

Donald C. Cook Nuclear Plant • Units 1 & 2

Annual Environmental Operating Report

January 1, Through December 31, 1989

Indiana & Michigan Electric Company
Bridgman, Michigan

Docket Nos. 50-315 & 50-316
License Nos. DPR-58 & DPR-74

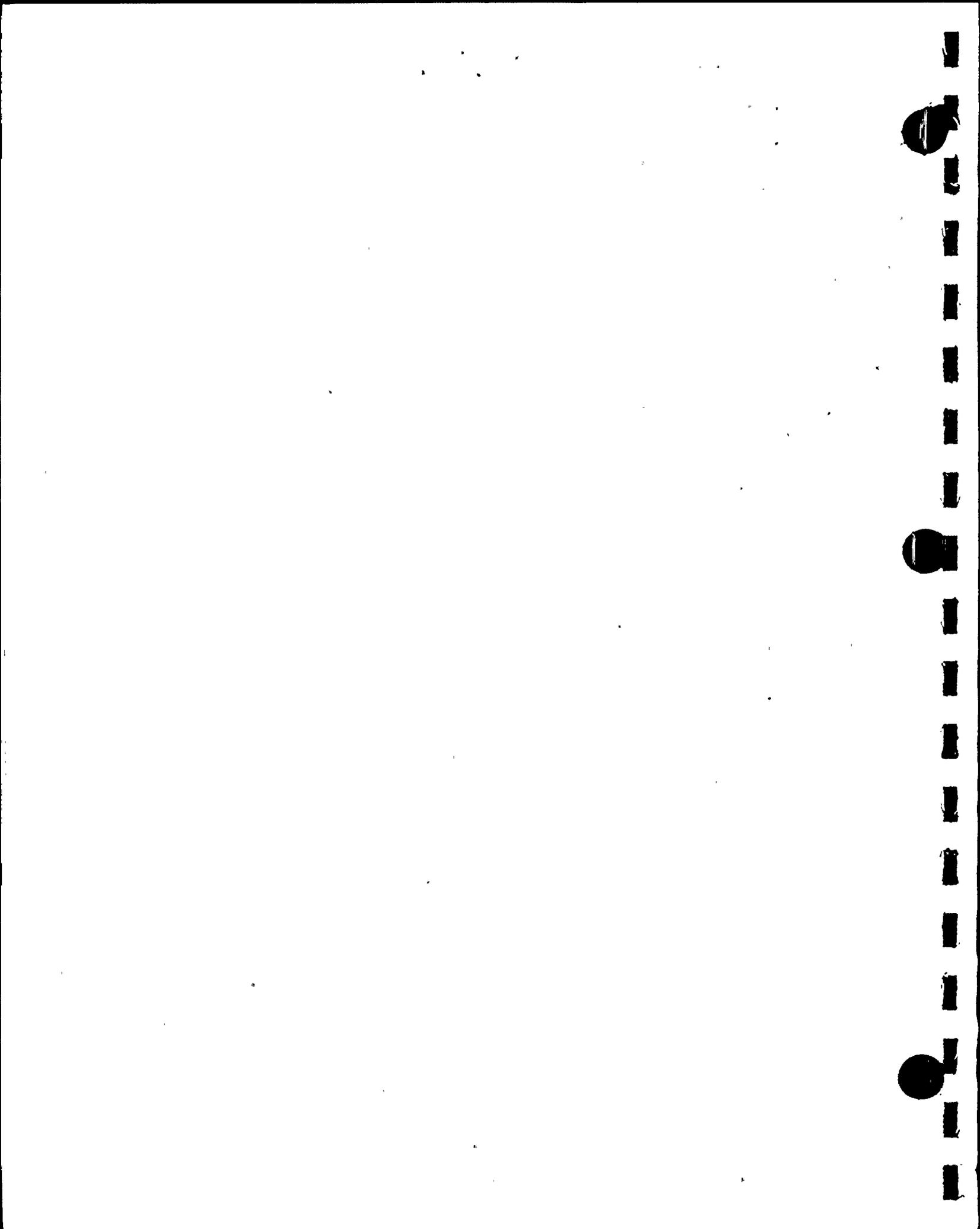
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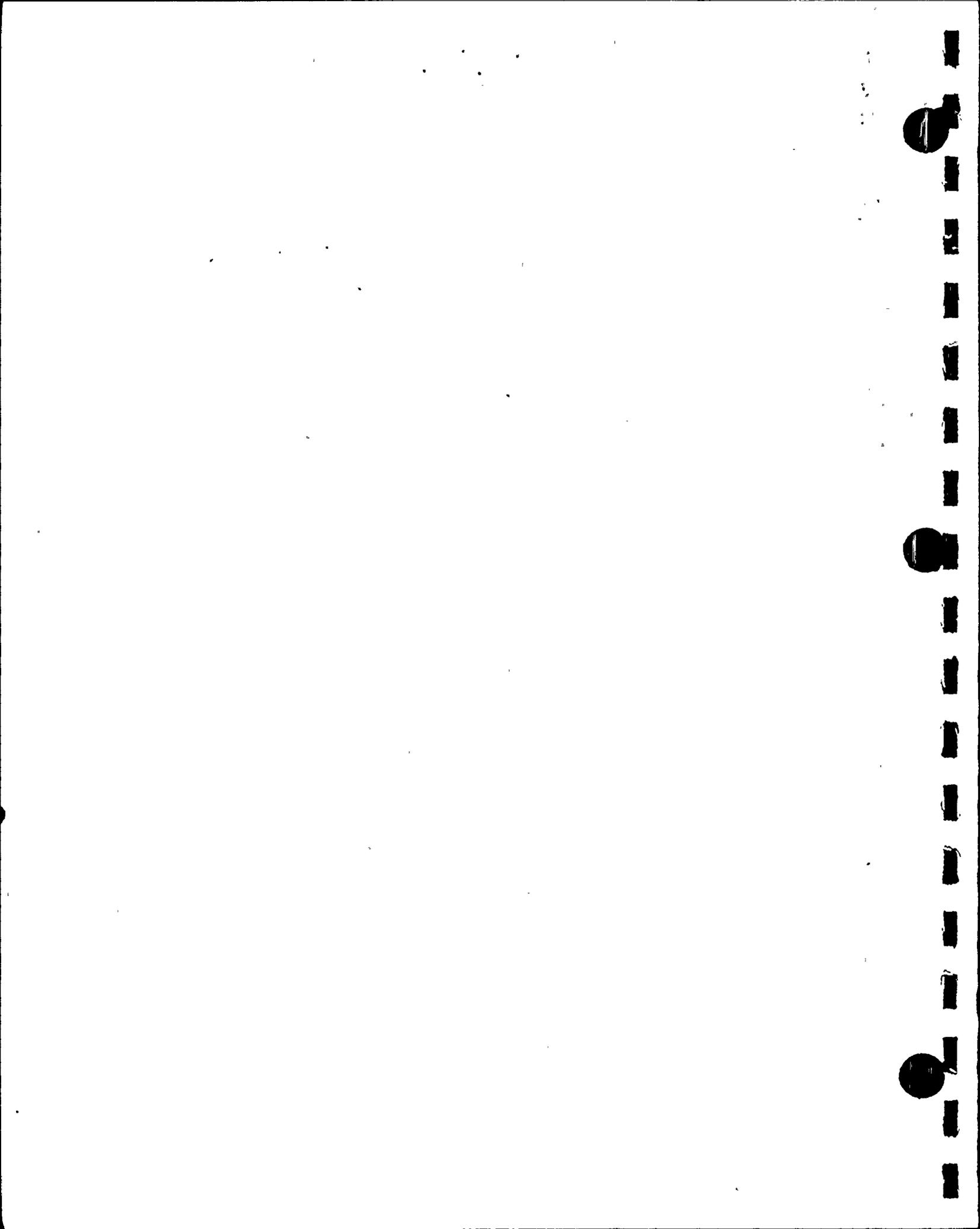
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I. INTRODUCTION

Technical Specification Section 6.9.1.6 and Appendix B, Part II, Section 5.4.1 require that an annual report be submitted to the Nuclear Regulatory Commission which details the results and findings of ongoing environmental radiological and non-radiological surveillance programs. This report serves to fulfill these requirements and represents the Annual Environmental Operating Report for Units 1 and 2 of the Donald C. Cook Nuclear Plant for the operating period from January 1, 1989 through December 31, 1989.

During 1989, based on the monthly operating reports for Unit 1 and Unit 2, the annual gross electrical generation, average unit service factors and capacity factors were:

<u>Parameter</u>	<u>Unit 1</u>	<u>Unit 2</u>
Gross Electrical Generation (MwH)	5,654,030	6,899,890
Unit Service Factor (%)	69.1	74.3
Unit Capacity Factor - MDC* Net (%)	60.6	71.6

* Maximum Dependable Capacity

Based upon the results of the radiological environmental monitoring program and the radioactive effluent release reports for the 1989 reporting year, it can be concluded that there were no adverse affects to the environment or to the general public due to the operation of the Donald C. Cook Nuclear plant.

II. CHANGES TO THE ENVIRONMENTAL TECHNICAL SPECIFICATIONS

There were no changes to the Environmental Technical Specifications during the year of 1989.

III. NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Environmental Protection Plan (EPP)

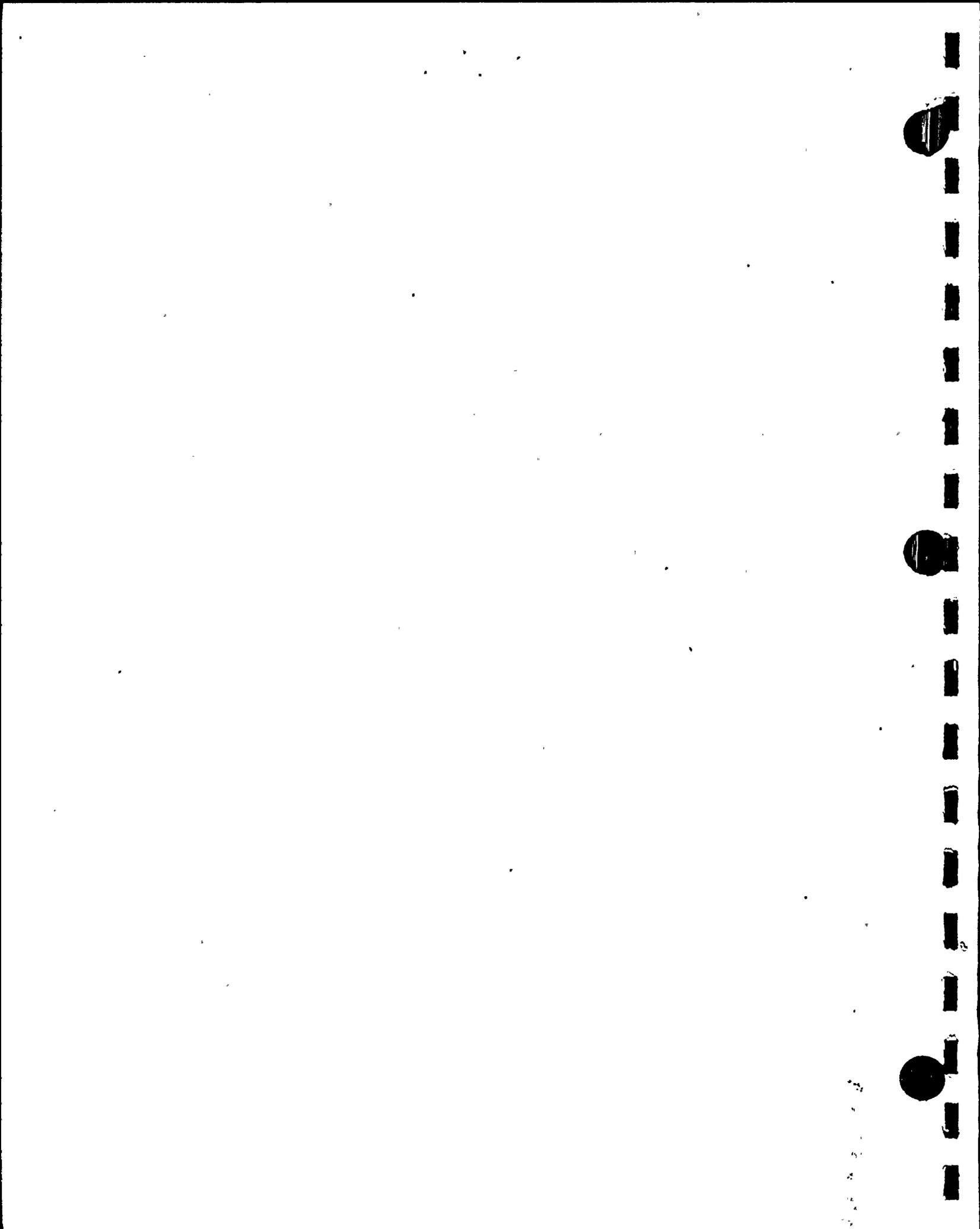
A.1 Plant Design and Operation

During 1989 no noncompliance with the Environmental Protection Plan occurred, nor were there any changes in station design, operations, tests or experiments which involved a potentially significant unreviewed environmental issue.

No construction activities during the reporting period occurred which required an environmental assessment of the activity.

A.2 Reporting Related to the NPDES Permit and State Certification

NPDES Permit #MI0047856 was issued to Donald C. Cook Nuclear Plant for the groundwater remediation project.



The existing Permit #MI0005827 was amended to delete oil and grease sampling for outfalls 00A, 00B, and 00C.

B.1 Environmental Monitoring

During the month of May, Noxious Vegetation Control, Inc. applied a mixture of Karmex, Krovar, and Banvell 700 to 36 acres of land to control grass and weed growth on the plant site.

No right-of-way maintenance was performed on Cook Nuclear Plant lands in 1989.

C.1 Aquatic Studies

C.2 Asiatic Clam (Corbicula)

Diver-collected sand and gravel samples, beach areas and samples from service water structures at Donald C. Cook Nuclear Plant were examined for the presence of the Asiatic clam Corbicula Fluminea in 1989. No veligers, small or adult clams, or empty shells were detected in any of the entrainment, diver-collected sand and gravel samples, or beach areas sampled. Two additional specimens of Corbicula were identified since the 1988 report. One was a live specimen removed from a non-essential service water pipe in December 1988. The second specimen was a Corbicula half shell removed from a condenser tube on the outlet side of the Unit 2 East Main Feedpump Condenser Waterbox during a routine inspection on November 12, 1989. However, from our data, we concluded that no population has become established nor has a reproducing population been detected at the Cook Nuclear Plant. At present, Corbicula does not appear to be a threat to operation of the water systems at the Plant; however, because occasional specimens do occur, there will be an increase in our observation and monitoring program.

IV. SOLID RADIOACTIVE WASTE TREATMENT SYSTEM

During the year of 1989, there were no major changes to the Donald C. Cook Nuclear Plant's Solid Radioactive Waste Treatment System.

V. RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

The Radiological Environmental Monitoring Program is designed to serve the following purposes:

1. Establish baseline radiation levels in the environment prior to the Plant's operation.
2. Monitor potential critical pathways of radioactive effluent to man.



3. Determine radiological impact on the total environment caused by the operation of the Donald C. Cook Nuclear Plant.

A. Changes to the Radiological Environmental Monitoring Program (REMP)

A.1 During 1989 two (2) new thermoluminescent dosimetry (TLD) stations were established.

A surveying firm conducted a remapping of the Donald C. Cook Nuclear Plant area, using updated mapping technology. The survey generated new sector coordinates which affected the sector locations of existing TLD stations. As a result, no existing TLD stations were located in sectors A and D. A new TLD station was subsequently added to sector A (A-11) and to sector D (A-12).

A.2 The remapping of the Plant area also resulted in the refinement of the distances to the nearest residences for each land sector. The new distances were incorporated into the Plant's offsite dose assessment program.

A.3 A new analytical contractor, Teledyne Isotopes, began performing REMP analyses in November 1989. Services with the previous lab, CEP, have been discontinued.

B. Radiological Impact of Donald C. Cook Nuclear Plant Operations

The various analyses of most sample media suggest that there was no discernible impact of the nuclear plant on the environment. The analysis of air particulate filters, charcoal cartridges, direct radiation by thermoluminescent dosimeters, fish, water, and sediments from Lake Michigan, drinking water, and food products, either did not detect any radioactivity or measured only naturally occurring radionuclides at normal background levels. Of the 174 milk samples analyzed for iodine-131, three samples had measurable activity, but very low concentrations. The highest iodine-131 concentration was only two times the required measurement sensitivity.

Tritium, measured at low levels in onsite wells, appears to be the only radionuclide attributable to Plant operations. The 1989 onsite tritium concentrations are well below the Technical Specification reporting levels and are 14% - 40% below the 1988 mean values.



As stated in the 1988 Annual Report, the tritium activity in the onsite wells is attributed to primary to secondary leakage. It is anticipated that the repair of Unit 2 steam generators in 1988 will result in a decline in tritium concentrations. These tritium concentrations will continue to be evaluated as part of the REMP data reviews.

C. Land Use Census

The 1989 Milk Farm Survey identified two minor changes from the 1988 survey. One milk farm changed ownership and an established farm added a dairy operation. These changes did not affect the milk sample collection program or the calculation of off-site doses through the milk pathway.

The milk animal previously identified as closest to the plant center line axis remains the closest milk animal. The closest milk animals for each sector are identified in the Milk Survey Table at the end of Appendix F.

The 1988 Land Use Survey identified the need to verify the distance to the nearest residences in each of the land sectors. A review of drawings, photographs, and other documentation was performed by the AEP Civil Engineering laboratory to establish the new distances using available data. The results of this review were included in the 1988 Annual Environmental Operating Report.

