructions)

215a

Narrative: All flows which are directed to this
discharge are first collected and
channelled to the sedimentation basin.
Following sedimentation, the flow is discharged
to the Susquehanna River

b. Waste Abatement Codes
Using the codes listed in Table II of the Instruction Booklet, describe the waste abatement processes for this discharge in the order in which they occur if possible.

215b

- (1) PSDIM , (2) _____ , (3) _____
- (4) _____ , (5) _____ , (6) _____
- (7) _____ , (8) _____ , (9) _____
- (10) _____ , (11) _____ , (12) _____
- (13) _____ , (14) _____ , (15) _____
- (16) _____ , (17) _____ , (18) _____
- (19) _____ , (20) _____ , (21) _____
- (22) _____ , (23) _____ , (24) _____
- (25) _____

FOR AGENCY USE

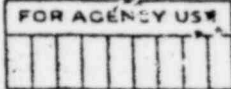
16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (See instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080		Copper 01042	
Ammonia 00610		Iron 01045	
Organic nitrogen 00603		Lead 01051	
Nitrate 00620		Magnesium 00927	
Nitrite 00615		Manganese 01055	
Phosphorus 00665		Mercury 71900	
Sulfate 00945		Molybdenum 01062	
Sulfide 00745		Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71370		Silver 01077	
Chloride 00940		Potassium 00937	
Cyanide 00720		Sodium 00929	
Fluoride 00951		Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	
Calcium 00916		Phenols 32730	
Cobalt 01037		Surfactants 38260	
Chromium 01034		Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C., 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.



17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for. (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 15; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)
Flow * Gallons per day 00056	*	*	*	*	*	*	*	*
pH Units 00400			X					
Temperature (winter) * F 74028	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Temperature (summer) * F 74027	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chemical Oxygen Demand (COD) mg/l 00340	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Suspended (non filterable) Solids mg/l 00530								
Specific Conductance microhos/cm at 25° C 00095	N/A	N/A	X	N/A	N/A	N/A	N/A	N/A
Settleable Matter (residue) ml/l 00545	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Other discharges sharing intake flow (serial numbers) (see instructions)

*See Item 26 - Additional Information

FOR AGENCY USE									

17. (Cont'd.)

Parameter and Code 217a	Influent		Effluent					
	Untreated Intake Water (Daily Average) (1)	In-Plant Treated Intake Water (Daily Average) (2)	Daily Average (3)	Minimum Value Observed or Expected During Discharge Activity (4)	Maximum Value Observed or Expected During Discharge Activity (5)	Frequency of Analysis (6)	Number of Analyses (7)	Sample Type (8)

18. Plant Controls Check if the following plant controls are available for this discharge.

Alternate power source for major pumping facility.

Alarm or emergency procedure for power or equipment failure

Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of material(s)

b. Name and address of manufacturer

c. Quantity (pounds added per million gallons of water treated).

218

APS N/A

ALM N/A

219a

N/A

219b

N/A

219c

N/A

FOR AGENCY USE									

d. Chemical composition of these additives (see instructions).

219d

N/A

Complete items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)
- Boiler Blowdown
 - Boiler Chemical Cleaning
 - Ash Pond Overflow
 - Boiler Water Treatment — Evaporator Blowdown
 - Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices
 - Condense Cooling Water
 - Cooling Tower Blowdown
 - Manufacturing Process
 - Other

220

- BLBD
- BCCL
- APOF N/A
- EPBD
- OCFP
- COND
- CTBO
- MFPR
- OTHR

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

221a

____ °F. N/A

Winter

221b

____ °F. N/A

22. Discharge Temperature, Rate of Change Per Hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

222

____ °F./hour N/A

23. Water Temperature, Percentile Report (Frequency of Occurrence)

In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)

Frequency of occurrence

a. Intake Water Temperature (Subject to natural changes)

223a

b. Discharge Water Temperature

223b

10%	5%	1%	Maximum
____ °F	____ °F	____ °F	____ °F
____ °F	____ °F	____ °F	____ °F

N/A

24. Water Intake Velocity (see instructions)

224

____ fct/sec. N/A

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

225

____ minutes N/A

FOR AGENCY USE									

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

1. Improvements

a. Discharge Serial Number
Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.

b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)

- Locally developed plan
- Areawide Plan
- Basic Plan
- State approved implementation schedule
- Federal approved water quality standards implementation plan.
- Federal enforcement procedure or action
- State court order
- Federal court order

c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the Instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.

300		
301a	_____	

301b	<input type="checkbox"/> LOC <input type="checkbox"/> ARE <input type="checkbox"/> BAS <input type="checkbox"/> SQS <input type="checkbox"/> WQS <input type="checkbox"/> ENF <input type="checkbox"/> CRT <input type="checkbox"/> FED	N/A
301c	3-character (general) _____	N/A
301d	6-character (specific) (see Table II) _____ _____ _____	

FOR AGENCY USE	
SCHED. NO.	_____

N/A

N/A

N/A

- | | |
|---|-----|
| New Facility | NEW |
| Modification (no increase in capacity or treatment) | MOD |
| Increase in Capacity | INC |
| Increase in Treatment Level | INT |
| Both increase in Treatment Level and Capacity | ICT |
| Process Change | PRO |
| Elimination of Discharge | ELI |

FOR AGENCY USE

--	--	--	--	--	--	--	--	--	--

2. Implementation Schedule and # 3. Actual Completion Dates N/A

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedule (Yr./Mo./Day)		3. Actual Completion (Yr./Mo./Day)	
a. Preliminary plan complete	302a	___/___/___	303a	___/___/___
b. Final plan submission	302b	___/___/___	303b	___/___/___
c. Final plan complete	302c	___/___/___	303c	___/___/___
d. Financing complete & contract awarded	302d	___/___/___	303d	___/___/___
e. Site acquired	302e	___/___/___	303e	___/___/___
f. Begin action (e.g., construction)	302f	___/___/___	303f	___/___/___
g. End action (e.g., construction)	302g	___/___/___	303g	___/___/___
h. Discharge Began	302h	___/___/___	303h	___/___/___
i. Operational level attained	302i	___/___/___	303i	___/___/___

RECEIVED COMMONWEALTH OF PENNSYLVANIA

02. 0016. 0003. 0050. 01
61. 1415. 0000

1979 JUN -5 PM 2:33

1979 JUN -5 PM 2:33

MET-ED CO.
GENERATION
DIVISION.

DEPARTMENT OF ENVIRONMENTAL RESOURCES

MET-ED CO. POST OFFICE BOX 2063
HARRISBURG, PENNSYLVANIA 17120
GENERATION
DIVISION.



Copies to

June 4, 1979

3cc OST
1cc TCH
1cc Chromo
1cc L
1cc ROK
1cc v. P. Miller
1cc

Mr. Eric Nielsen
Metropolitan Edison Company
P. O. Box 542
Reading, Pennsylvania 19603

Dear Mr. Nielsen:

We have considered your proposal to discharge water from the cooling towers serving Unit 1. We understand that the purpose of this discharge is to drain the water from the cooling towers so that they can be cleaned. The plan for discharging such water is set forth in a letter by Mr. Troffer to the Department on December 28, 1978, supplemented by a letter from Mr. Troffer on May 15, 1979.

The proposal is hereby approved, subject to the following conditions:

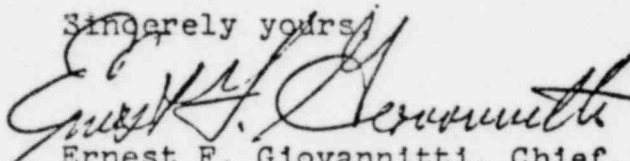
1. Before discharging any water from the cooling towers, you are to analyze the water in the cooling towers for gross Alpha, gross Beta, and Tritium. Should any of these materials appear in the analysis above the minimum detectable limits, you are to notify me immediately.
2. You are to notify James Flesher, Chief, Operations Section, in our Harrisburg Regional Office, at least one day prior to the dewatering operation.
3. Monitoring of the discharge shall consist of one sample collected two to three hours after the start of the discharge and again after 75% of the water has been discharged. The sample should be analyzed for chlorine, residual and total suspended solids.
4. Monitoring of the discharge from the desilting basin on the east side of the Island shall consist of a daily sample and be analyzed for pH, total suspended solids, and iron.