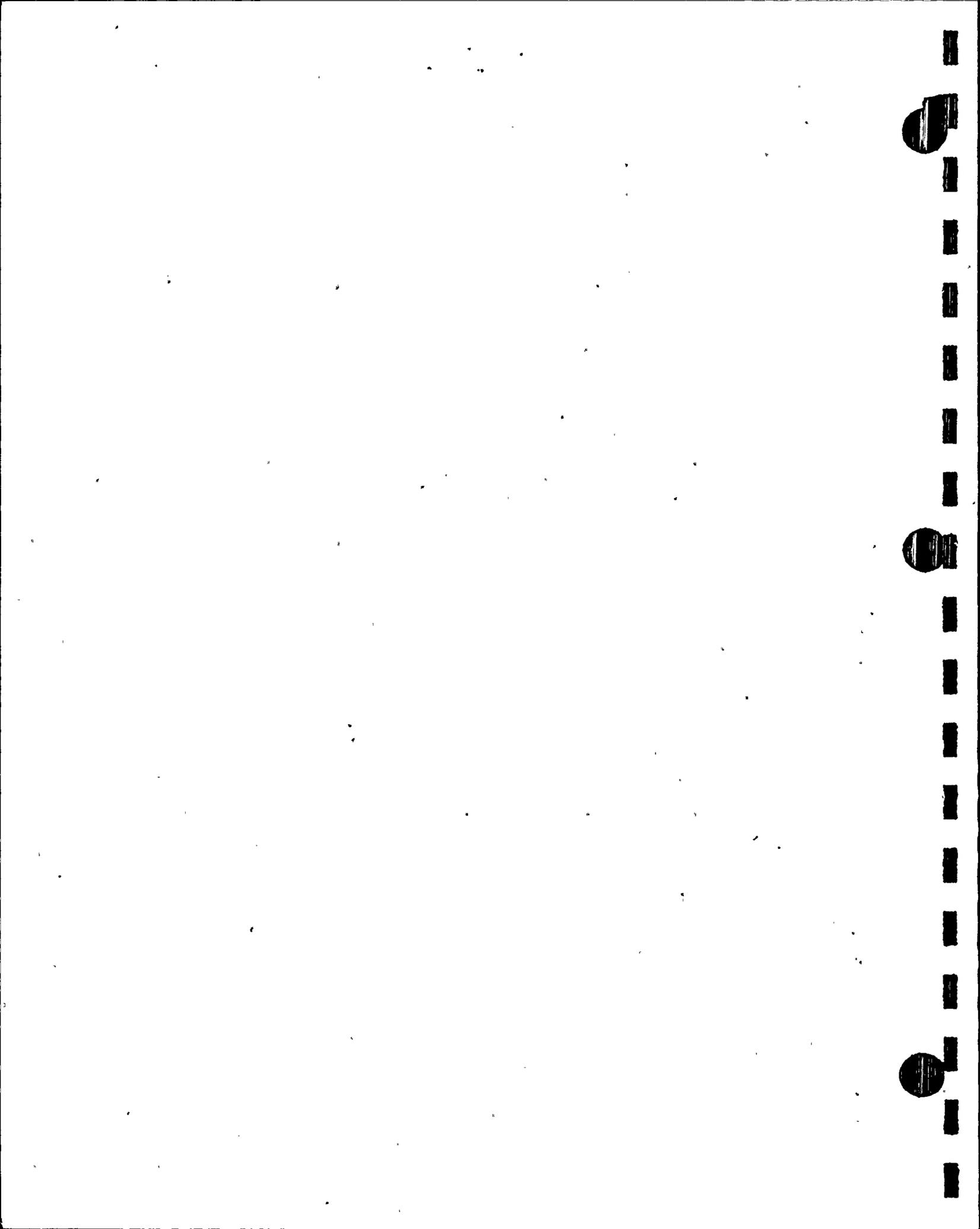
A surveying firm was subsequently contracted to remap the Cook Nuclear Plant area and establish residence distances using updated technology. The new distances are reflected in the 1989 Annual Environmental Operating Report and have been incorporated into the Cook Nuclear Plant offsite dose assessment program.



APPENDIX 1

NPDES NON-ROUTINE REPORT

1989



NONROUTINE REPORTS

<u>EVENT DATE</u>	<u>DESCRIPTION</u>
February 24, 1989	Unit 2 Main Turbine Lube Oil Cooler Leak to the Nonessential Service Water System
April 5, 1989	Unit 2 Main Turbine Lube Oil Cooler Leak to the Nonessential Service Water System
May 10, 1989	Turbine Room Sump - Continuous pH Meter Was Found Inoperative
September 19, 1989	Unit 2 Noncontact Cooling Water - Total Residual Chlorine Exceeded NPDES Permit Limits
October 25, 1989	Product Recovery Unit - Total Recoverable Petroleum Hydrocarbons Exceeded NPDES Permit Limits, and Weekly Influent Samples for Total Suspended Solids Were Not Collected

11.11.11



APPENDIX 2

HERBICIDE APPLICATION REPORT

1989

100





Date January 2, 1990
Subject 1989 Herbicide Spray Report - Cook Plant

From Dane M. McKay
To H. E. Brooks

SUMMARY OF PROGRAM

- A. During the month of May, Noxious Vegetation Control, Inc. applied a mixture of Karmex, Krovar and Banvell 720 to control grass and weed growth on the plant site. Locations treated include:
KV switchgear yards, roadways, parking lots, perimeters of the sewage ponds, and controlled/uncontrolled areas inside the plant fence. A total of 224 lbs. of Karmex, 36 lbs. of Krovar, and 8.8 gals. of Banvell 720 was applied over 36 acres.
- B. No right-of-way maintenance was performed on Cook Plant lands in 1989 (see letter from R. J. Cheeney) attached.
- C. Major areas covered and observations made in December.
1. Heavy weed growth on sides of Sewage Pond "B". Very few weeds on sides of Sewage Pond "A".
 2. Road to Absorption Pond: Good weed control on road. No weeds found at all.
 3. 765 KV Switchgear Yard: Sparse patches of grass growing throughout yard. Perimeter fence is clear of grass and weeds.
 4. 345 Switchgear Yard: Sparse weed growth along south perimeter fence. Control is good in all other areas.
 5. Railroad Tracks east of Training Center: Good weed control, no weeds found at all.
 6. CESA: Good weed control, a few weeds growing along foundation on the north side of the building.
 7. Contractor Supervisors Parking Lot: Good weed control, no weeds found at all.



1989 Herbicide Spray Report
January 2, 1990
Page 2

8. East Sewage Plant: Grass and weeds growing along south and west sides of building.
9. South Sewage Plant: Grass and weeds growing along south and west sides of building.
10. 69 KV Switchgear Yard: Good weed control, no grass or weeds growing in yard or along fence.
11. North Perimeter Fence: Good weed control, no weeds found at all.
12. South Perimeter Fence: Good weed control, no weeds found at all.
13. East Perimeter Fence: Good weed control, no weeds found at all.
14. Old Training Center: Good weed control, some weeds along east side of building.
15. Contractors Trailer Complex: Sparse grass and weeds growing along base of trailers.
16. ICMS Office Trailers: Good control under trailers, no weeds found at all.
17. Insulators Fab Shop: Good weed control along building, no weeds found at all.
18. Southwest Side of Turbine Building: Grass and weeds growing along foundation of building.
19. South End of Turbine Building: Grass and weeds growing along foundation of building.
20. Unit 1 RWST Area: Good weed control, no weeds found at all.
21. Unit 2 RWST Area: Good weed control, no weeds found at all.
22. Hydrogen and Nitrogen Storage Tank Area: Weeds growing along foundation of Auxiliary Building.



1989 Herbicide Spray Report
January 2, 1990
Page 3

New areas to be sprayed next year:
REMP Air Stations, Main Met Tower Building, Environmental
Pole Barn, Environmental Warehouse, Construction Fab
Shop, Diesel Fuel Oil Tank Berm, Unit 1 Emergency
Diesel Fuel Unloading Berm.

The observations made in December clearly indicate that the thorough spraying program continues to control encroaching vegetation, resulting in a reduction of maintenance costs and improving overall plant site visibility.



Dane M. McKay

DMM/js

c: J. E. Rutkowski/J. T. Wojcik
D. M. Fitzgerald
C. R. Mort
1989 Annual Environmental Operating Report



COOK NUCLEAR PLANT
HERBICIDE APPLICATION DATA
1989

Herbicide Application By: Noxious Vegetation Control, Inc.

Name of Applicator: Todd Thomas

Date	Location	Lbs. Karmex	Lbs. Krovar	Gals. Banvell 720	Gals. H2O	# of Acres Covered
5-25-89	765 KV Yard	112	21	4.4	1750	21
5-25-89	345 KV Yard	16	3	.6	250	5
5-26-89	69 KV Yard, Sewage Plant, Old Training Center, Peri- meter Fences, Trailer Com- plex, Contractor Supv. Lot, CESA	32	6	1.25	500	5
5-26-89	ICMS Trailers, Fab Shop, RWST Areas, Storage Tank Area, Road to Ponds, Sewage Ponds, Railroad Tracks	64	6	2.5	500	5
		224 lbs.	36 lbs.	8.8 Gallons	3000 Gallons	36 Acres





Date December 18, 1989

Subject Right-of-Way Maintenance Herbicide Use on Cook Plant Lands

From R. J. Cheeney

To D. McKay - Cook Plant ✓

There was no maintenance work done on Cook Plant lands in 1989.

Therefore, no herbicides were used. If you have any questions, please call me at Extension 2254.

A handwritten signature in cursive script, appearing to read 'R. J. Cheeney', with a circular flourish at the end.