June 4, 1979

5. Results of the analysis of all the monitoring should be submitted to Mr. James Flesher no later than two weeks after completion of the cleaning operation. Initially, Mr. Flesher shall be notified immediately by telephone if the pH is ever less than 6 or greater than 9, the suspended solids exceed 100 mg/l, or if the total iron exceeds 7 mg/l.
6. You are also to notify Mr. Flesher immediately on completion of the cleaning operation.

If you have any questions concerning these conditions, please call James Flesher.

Sincerely yours,



Ernest F. Giovannitti, Chief
Division of Non-Point
and Industrial Sources

#6

Dr. 0016, 0003, 0050-01
Dr. 0019, 0008, 0014, 04

COMMONWEALTH OF PENNSYLVANIA



RECEIVED

DEPARTMENT OF ENVIRONMENTAL RESOURCES

407 South Cameron Street
Harrisburg, Pennsylvania 17101
(717) 787-9635
January 29, 1979

Industrial Waste
Metropolitan Edison
Londonderry Township
Dauphin County

Eric S. Nielsen
Metropolitan Edison Company
P.O. Box 542
Reading, PA 19603

Copies to
300 - HAT
100 - GPH
100 - L.S.
100 - R.M.K.
100 - E.S.A.
100 - J.P. Miller
100 - *Chen*
orig - file

RE: Three Mile Island Nuclear Station (TMI)

Dear Mr. Nielsen:

As we have discussed, we have completed the review of your request to discharge water from the natural draft cooling towers serving unit #1 during the refueling outage. This would consist of discharging 12 million gallons of water in the cooling tower basins directly to the river through outfall 001 and of approximately 1 million gallons which would remain in the tower basins, plus water used to flush any accumulated solids in the cooling tower basins during the cleaning operation. All of this flow will be treated through the desilting basin in the east dam area and discharged at that point.

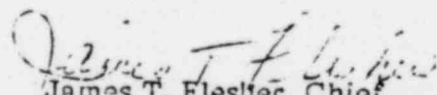
This is to notify you that this scheme, as described in Mr. Troffer's letter of December 28, 1978, is approved provided that the following conditions are met:

1. You are notify this office at least 1 day prior to the start up of the dewatering operaiton.
2. Monitoring of the 12 million gallons of water discharged through outfall 001 should consist of one sample collected two to three hours after the start of discharge, and again after approximately 75% of the water has been discharged, and analyzed for chlorine residual and total suspended solids. This sample should be collected prior to mixing with other wastewater from outfall 001. In addition to the above monitoring, a sample should be collected of the combined discharges at outfall 001 at about the same time the sample at the 75% mark is collected on the cooling water discharge. This sample should also be analyzed for chlorine residual and total suspended solids.

3. Monitoring of the discharge from the desilting basin at the east dam should consist of a daily sample collected at the discharge side of the effluent weir and analyzed for pH, total suspended solids, and total iron.
4. Results of the analyses of all the above listed monitoring should be submitted to this office no later than two weeks after the completion of the cleaning operation. Additionally, we should be notified immediately by telephone if the pH is outside the limit of 8 to 9, suspended solids exceed 100 mg/l, or if total iron exceeds 7.0 mg/l for the discharge from the desilting basin in the east dam area.
5. You are to notify this office upon completion of the cleaning operation.

If the above conditions are met, we believe that the water quality of the river will be protected during this operation. If you have any questions concerning these conditions, please call me.