R. J. Cheeney

RJC:et

c: H. E. Brooks



APPENDIX 3

ASIATIC CLAM MONITORING PROGRAM

1989



A Technical Report To:
THE D. C. COOK NUCLEAR PLANT
AMERICAN ELECTRIC POWER SERVICE CORPORATION
INDIANA AND MICHIGAN ELECTRIC COMPANY

RESULTS OF THE 1989 MONITORING
PROGRAM TO DETECT
THE ASIATIC CLAM (*CORBICULA*)
IN THE VICINITY OF
THE D. C. COOK NUCLEAR PLANT
WITH A SUMMARY OF 1982-1988 RESULTS

By

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HANCOCK BIOLOGICAL STATION ON KENTUCKY LAKE
MURRAY STATE UNIVERSITY
MURRAY, KENTUCKY 42071
(502) 474-2272

December 13, 1989



SUMMARY

Entrainment, diver-collected sand and gravel samples, beach areas and samples from service water structures at the D. C. Cook Nuclear Plant were examined for the presence of the Asiatic clam *Corbicula fluminea* in 1989. Data from the 1982 through 1989 monitoring program are summarized. No veligers, small or adult clams, or empty shells were detected in any of the entrainment, diver-collected sand and gravel samples, or beach areas sampling. One half shell of *Corbicula* was identified as a specimen taken from one of the condenser tubes on the outlet side of the Unit #2 East Main Feedpump Condenser water box during a routine inspection for condenser tubes leaks on November 12, 1989. One additional specimen of *Corbicula* from the Cook Plant was identified since the 1988 report. It was a live specimen removed from a non-essential service water pipe in December 1988. The only other confirmed report of the species was a single diver-collected empty shell we examined in 1984. No other *Corbicula* have been collected from any site in Lake Michigan in the immediate vicinity of the D. C. Cook Nuclear Plant. Live *Corbicula* were collected in Lake Michigan near the J. H. Campbell Power Plant (White et al. 1984) north of the D. C. Cook Nuclear Plant in November 1983. We have seen no published data or additional specimens to confirm that the population near the Campbell Plant still exists, but we have had verbal communication that it does. However, from our data, we concluded that no population has become established nor has a reproducing population been detected at the D. C. Cook Nuclear Plant. At present, *Corbicula* does not appear to be a threat to operations of the water systems at the D. C. Cook Nuclear Plant; however, because occasional specimens do occur, an increased level of observations or monitoring is recommended.



INTRODUCTION

Corbicula fluminea (Muller) (= *Corbicula manilensis*) was introduced into the Columbia River of Washington State in the late 1930s and since has spread eastward throughout the Mississippi River drainage and most recently (1980-1981) into Lake Erie. For Lake Michigan, a small population was detected near the J. H. Campbell power plant (southeastern Lake Michigan) in November 1983 (White et al. 1984), and the first empty shell at D. C. Cook was identified 22 May 1984 from diver-collected sand and gravel from the water intake.

Biofouling of power plant service water systems by *Corbicula* in the Mississippi and southern drainages and now western Lake Erie has prompted monitoring of Great Lakes nuclear plants to allow for early detection and creation of control procedures. A monitoring program specifically for *Corbicula* was initiated at the D. C. Cook power plant in 1982. In that year, three 24-hour entrainment samples were examined for veligers (planktonic larvae) and small clams. Entrainment samples are collected in one of the forebays using a pump and either a #30 or #20 net following the methods summarized in Zdeba and White (1985). Dates of sampling in 1982 were late May, mid-August, and early October (Table 1). Entrainment samples were supplemented by collections of clam shells washed onto the beach in front of the power plant and near the mouth of the St. Joseph River. Beach walks of at least 300 meters were begun in late September and late October 1982 (Table 1). The St. Joseph River site was chosen as a possible point of entry of *Corbicula* into Lake Michigan. No *Corbicula* veligers or small clams were detected in 1982 in entrainment samples nor were specimens found in the more than 400 shells (primarily fingernail clams in the family Pisidiidae) collected in beach walks. Shells of *Corbicula* are much more sturdy than are shells of pisidiids; thus, if present in the lake, they should wash ashore (White 1979). Further, no *Corbicula* had been collected in lake benthos sampling programs from 1970 through April 1982 or in previous entrainment studies nor had there been any validated reports of *Corbicula* being collected from Lake Michigan or its drainage (Mackie et al. 1981, Zdeba and White 1985).



TABLE 1

Sampling dates, sample type, and numbers of *Corbicula* collected from 1982 through 1989 at the D. C. Cook Nuclear Plant.

Date	Sample Type			
	Entrainment	Beach Walk	Diver- Collected Sand & Gravel	Internal Water Systems
1982				
25-26 May	none	-	-	-
18-19 Aug	none	-	-	-
21 Sep	none	-	-	-
5-6 Oct	none	-	-	-
26 Oct	none	-	-	-
1983				
15-16 Jun	none	none	-	-
13-14 Jul	none	none	-	-
17-18 Aug	none	none	-	-
1984				
22 May	-	-	1*	-
14-15 Jun	none	none	-	-
12-13 Jul	none	none	-	-
16-17 Aug	none	none	-	-
1985				
13-14 Jun	none	none	-	-
July	-	-	none	-
12-13 Jul	none	none	none	-
15-16 Aug	none	none	none	-



1986				
16-17 Jun	none	none	-	-
14-15 Jul	none	none	-	-
18-19 Aug	none	none	-	-
<hr/>				
1987				
15-16 Jun	none	none	-	-
15-16 Jul	none	none	-	-
10-11 Sep	none	none	-	-
Fall	-	-	none	-
<hr/>				
1988				
June	-	-	none	-
24-25 Jun	none	none	-	-
22-23 Jun	none	none	-	-
19-20 Aug	none	none	-	-
December	-	-	-	1**
<hr/>				
1989				
26-27 Jun	none	none	-	-
25-26 Jul	none	none	-	-
16-17 Aug	none	none	-	-
26 Sept	-	-	none	-
13 Oct	-	-	none	-
12 Nov	-	-	-	1***
16 Nov	-	-	none	-
<hr/>				
* intact empty <i>Corbicula</i> shell, identification date				
** live <i>Corbicula</i> clam				
*** half <i>Corbicula</i> shell				



RESULTS OF SAMPLING DURING THE 1983-1989 MONITORING PERIOD

Entrainment samples, beach walk collections, and diver-collected gravel samples were again examined in 1983, 1984, 1985, 1986, 1987, 1988 and 1989. Beginning in 1983, sampling periods were moved to mid-June, mid-July, and mid-August, based upon life cycle data gathered for western Lake Erie by Scott-Wasilk et al. (1983). The mid-August period for 1987 was delayed until early September due to pump malfunctions. All sampling pumps were working well in 1988 and 1989, and samples were again taken in June, July, and August (See Table 1 for sampling dates). No specimens of *Corbicula* (juveniles or veligers) were found in thorough examination of the 1989 entrainment samples nor in the 1982-1988 entrainment samples. Several hundred Pisidiidae (fingernail clams) Unionidae (freshwater mussels) and snails have been collected in the beach walks in 1989 and each previous year, but no *Corbicula* have been located on the beaches either at D. C. Cook or at the mouth of the St. Joseph River.

Two diver-collected samples (13 October and 16 November) from the intake structures were examined. Both contained sand, hundreds of fragments and half shells of Pisidiidae (fingernail clams), a few fragments of Unionidae (freshwater mussels), and numerous whole and fragments of snail shells. None of the clam fragments appeared to be *Corbicula*. *Corbicula* shells are much more resistant to breakage, and if present, should have been detected.

One sample was examined (26 September) that had been collected from the Unit I non-essential service water strainer by maintenance personnel. This sample also contained numerous fragments of Pisidiidae and some snail shell fragments but no *Corbicula*.

On November 15, 1989, we received a single half shell of a clam that had been found lodged in one of the condenser tubes on the outlet side of the Unit #2 East Main Feedpump Condenser water box during a routine inspection for condenser tube leaks on November 12, 1989. This shell was confirmed as *Corbicula*. The shell was 21 mm long and in good condition

Prior to this year's sampling and just after submitting the 1988 report, we received (23 December 1988) a live specimen of *Corbicula* collected from the D. C. Cook Plant. The clam was removed from a non-essential service water pipe that had been opened to correct a leak. According to Cook Plant personnel, approximately 760 feet of this pipe was visually checked and this was the only



specimen found. The water pipe was 1" ID with a flow of 15-60 gal min⁻¹. Water temperatures in the pipe reflected ambient Lake Michigan water, which at the time of collection was about 35 °F. The clam was kept alive in our laboratory for about a week until preserved in alcohol. The specimen was mature and aborted some newly-forming veligers upon preservation.

This brings the total number of *Corbicula* found at the D. C. Cook Plant to 3: one whole but empty shell identified May 1984, one live clam in December 1988, and one empty half shell in November 1989. Previously we had identified 10 live *Corbicula* from a November 1983 diver-collected sample near the J. C. Campbell Power Plant, (White et al. 1984) which were assumed to be in their first year of growth. We have no additional hard data to confirm if that population has survived or died out (word of mouth suggests that it has survived). Data on that population, if remaining, might provide ecological insights for the potential of *Corbicula* establishment at D. C. Cook. The shell identified in 1984 also appeared to be in its first year of growth. It was our opinion that the specimen was quite recent because it was intact, and it appeared to be of the same cohort as the specimens collected near the J. C. Campbell Power Plant. The two specimens from the 1988 and 1989 samples appeared to be in their second year of growth and probably were mature.

From these very limited data, it is evident that *Corbicula*, at least in low numbers, does occur regularly in the vicinity of the D. C. Cook Plant. However, it appears that no detectable breeding population has become established and that *Corbicula* at this time does not present a threat to operations of the water systems. The finding of two large specimens of breeding age confirms that at least some *Corbicula* are living beyond the single season of the specimens collected in 1983 at the Campbell Plant and identified in 1984 at D. C. Cook.

CONCLUSIONS

No *Corbicula* veligers or small clams were collected in the 1989 entrainment, diver collected samples, or beach samplings. Two large specimens were found in water supply pipes in 1988 and 1989. Survivorship appears to be confined to the plant itself. We do not suspect that *Corbicula* is present in Lake Michigan in the vicinity of the D. C. Cook Nuclear Plant, but if occasionally present, the populations have remained so small as to be nearly undetectable and probably have not posed a threat to plant operations. Thus the potential for



establishing a breeding population may exist and we would recommend an increased awareness of *Corbicula* with appropriate increased levels of observations of the water system and possibly increased monitoring.



REFERENCES CITED

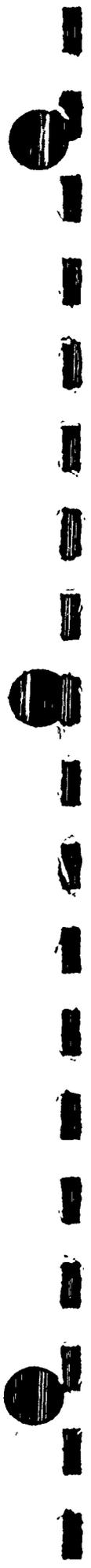
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APPENDIX 4

NPDES PERMITS

1989



STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION

THOMAS J. ANDERSON
MARLENE J. FLUHARTY
DORON E. GUYER
JERRY KAMMER
ELLWOOD A. MATTSO
O. STEWART MYERS
RAYMOND POUPORE



JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
P.O. BOX 30028
LANSING, MI 48909

DAVID F. HALES, Director

September 1, 1989

CERTIFIED MAIL

Indiana Michigan Power Company
P.O. Box 60
Fort Wayne, Indiana 46801

Gentlemen:

SUBJECT: NPDES Permit No. MI0047856
Donald C. Cook Nuclear Plant
Bridgman, Michigan

Your National Pollutant Discharge Elimination System (NPDES) Permit has been processed in accordance with appropriate state and federal regulations. It contains the requirements necessary for you to comply with state and federal water pollution control laws.

REVIEW THE PERMIT EFFLUENT LIMITS AND COMPLIANCE SCHEDULES CAREFULLY. These are subject to the criminal and civil enforcement provisions of both state and federal law. Permit violations are audited by the Michigan Department of Natural Resources and the United States Environmental Protection Agency and may appear in a published quarterly noncompliance report made available to agencies and the public.

Your monitoring and reporting responsibilities must be complied with in accordance with this permit. If applicable, Discharge Monitoring Report forms will be transmitted to you in the near future. These reports are to be submitted monthly or otherwise as required by your NPDES permit.

Any reports, notifications, or questions regarding the attached permit or NPDES program should be directed to the following address:

Fred Morley, District Supervisor
621 North Tenth Street
P.O. Box 355
Plainwell, Michigan 49080
Telephone: (616) 685-9886

RECEIVED

SEP 05 1989

ENVIRONMENTAL
AFFAIRS





Indiana Michigan Power Company

Page 2

September 1, 1989

NOTE: All references within this permit made to the Water Quality Division or Chief of the Water Quality Division are to refer to the Surface Water Quality Division or Chief of the Surface Water Quality Division, respectively.

Sincerely,

William E. McCracken

William E. McCracken, P.E.
Chief, Permits Section
Surface Water Quality Division
517-373-8088

Enclosure: Permit

cc: EPA-Region V (2)
208 Agency - Southwest Michigan Regional Planning Commission
Planning and Special Programs Section
Mr. Fred Morley - Plainwell District (2)
Mr. Paul Blakeslee, Regional Supervisor, Region III
Compliance and Enforcement, SWQD
Data Entry, SWQD
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MICHIGAN WATER RESOURCES COMMISSION
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq; the "Act"), and the Michigan Water Resources Commission Act, as amended, (Act 245, Public Acts of 1929, as amended, the "Michigan Act"),

Indiana Michigan Power Company
P.O. Box 60
Fort Wayne, Indiana 46801

is authorized to discharge from a facility located at

Donald C. Cook Nuclear Plant
One Cook Place
Bridgman, Michigan 49106

designated as IN MI Power Co-Cook GWCU

to the receiving water named the Lake Michigan in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

This permit for a new use takes immediate effect on the date of issuance, unless the applicant either administratively or judicially challenges any condition of this permit, in which case the entire permit is stayed and all authorizations explicitly or implicitly contained in the permit cease. Any person who feels aggrieved by this permit may file a sworn petition with the Executive Secretary of the Michigan Water Resources Commission, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Commission may reject any petition filed more than 60 days after issuance as being untimely. During the course of any administrative proceeding brought by a person other than the applicant, the conditions of this permit will remain in effect, unless the Commission determines otherwise.

This permit and the authorization to discharge shall expire at midnight December 1, 1989.

This permit is based on an application submitted on May 8, 1989.

Issued this 23rd day of August, 19 89, by the Michigan Water Resources Commission.



Paul D. Zugger
Executive Secretary

ACTING



PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Final Effluent Limitations, Outfall O1S

Beginning upon initiation of discharge and lasting until expiration of this permit, the permittee is authorized to discharge two hundred and sixteen thousand (216,000) gallons per day of treated groundwater and an unspecified amount of stormwater runoff through outfall O1S to lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	lbs/day		Other Limitations		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow (MGD)					Daily	Report Total Daily Flow
BTX, see Part I.A.1.a., below:				20 ug/l	Monthly	Grab
Total Recoverable Petroleum Hydrocarbons, see Part I.A.1.a., below:				0.5 mg/l	Weekly	Grab
Outfall Observation					5X/Week	Visual

a. BTX shall be defined as the summation of the concentrations of benzene, toluene, and xylenes in the effluent discharge. BTX shall be analysed for using U.S. EPA Test Method 602 or approved equal. Total Recoverable Petroleum Hydrocarbons shall be analysed for using U.S. EPA Method 418.1. The reported detection level for the U.S. EPA test method 418.1 is 1.0 mg/l, lower detection levels have been reported on individual sample analysis. The permittee shall determine an appropriate detection level for the discharge from the treatment system.

b. The receiving water shall contain no unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits as a result of this discharge.

c. Samples, measurements, and observations taken in compliance with the monitoring requirements for outfall O1S shall be taken after the activated carbon treatment system and prior to discharge into the existing existing stormwater collection system.

d. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids or deposits) shall be reported immediately to the Plainwell District Office of the Surface Water Quality Division followed with a written report within 5 days detailing the findings of the investigation and the steps taken to correct the condition.

e. In the event the permittee shall require the discharge of water treatment additives, the permittee shall notify the Plainwell District Supervisor of the Surface Water Quality Division. The permittee shall obtain written approval from the Plainwell District Supervisor to discharge such additives at a specified level. The permit may be modified in accordance with the requirements of Part II.B.4 if a constituent of the additive or additives requires limiting.



PART I

Section B.

2. Special Condition - Basis of Design, Plans and Specifications, and an Operations and Maintenance Manual

Best Available Treatment (BAT) is a two-stage activated carbon system, or equivalent. Prior to construction of the treatment system, the permittee shall receive the approval of the Plainwell District Supervisor of the Surface Water Quality Division for: a basis of design, and plans and specifications.

Prior to discharge, the permittee shall receive the approval of an operations and maintenance manual for the proposed treatment system. The operations and maintenance manual shall include a sampling program, consistent with the approved design, for influent, intermediate stage, and effluent testing. The sampling program shall, upon approval, be considered a condition of this permit.

3. Special Condition - Short Term Waste Characterization Study

As a condition of this permit and upon initiation of discharge the permittee shall monitor the discharge from the treatment system (identified as outfall 01S in this permit) and the influent to the treatment system for the constituents, at the frequency, and for the duration specified below. This monitoring is designed to determine whether these constituents are discharged in significant quantities. The results of the analysis of such monitoring shall be submitted to the Plainwell District Supervisor of the Surface Water Quality Division in accordance with Part I.C.3, Schedule of Compliance. If, upon review of the analysis, it is determined that any of the materials or constituents require limiting to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified after public notice and Commission approval of the recommended permit modification in accordance with Part II.B.4.

<u>CONSTITUENT</u>	<u>SAMPLE TYPE</u>	<u>SAMPLE FREQUENCY AND DURATION</u>	<u>TEST METHOD</u>
Total Suspended Solids	Grab	Weekly for Six (6) Weeks	
pH (Standard Units)	Grab	Weekly for Six (6) Weeks	

4. Special Condition - Reopener Clause

This permit may be modified or, alternatively, revoked and reissued to comply with any applicable standard(s) or limitation(s) promulgated under Section 301(b)(2)(c)(d), 304(b)(2) and 307(a)(2) of the Act, if the effluent standard(s) or limitation(s) so promulgated:

- a. is(are) either different in condition or more stringent than any effluent limitation in the permit; or
- b. control(s) any pollutant not limited in the permit.



PART I

Section A.

5. Special Condition - Notification Requirement

The discharger shall notify the Plainwell District Supervisor of the Surface Water Quality Division, in writing, within 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of:

- a. Detectable levels* of chemicals on the current Michigan Critical Materials Register or priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, which were not acknowledged in the application** or listed in the application at less than detectable levels.
- b. Detectable levels* of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information.
- c. Any chemical at levels greater than five times the average level reported in the application**.

Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the schedule of compliance.

*The detectable level shall be defined as the Method Detection Limit (MDL) as given in Appendix B to Part 136, Federal Register, Vol. 49, No. 209, October 26, 1984, pp. 43430-31.

**The application submitted on May 8, 1989.

6. Special Condition - Discharge to the Groundwaters

This site is a known source of groundwater pollution. The issuance of this permit does not authorize any discharge to the groundwaters or venting of contaminated groundwaters to the surface waters, nor does it constitute a release of liability for any groundwater contamination at or around the site. The State reserves its rights to seek remedies to abate any groundwater contamination.



PART I

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting:

a. DMR Submittal Requirements - The permittee shall submit Discharge Monitoring Report (DMR) forms to the Michigan Department of Natural Resources, Surface Water Quality Division, Data Entry Unit, P.O. Box 30028, Lansing, Michigan, 48909, for each calendar month of the authorized discharge period(s). The DMRs shall be postmarked no later than the 10th day of the month following each month of the authorized discharge period(s).

3. Definitions

a. The monthly average discharge is defined as the total discharge by weight, or concentration if specified, during the reporting month divided by the number of days in the reporting month that the discharge from the production or commercial facility occurred. If the pollutant concentration in any sample is less than the detection limit, regard that value as zero when calculating monthly average concentration. When less than daily sampling occurs, the monthly average discharge shall be determined by the summation of the measured daily discharges by weight, or concentration if specified, divided by the number of days during the reporting month when the samples were collected, analyzed and reported.

b. The daily maximum discharge means the total discharge by weight, or concentration if specified, during any calendar day.

c. The Regional Administrator is defined as the Region V Administrator, U.S. EPA, located at 230 South Dearborn, 13th Floor, Chicago, Illinois, 60604.

d. The Michigan Water Resources Commission is located in the STEVENS T. MASON BUILDING. The mailing address is P.O. Box 30028, Lansing, Michigan, 48909.

e. The Chief of the Surface Water Quality Division's mailing address is P.O. Box 30028, Lansing, Michigan, 48909.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(h) of the Act, under which such procedures may be required.



PART I

Section B.

5. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The dates the analyses were performed;
- c. The person(s) who performed the analyses;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Michigan Water Resources Commission.



PART I

C. SCHEDULE OF COMPLIANCE

1. Prior to the commencement of discharge, the permittee shall notify the Plainwell District Supervisor of the Surface Water Quality Division.
2. Prior to construction of the proposed treatment system, the permittee shall receive approval from the Plainwell District Supervisor of the Surface Water Quality Division for the basis of design and plans and specifications. Prior to discharge, the permittee shall receive approval from the Plainwell District Supervisor for an operations and maintenance manual, as required by Part I.A.2.
3. The permittee shall submit the analytical results of the Short Term Waste Characterization Study requirements specified in Part I.A.3, within ninety (90) days of initiating a discharge from outfall 00A.
4. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to the Plainwell District Supervisor of the Surface Water Quality Division either a report of progress or, in the case of specific actions being required by identified dates, a written statement of compliance or noncompliance. In the latter case, the statement shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement. Failure to submit the written statement is just cause to pursue enforcement action pursuant to the Commission Act and the Part 21 Rules.



PART II

A. MANAGEMENT REQUIREMENTS

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of Public Acts 245, of 1929, as amended, and/or PL 92-500, as amended, and constitutes grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of an application for permit renewal.

2. Change of Conditions

Any anticipated facility expansion, production increases, or process modification which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Plainwell District Supervisor of the Surface Water Quality Division. Following such notice, the permit may be modified to specify and limit any pollutant not previously limited.

3. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of concentrated solutions, acids, alkalies, salts, oils, or other polluting materials in accordance with the requirements of the Michigan Water Resources Commission Rules, Part 5. This requirement is included pursuant to Section 5 of the Michigan Water Resources Commission Act 245, P.A. of 1929, as amended, and the Part 5 Rules of the General Rules of the Commission.

4. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified by the Michigan Water Resources Commission, as required by Section 6a of the Michigan Act.

5. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Plainwell District Supervisor of the Surface Water Quality Division with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. A description of the discharge and cause of noncompliance; and
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.



PART II

Section A.

6. Spill Notification

The permittee shall immediately report any spill or loss of any product, by-product, intermediate product, oils, solvents, waste material, or any other polluting substance which occurs to the surface waters or groundwaters of the state by calling the Department of Natural Resources 24-hour Emergency Response telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-8166); and the permittee shall within ten (10) days of the spill or loss, provide the state with a full written explanation as to the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken, and schedule of implementation. This requirement is included pursuant to Section 5 of the Michigan Water Resources Commission Act 245, P.A. of 1929, as amended.

7. Facility Operation

The permittee shall at all times properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

8. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

9. By-Passing

Any diversion from or by-pass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life, personal injury, or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Plainwell District Supervisor of the Surface Water Quality Division and the Regional Administrator, in writing, of such diversion or by-pass.

10. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. Provide an alternative power source sufficient to operate facilities utilized by permittee to maintain compliance with the effluent limitations and conditions of this permit which provision shall be indicated in this permit by inclusion of a specific compliance date in each appropriate "Schedule of Compliance for Effluent Limitations".
- b. Upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.



PART II

Section A.

11. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters, or the entry of toxic or harmful contaminants thereof onto the groundwaters in concentrations or amounts detrimental to the groundwater resource.

12. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset shall notify the Plainwell District Supervisor of the Surface Water Quality Division by telephone within 24 hours of becoming aware of such conditions and within five (5) days, provide in writing, the following information:

- a. That an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. That the permitted wastewater treatment facility was, at the time, being properly operated;
- c. That the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

13. Any requirement of this permit which is included under the unique terms of the Water Resources Commission, Act 245, P.A. of 1929, as amended, and rules promulgated thereunder, is not enforceable under the Federal Clean Water Act regulations.



PART II

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Executive Secretary of the Michigan Water Resources Commission, the Regional Administrator and/or their authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Plainwell District Supervisor of the Surface Water Quality Division and the Regional Administrator.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act and Rule 2128 of the Water Resources Commission Rules, Part 21, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State Water Pollution Control Agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Sections 7 and 10 of the Michigan Act.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully, all relevant facts; or
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.



PART II

Section B.

5. Toxic Pollutants

Notwithstanding Part II.B.4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "By-Passing" (Part II.A.9, pursuant to 40 CFR 122.41(m)) and "Upset" (Part II.A.12, pursuant to 40 CFR 122.41(n)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond his control, such as accidents, equipment breakdowns, or labor disputes.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Act except as are exempted by federal regulations.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals from other units of government as may be required by law.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

11. Notice to Public Utilities (Miss Dig)

The issuance of this permit does not exempt the permittee from giving notice to public utilities and complying with each of the requirements of Act 53 of the Public Acts of 1974, being sections 460.701 to 460.718 of the Michigan Compiled Laws, when constructing facilities to meet the terms of this permit.



STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION

THOMAS J. ANDERSON
ARLENE J. FLUHARTY
JRDON E. GUYER
KERRY KAMMER
O. STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE



JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
P.O. BOX 30028
LANSING, MI 48909

DAVID F. HALES, Director

May 5, 1989

RECEIVED

MAY 8 1989

ENVIRONMENTAL
AFFAIRS

CERTIFIED MAIL

Indiana Michigan Power Company
One Summit Square
P.O. Box 60
Fort Wayne, Indiana 46801

Gentlemen:

SUBJECT: NPDES Permit No. MI0005827
Cook Nuclear Plant
Bridgman, Michigan

Your National Pollutant Discharge Elimination System (NPDES) Permit has been processed in accordance with appropriate state and federal regulations.

It contains the requirements necessary for you to comply with state and federal water pollution control laws.

REVIEW THE PERMIT EFFLUENT LIMITS AND PERFORMANCE SCHEDULES CAREFULLY. These are subject to the criminal and civil enforcement provisions of both state and federal law. Permit violations are audited by the United States Environmental Protection Agency and may appear in a published quarterly noncompliance report made available to agencies and the public.

Your monitoring and reporting responsibilities must be complied with in accordance with this permit. If applicable, monthly operating report forms will be transmitted to you in the near future. These reports are to be submitted monthly or otherwise as required by your NPDES permit.

Any reports, notifications, and questions regarding the attached permit or NPDES program should be sent to the following address:

Fred Morley, District Supervisor
621 North Tenth Street
P.O. Box 355
Plainwell, Michigan 49080
Telephone: (616) 685-9886



Indiana Michigan Power Company

Page 2

May 5, 1989

NOTE: All references within this permit made to the Water Quality Division or Chief of the Water Quality Division are to refer to the Surface Water Quality Division or Chief of the Surface Water Quality Division, respectively.