Very truly yours,


James T. Flesher, Chief
Operations Section
Harrisburg Regional Office

JTF:kew

9
02.0016.0003.0030.01
63.0030.0021.0007
COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES
Room 1002 Health & Welfare Building
Harrisburg, Pennsylvania 17120
(717) 787-9665
February 22, 1978

Copies to

3cc GJT
1cc JGH
1cc Chrono
Orig Hold File CPT
1cc L3 Has
1cc RMK
1cc GPMiller org
1cc Subject

Industrial Waste
Londonderry Township
Dauphin County

J. G. Herbein, Vice President
Generation
Metropolitan Edison Company
2800 Pottsville Pike
Reading, Pennsylvania 19603

SUBJECT: Industrial Waste Permit No. 2277206

Gentlemen:

Water Quality Permit No. 2277206 is enclosed. This permit covers thermal effluent criteria for the mechanical draft cooling towers' discharge. The thermal effluent criteria supersedes the thermal conditions in permit No. 2270204; however, other conditions and terms in Permit No. 2270204 remain effective.

Special Conditions B and C in Permit No. 2277206 refer to a chlorine residual limit and to submission of a report six months after Units 1 and 2 are in operation. The report to be submitted shall contain documentation to support cooling water flow-through times for the anticipated minimum, maximum and average discharge volumes at discharge point 001 and documentation of total residual chlorine concentrations at discharge point 001 for periods when chlorination is not occurring. At least three 24-hour surveys for maximum, minimum and average discharge volumes should be conducted, and each survey should consist of total residual chlorine measurements at intervals to be agreed upon at a later date.

Very truly yours,

Terry R. Fabian
Regional Water Quality Manager
Harrisburg Regional Office

TRF:kew
Enclosure
cc: Gerald L. Master, P.E.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

NO. 2277206

WATER QUALITY MANAGEMENT PERMIT

<p>A. PERMITTEE: (Name and Address)</p> <p>Metropolitan Edison Company 2800 Pottsville Pike Reading, Pennsylvania 19603</p>	<p>B. PROJECT LOCATION</p> <p>Municipality <u>Londonderry Township</u></p> <p>County <u>Dauphin</u></p>
<p>C. TYPE OF FACILITY (For industrial wastes, type of establishment)</p> <p>Nuclear Electric Power Generation</p>	<p>D. NAME OF MINE, PLANT, AREA SERVED, OUTFALL NO., ETC.</p> <p>Three Mile Island - Units 1 and 2; Outfall 001</p>

E. THIS PERMIT APPROVES:

<p>1. Plans For Construction Of:</p> <p>a. <input type="checkbox"/> Pump Stations; Sewers and Appurtenances</p> <p>b. <input type="checkbox"/> Sewage Treatment Facilities</p> <p>c. <input type="checkbox"/> Industrial Wastes Treatment Facilities</p> <p>d. <input type="checkbox"/> Mine Drainage Treatment Facilities</p> <p>e. <input type="checkbox"/> Outfall & Headwall</p> <p>f. <input type="checkbox"/> Stream Crossing</p> <p>g. <input type="checkbox"/> Impoundment</p>	<p>2. The Discharge Of:</p> <p>a. <input checked="" type="checkbox"/> Treated b. <input type="checkbox"/> Untreated</p> <p>c. <input type="checkbox"/> Sewage d. <input checked="" type="checkbox"/> Industrial Wastes</p> <p>3. Discharge To:</p> <p>a. <input checked="" type="checkbox"/> Surface Water b. <input type="checkbox"/> Ground Water</p> <p><u>Susquehanna River</u> Name of Stream to which discharged or drainage area in which ground-water discharge takes place or impoundment is located.</p>	<p>4. The Operation of a Mine <input type="checkbox"/></p> <p>Maximum Area to be Deep Mined _____ Acres</p> <p>5. An Erosion and Sedimentation Control Plan <input type="checkbox"/></p> <p>Project Area is _____ Acres</p>
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F. THIS APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. ALL CONSTRUCTION, OPERATIONS, PROCEDURES AND DISCHARGE SHALL BE IN ACCORDANCE WITH APPLICATION NO. 2277206 DATED 10/10/77, ITS SUPPORTING DOCUMENTATION AND AMENDMENTS DATED 1/6/78. SUCH APPLICATION, ITS SUPPORTING DOCUMENTATION, AND AMENDMENTS ARE HEREBY MADE A PART OF THIS PERMIT.

2. CONDITIONS NUMBERED 2, 3, 7, 8, 9, 14, 16, 20 and 21 OF THE Industrial Waste STANDARD CONDITIONS DATED 10/1/71 AND CONDITIONS NUMBERED _____ OF THE EROSION CONTROL STANDARD CONDITIONS DATED _____ WHICH CONDITIONS ARE ATTACHED AND MADE PART OF THIS PERMIT.

3. SPECIAL CONDITION(S) DESIGNATED A, B and C WHICH ARE ATTACHED AND ARE MADE A PART OF THIS PERMIT.

G. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. IF THERE IS A CONFLICT BETWEEN THE APPLICATION OR ITS SUPPORTING DOCUMENTS AND AMENDMENTS AND THE STANDARD OR SPECIAL CONDITIONS, THE STANDARD OR SPECIAL CONDITIONS SHALL APPLY.

2. FAILURE TO COMPLY WITH THE RULES AND REGULATIONS OF THE DEPARTMENT OR WITH THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.

3. THIS PERMIT IS ISSUED PURSUANT TO THE CLEAN STREAMS LAW, ACT OF JUNE 22, 1937, P.L. 1937 AS AMENDED, 35 P.S. § 631.1 ET SEQ. AND/OR THE WATER OBSTRUCTION ACT, ACT OF JUNE 25, 1913, P.L. 555 AS AMENDED, 22 P.S. § 631 ET SEQ. ISSUANCE OF THIS PERMIT SHALL NOT RELIEVE THE PERMITTEE OF ANY RESPONSIBILITY UNDER ANY OTHER LAW.

PERMIT ISSUED _____
DATE _____

DEPARTMENT OF ENVIRONMENTAL RESOURCES
BY Terry R. Fabian
Terry R. Fabian
TITLE Regional Water Quality Manager

This permit is issued subject to all Department of Environmental Resources Rules and Regulations now in force and the following Special Conditions:

A. The quality of effluent discharged from Outfall 001, Combined Mechanical Draft Cooling Tower Blowdown, shall be limited at all times as follows:

1. The permittee shall at all times maintain in good working order and operate the Mechanical Draft Cooling Towers (MDCT's) as efficiently as possible so as to minimize temperature differential between ambient river temperature and the temperature of the discharge; provided, however, the MDCT's may be shut down when in the judgment of the responsible TMINS personnel a combination of atmospheric conditions and river temperature may exist which causes the waste water to be heated as it passes through the MDCT's or ice formation is observed to occur within the MDCT's.

2. The temperature of the discharge shall never exceed a maximum of 87° F, except when the ambient river temperature exceeds 87° F, in which case, the discharge temperature shall not exceed the ambient river temperature; the temperature of the discharge shall not change by more than 5° F during any one hour period.

Ambient river temperature is the temperature of the river upstream of the heated waste discharge. The ambient temperature sampling point should be unaffected by any sources of waste heat. The temperature of the intake water will be considered as ambient river temperature so long as the intake water is unaffected by TMI's or any other nearby heated water discharge.

3. The following temperature limitations shall never be exceeded:

a. During the period November 1 through April 30 the temperature of the discharge shall not exceed 12° F above ambient river temperature.

b. During the period May 1 through October 31 the temperature of the discharge shall not exceed 7° F above ambient river temperature.

c. During plant shutdown operations the temperature of the discharge shall not exceed 12° F above ambient river temperature.