Sincerely,

William E. McCracken

William E. McCracken, P.E.
Chief, Permits Section
Surface Water Quality Division
517-373-8088

Enclosure: Permit

cc: EPA-Region V (2)

Files

Mr. Steve Eldredge, Planning and Special Programs Section

Mr. Fred Morley - Plainwell District (2)

Mr. Paul Blakeslee, Regional Supervisor, Region III

Compliance and Enforcement, SWQD

208 Agency - Southwest Michigan Regional Planning Commission

Data Entry, SWQD

Point Source Studies (Grand Rapids District Office)



PERMIT No. MI0005827

MICHIGAN WATER RESOURCES COMMISSION
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; the "Act"), and the Michigan Water Resources Commission Act, as amended, (Act 245, Public Acts of 1929, as amended, the "Michigan Act"),

Indiana Michigan Power Company
One Summit Square, P.O. Box 60
Fort Wayne, Indiana 46801

is authorized to discharge from a facility located at

Cook Nuclear Plant
One Cook Place
Bridgman, Michigan 49106

designated as IN MI Power Co-Cook Plt

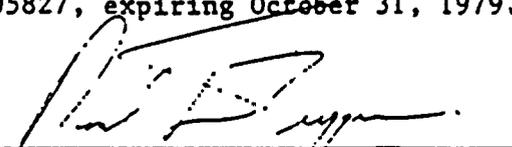
to the receiving water named Lake Michigan in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

This permit takes effect immediately upon the date of issuance. Any person who feels aggrieved by this permit may file a sworn petition with the Commission, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Commission may reject any petition filed more than 60 days after issuance as being untimely. Upon granting of a contested case to the applicant, the Commission shall review the permit to determine which contested term shall be stayed until the Commission takes its final action. All other conditions of the permit remain in full effect. If the contested condition is a modification of a previous permit condition and the Commission determines the contested condition shall be stayed, then such previous condition remains in effect until the Commission takes final action. During the course of any administrative proceeding brought by a person other than the applicant, the conditions of this permit will remain in effect, unless the Commission determines otherwise.

This permit and the authorization to discharge shall expire at midnight August 31, 1990. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Michigan Water Resources Commission no later than 180 days prior to the date of expiration.

This permit is based on an application submitted on May 4, 1979, as amended, and shall supersede any and all Orders of Determination, Stipulation, Final Orders of Determination, or NPDES permits previously adopted by the Michigan Water Resources Commission.

Issued this 19th day of September, 1985, and modified this 2nd day of April 1987, and modified this 20th day of April, 1989, by the Michigan Water Resources Commission superseding NPDES Permit No. MI0005827, expiring October 31, 1979.


Paul D. Zugger
Executive Secretary



PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Final Effluent Limitations - Outfalls 001, 002 & 003 (noncontact cooling water and low volume wastes)

During the period beginning on the effective date of this permit and lasting until permit expiration, the permittee is authorized to discharge a maximum of three billion two hundred ninety eight million five hundred eighty three thousand two hundred (3,298,583,200) gallons per day* of noncontact cooling water consisting of condenser cooling water and low volume wastes consisting of steam generator blowdown, heating boiler blowdown and filter backwash through outfalls 001, 002 and 003 to Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	lbs/day		Other Limitations		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow (MGD)					Daily	Report Total Daily Flow
Temperature (°F)						
Intake					Daily	3 instantaneous readings equally spaced over a 24-hr period
Discharge**					Daily	
Heat Addition (BTU/hr)				15.5 x 10 ⁹	Daily	Calculation
Total Residual Chlorine (TRC)***				0.1 mg/l	5 x weekly	3 grab samples equally spaced during discharge of chlorine
Chlorine Discharge Time				30 min./day	5 x weekly	Report discharge time
Outfall Observation****					Daily	Visual

* This flow is not to be considered as a limitation on either the quantity or rate over time of discharge.

** The discharge, after mixing, shall not increase the temperature of Lake Michigan more than 3°F above the existing natural temperature or above the following monthly maximum temperatures:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
45	45	45	55	60	70	80	80	80	65	60	50

***The permittee may use dechlorination techniques to achieve the applicable limitations using sodium thiosulfate or sodium sulfite or other dechlorinating agents approved by the Chief of the Surface Water Quality Division as dechlorination agents. The quantity of reagent used shall be limited to 1.5 times the stoichiometric amount needed for dechlorination of applied chlorine. The permittee shall report monthly the quantity of each dechlorination reagent used per day.



Part I-A-1. (continued)

****Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits) shall be reported immediately to the District Office of the Surface Water Quality Division followed with a written report within 5 days detailing the findings of the investigation and the steps taken to correct the condition.

a. The term noncontact cooling water shall mean water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product.

b. The pH shall not be less than 6.0 nor greater than 9.0. The pH shall be monitored as follows: weekly; grab sample.

c. The receiving water shall contain no unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits in quantities which are or may become injurious to any designated use as a result of this discharge.

d. Samples, measurements and/or observations taken in compliance with the monitoring requirements above shall be taken as follows: intake - in the intake forebay; discharge - in Unit 1 and Unit 2 discharge bays for Outfalls 001 and 002, respectively. The monitoring requirements specified above do not apply for Outfall 003 since this discharge will be regulated by Outfalls 001 and 002.

e. In the event the permittee shall require the discharge of water treatment additives in addition to any previously approved by the Chief of the Surface Water Quality Division, the permittee shall notify the Division Chief. Written approval from the Chief of the Surface Water Quality Division to discharge such additives at specified levels shall be obtained prior to discharge by the permittee. The permit will be modified in accordance with the requirements of Part II, Section B-4 if a constituent of the additive or additives requires limiting.



Final Effluent Limitations - Outfalls 00A and 00B (steam generator blowdown)

During the period beginning on the effective date of this permit and lasting until permit expiration, the permittee is authorized to discharge a maximum of eight hundred sixty-four thousand (864,000) gallons per day* of low volume wastes consisting of steam generator blowdown from each of the internal outfalls 00A and 00B through outfalls 001, 002 and 003 to Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Limitations		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow (MGD)					Per Occurrence	Report total daily flow
Total Suspended Solids (mg/l)			30	100	Weekly	Grab

This flow is not to be considered as a limitation on either the quantity or rate over time of discharge.

- a. Samples, measurements and/or observations taken in compliance with the monitoring requirements above shall be taken on both outfalls 00A and 00B prior to mixing with noncontact cooling water in the intake forebay (see figure 1 on page 7 of 12).
- b. In the event the permittee shall require the discharge of water treatment additives, the permittee shall notify the Chief of the Surface Water Quality Division. The permittee shall obtain written approval from the Chief of the Surface Water Quality Division to discharge such additives at a specified level. The permit may be modified in accordance with the requirements of Part. II, Section 8-4 if a constituent of the additive or additives requires limiting.



Final Effluent Limitations - Outfall 00C (heating boiler blowdown)

During the period beginning on the effective date of this permit and lasting until permit expiration, the permittee is authorized to discharge a maximum of nineteen thousand (19,000) gallons per day* of low volume wastes consisting of heating boiler blowdown from the internal outfall 00C through outfalls 001, 002 and 003 to Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Limitations		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow (MGD)					Per Occurrence	Report total daily flow
Total Suspended Solids (mg/l)			30	100	Per Occurrence**	Grab

This flow is not to be considered as a limitation on either the quantity or rate over time of discharge.

**Total Suspended Solids are to be monitored once per occurrence or weekly if the heating boiler is operated continuously for periods greater than one week.

a. Samples, measurements and/or observations taken in compliance with the monitoring requirements above shall be taken after the heating boilers and prior to the intake forebay (see figure 1 on page 7 of 12).

b. In the event the permittee shall require the discharge of water treatment additives, the permittee shall notify the Chief of the Surface Water Quality Division. The permittee shall obtain written approval from the Chief of the Surface Water Quality Division to discharge such additives at a specified level. The permit may be modified in accordance with the requirements of Part II, Section 3-4 if a constituent of the additive or additives requires limiting.



4. Final Effluent Limitations - Outfall OOF (filter backwash)

During the period beginning on the effective date of this permit and lasting until permit expiration, the permittee is authorized to discharge a maximum of five hundred eighty-three thousand two hundred (583,200) gallons per day* of low volume wastes consisting of filter backwash from internal outfall OOF through outfalls 001, 002, and 003 to Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	<u>kg/day (lbs/day)</u>		<u>Other Limitations</u>		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>		
Flow (MGD)					Daily	Report total daily flow
Total Suspended Solids (mg/l)			30	100	Weekly	Grab
Oil and Grease (mg/l)**				15	Monthly	Grab

*This flow is not to be considered as a limitation on either quantity or rate over time of discharge.

**After one year of monitoring for oil and grease, the permittee may attempt to demonstrate that further monitoring and limits for oil and grease for internal OOF is no longer necessary. Upon successful demonstration by the permittee, this monitoring may be deleted from the permit. Any submittals shall be to the Chief of the Surface Water Quality Division.

a. Samples, measurements and observations taken in compliance with the monitoring requirements above shall be taken prior to mixing with noncontact cooling water in intake forebay (see figure 1 on page 7 of 12):

b. In the event the permittee shall require the discharge of water treatment additives in addition to any previously approved by the Chief of the Surface Water Quality Division, the permittee shall notify the Division Chief. Written approval from the Chief of the Surface Water Quality Division to discharge such additives at specified levels shall be obtained prior to discharge by the permittee. The permit will be modified in accordance with the requirements of Part II, Section B-4 if a constituent of the additive or additives requires limiting.