4. At no time shall the discharge exceed the rate of 150 million gallons per day as a 30-day average and shall not exceed 159.12 million gallons per day as a maximum at any time.
 5. The Chief of the Operations Section of the Harrisburg Regional Office of the Bureau of Water Quality Management shall be advised by telephone within 24 hours when the MDCT's are shut down for reasons other than those specified in condition 1 above and again when tower operation is resumed; shall be notified within 24 hours when the discharge limitations specified in paragraph 3 above are exceeded and again when the discharge is in compliance with such limitations; and shall be notified, at least 30 days in advance, whenever possible, of all scheduled plant cooldown operations.
 6. Within two years after both nuclear reactor units are in commercial operation, the Metropolitan Edison Company will collect and submit to the Department of Environmental Resources stream data which accurately defines the thermal plume or zone of impact from the TMINS heated waste discharge. As a minimum, thermal plume mapping data collected to meet the Nuclear Regulatory Commission's requirements shall be submitted to the Pennsylvania Department of Environmental Resources.
- B. Chlorination of either unit discharge shall be limited to a total of two (2) hours per day. During periods of chlorination the total residual chlorine at discharge Outfall 001 shall not exceed 0.2 mg/l.
- C. Within six months after Units 1 and 2 are in operation, the permittee shall submit to the Department data on the conformance of Discharge-Outfall 001 to the limitations in Special Conditions A and B.

October 1, 1971

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL RESOURCES

STANDARD CONDITIONS RELATING TO INDUSTRIAL WASTES

For use in Water Quality Management Permits

1971

General

1. The plans for which this permit is issued are approved subject to the condition that the waste treatment plant constructed under said plans will produce an effluent satisfactory to the Department. By this approval, neither the Department nor the Commonwealth of Pennsylvania assumes any responsibility for the feasibility of the plans or the operation of the plant to be constructed thereunder.
- ② All relevant and non-superseded conditions of any prior water quality management permits, decrees, or orders issued to the herein permittee or his predecessor shall be continued in full force and effect and together with the provisions of this permit shall apply to his successors, lessees, heirs and assigns.
- ③ The responsibility for the carrying out of the conditions of this permit shall rest upon the owner, lessee, assignee, or other party in responsible managerial charge of the operation producing the wastewaters and of the waste treatment works herein approved, such responsibility passing with each succession in said control. Approval of a discharge or facilities under a permit shall not be effective as to a new owner until a transfer has been executed and filed on forms provided by the Department and the transfer is approved by the Department.
4. The permittee shall secure any necessary permission from the proper federal authority for any outfall or industrial waste treatment structure which discharges into or enters navigable waters and shall obtain approval of any stream crossing, encroachment or change of natural stream conditions coming within the jurisdiction of the Department.
5. In order to avoid obsolescence of the plans of waste treatment works, the approval of the plans herein granted, and the authority granted in the permit, if not specifically extended, shall cease and be null and void two years from the date of this permit unless the works covered by said plans shall have been completed and placed in operation on or before that date.

6. Approval of plans refers to functional design and not structural stability, which is assumed to be sound and in accordance with good structural design. Failure of the works herein approved because of faulty structural design or poor construction will render the permit void.

7. The Department may at a subsequent time modify, suspend or revoke this permit whenever the waters affected by the presently authorized waste discharge have become so improved in character through natural or artificial processes of conservation or reclamation as to render inimical or harmful the effluent from the works herein approved, or whenever the Department increases treatment requirements for wastes generally.

Therefore, the permittee is hereby notified that when the Department shall have determined that the public interest requires the further treatment of such of the permittee's industrial wastes as are discharged to the waters of the Commonwealth, then upon notice by the Department and within the time specified, the permittee shall submit to the Department for its approval, plans and a report providing for the required degree of treatment, and after approval thereof, shall construct such works in accordance with the requirements of the Department.

8. If at any time the industrial waste treatment works of the permittee, or any part thereof, or the discharge of the effluent therefrom, shall have created a public nuisance, or such discharge is causing or contributing to pollution of the waters of the Commonwealth, the permittee shall forthwith adopt such remedial measures as are acceptable to the Department.

9. Nothing herein contained shall be construed to be an intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating industrial wastes and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by any of the laws of the Commonwealth of Pennsylvania or of the United States.

Construction

10. The works shall be constructed under expert engineering supervision and competent inspection, and in accordance with plans, designs, and other data as herein approved or amended, and with the conditions of this permit.

11. No radical changes shall be made in the works herein approved without approval of the Department. Revisions which do not increase the rate of flow or change the quality of the effluent, the treatment processes or the point of discharge, may be approved by the Regional Sanitary Engineer upon submission of plans. Other revisions must be approved by a permit.

12. The outfall sewer or drain shall be extended to low water mark of the receiving body of water in such a manner as to insure the satisfactory dispersion of its effluent thereinto; insofar as practicable it shall have its outlet submerged; and shall be constructed of cast iron, concrete, or other material approved by the Department; and shall be so protected against the effects of flood water, ice, or other hazards as to reasonably insure its structural stability and freedom from stoppage.
13. When the herein approved industrial waste treatment works is completed and before it is placed in operation, the permittee shall notify the Department so that an inspection of the works may be made by a representative of the Department.

Operation and Maintenance

14. No matter how well designed and carefully constructed a waste treatment works may be, full effectiveness cannot be developed unless it is efficiently operated. In order to secure such efficiency, protect the waters of the Commonwealth, and insure the most effective and economical dosage when chemicals are used, the permittee is required to place the works under the regular charge of a responsible plant official, and its operation under the control of the designer of the works or other qualified person approved by the Department, for at least one year after completion. Moreover, upon written notice from the Department, the permittee shall maintain one or more skilled operators regularly on duty for such daily periods as the Department may direct.
15. The right to discharge the effluent from the herein approved industrial waste treatment works into the waters of the Commonwealth is contingent upon such operation of these works as will at all times produce an effluent of a quality satisfactory to the Department. If, in the opinion of the Department, these works are not so operated or if by reason of change in the character of wastes or increased load upon the works, or changed use or condition of the receiving body of water, or otherwise, the said effluent ceases to be satisfactory for such discharge, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the said receiving body of water.
16. No untreated or ineffectively treated wastewaters shall at any time be discharged into the waters of the Commonwealth, and especial care shall be used to prevent accidental "spills" or similar unusual discharges of all raw, finished and waste materials.

17. No storm water, sewage or other industrial wastes not specifically approved herein, shall be admitted to the works for which this permit is issued, unless with the approval of the Department.
18. The various structures and apparatus of the industrial waste treatment works herein approved shall be maintained in proper condition so that they will individually and collectively perform the functions for which they were designed. In order to insure the efficacy and proper maintenance of the treatment works, the permittee shall make periodic inspections at sufficiently frequent intervals to detect any impairment of the structural stability, adequate capacity, or other requisites of the herein approved works which might impair their effectiveness, and shall take immediate steps to correct any such impairment found to exist.
19. Any screenings, and any settled or floated solids, shall at no time be permitted to accumulate in sedimentation basins to a depth sufficient to interfere with the settling efficiency thereof. Any such material removed shall be handled and disposed of so that a nuisance is not created and so that every reasonable and practical precaution is taken to prevent the said material from reaching the waters of the Commonwealth.
20. The permittee shall keep records of operation and efficiency of the waste treatment works and shall submit to the Department, promptly at the end of each month, such report thereon as may be required by the Department.
21. The discharge of untreated or improperly treated industrial wastes to the waters of the Commonwealth is contrary to the requirements of the Department. If, because of accidental breakdown of the treatment works or plant equipment or for other reason, any such discharge should occur, then the operation of the mill or process producing such discharge shall be discontinued until repairs to the treatment works or other satisfactory measures to prevent water pollution shall have been completed.

10

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RECEIVED
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
407 South Cameron Street, P.O. Box 107
Harrisburg, Pennsylvania 17101
(717) 787-9665
August 23, 1979
REGULATION DIVISION



Sewerage Permit No. 2275419
Three Mile Island
Met-Ed
Londonderry Township
Dauphin County

Mr. J. F. Hilbish
Metropolitan Edison Company
P. O. Box 542
Reading, PA 19640

3cc GJT
1cc JGH
1cc chrono
orig file
1cc LG
1cc G Miller

Dear Mr. Hilbish:

Sewerage Permit No. 2275419 has been extended to January 23, 1982,
as requested by your letter of August 7, 1979.

Very truly yours,
James V. Donato
James V. Donato, P.E.
Chief, Facilities Section
Harrisburg Regional Office

JVD:smw

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REGULATION DIVISION
L.V.R. J.L.