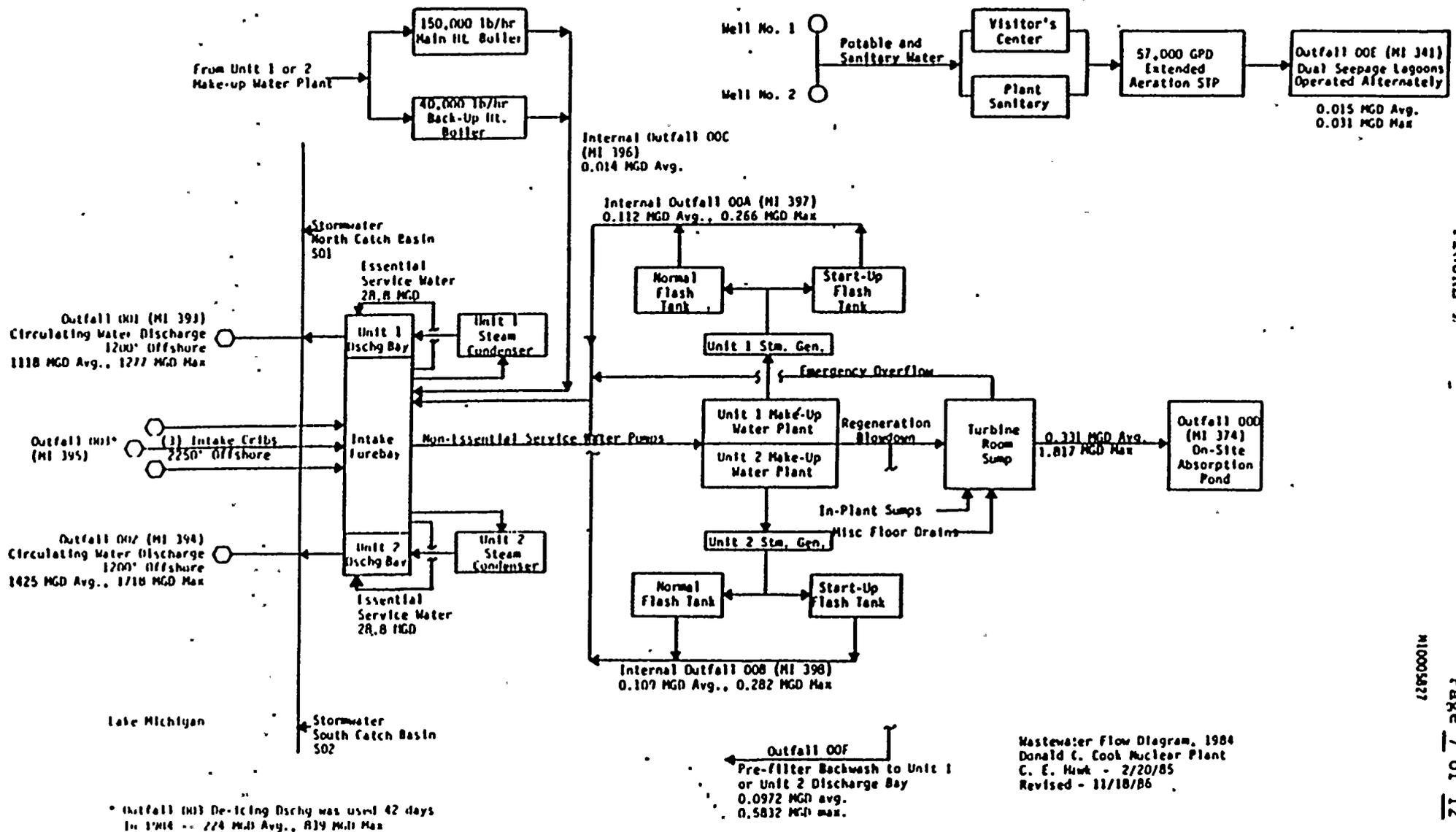


FIGURE 1.

M10004877

Wastewater Flow Diagram, 1984
 Donald C. Cook Nuclear Plant
 C. E. Hawk - 2/20/85
 Revised - 11/18/86

* Outfall (MI) De-icing Disch. was used 42 days in 1984 -- 274 MGD Avg., 834 MGD Max



5. Final Effluent Limitations - Intake Screen Backwash

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge an unspecified amount of intake screen backwash to Lake Michigan. The Company shall collect and remove debris accumulated on the intake trash bars and dispose of such material on land in an appropriate manner.

6. Final Effluent Limitations

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee shall not discharge any polychlorinated biphenyls to receiving waters of the State of Michigan as a result of plant operations.

7. Cooling Water Intakes

The permittee shall submit to the Chief of the Surface Water Quality Division a detailed study plan and time schedule for conducting environmental monitoring to determine the effects of the cooling water intake and obtain his approval thereof on or before NA--completed. The studies shall be adequate to demonstrate if the existing cooling water intake design, location, construction, and capacity reflects the best technology available for minimizing adverse environmental impact in accordance with Section 316(b), Public Law 92-500. The study shall be completed and the report thereon submitted on or before NA.

If, on the basis of the study report and applicable standards established pursuant to Section 316(b) of Public Law 92-500, the Commission determines that the intake structures do not reflect the best technology available for minimizing adverse environmental impact, it will so notify the company, specifying the reason(s) for its determination, and the company shall submit to the Chief of the Surface Water Quality Division, within 90 days of such notification, its plan and construction time schedule for minimizing the environmental impact of the intake structure.

8. Special Condition

The Nuclear Regulatory Commission is responsible for regulating discharges of radioactive materials.



9. Special Condition

This permit may be modified or, alternatively, revoked and reissued to comply with any applicable standard(s) or limitation(s) promulgated under Section 301(b)(2)(c)(d), 304(b)(2) and 307(a)(2) of the Act, if the effluent standard(s) or limitation(s) so promulgated:

- a. is(are) either different in condition or more stringent than any effluent limitation in the permit; or
- b. control(s) any pollutant not limited in the permit.

10. Special Condition - Notification Requirement

The discharger shall notify the Chief of the Surface Water Quality Division, in writing, within 10 days of knowing, or having reason to believe, that a change in facility operation, maintenance, or construction has resulted or will result in the discharge of:

1. Detectable levels* of chemicals on the current Michigan Critical Materials Register or priority pollutants or hazardous substances set forth in 40 CFR Vol. 48, No. 64, April 1, 1983, Part 122.21, Appendix D, pp. 14176-14177 which were not acknowledged in the application** or listed in the application at less than detectable levels.
2. Detectable levels* of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information.
3. Any chemical at levels greater than five times the average level reported in the application**.

Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the schedule of compliance.

*The detectable level shall be defined as the Method Detection Limit (MDL) as given in Appendix B to Part 136, Federal Register, Vol. 49, No. 209, October 26, 1984, pp. 43430-31.

**The application received May 4, 1979 and updated April 26, 1985.



PART I

MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting: A = applicable to your facility; NA = not applicable to your facility

A a. MOR Submittal Requirements - The permittee shall submit Monthly Operating Report (MOR) forms to the Data Center of the Michigan Department of Natural Resources for each calendar month of the authorized discharge period(s). The MOR's shall be postmarked no later than the 10th day of the month following each month of the authorized discharge period(s).

NA b. Retained Self-Monitoring Requirements - The permittee shall maintain a year-to-date log of retained self-monitoring results and provide such log for inspection to the staff of the

- (1.) Surface Water Quality Division of the Michigan Department of Natural Resources.
- (2.) Environmental Health Services Division, Michigan Department of Public Health
- (3.) Northern Peninsula Division, Michigan Department of Public Health
- (4.) Division of Health Facility Licensing & Certification, Michigan Department of Public Health

upon request.

The permittee shall certify, in writing, to the Chief of the Surface Water Quality Division of the Department of Natural Resources in accordance with the Schedule of Compliance Part I, C-NA, that:

- (1.) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained.
- (2.) the flow rate(s) (if part of retained self-monitoring results) from all outfalls have been substantially the same as the flow rate(s) authorized by this permit or if
- (3.) the flow rate(s) (if part of retained self-monitoring results) is (are) substantially different from the flow rate(s) authorized by this permit and the permittee shall provide reasons for the difference in flow rates.

A c. Groundwater Monitoring - The permittee shall submit Monthly Operating Report (MOR) forms to the Data Center of the Michigan Department of Natural Resources in accordance with the monitoring requirements set forth in Part III. The MOR's shall be postmarked no later than the 10th day of the month following each completed report period.

NA d. First Permit - Existing or Proposed Facility - Upon issuance of the first permit for an existing or proposed facility the permittee is exempt from submitting MOR's for a period of ninety (90) days from the date the permit is issued.

A e. Permit Reissuance or Modification - For any parameter added to the monitoring requirements as a result of permit reissuance or modification of the current permit, the permittee will be exempt from submitting MOR data for that parameter for a period of ninety (90) days from the date the permit is issued.



3. Definitions

a. The monthly average discharge is defined as the total discharge by weight, or concentration if specified, during the reporting month divided by the number of days in the reporting month that the discharge from the production or commercial facility occurred. When less than daily sampling occurs, the monthly average discharge shall be determined by the summation of the measured daily discharges by weight, or concentration if specified, divided by the number of days during the reporting month when the samples were collected, analyzed and reported.

b. The daily maximum discharge means the total discharge by weight, or concentration if specified, during any calendar day.

c. The Regional Administrator is defined as the Region V Administrator, U.S. EPA, located at 230 South Dearborn, 13th Floor, Chicago, Illinois 60606.

d. The Michigan Water Resources Commission is located in the Stevens T. Mason Building. The mailing address is Box 30028, Lansing, Michigan 48909.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(h) of the Act, under which such procedures may be required.

5. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The dates the analyses were performed;
- c. The person(s) who performed the analyses;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses.



6. Additional Monitoring by Permittee

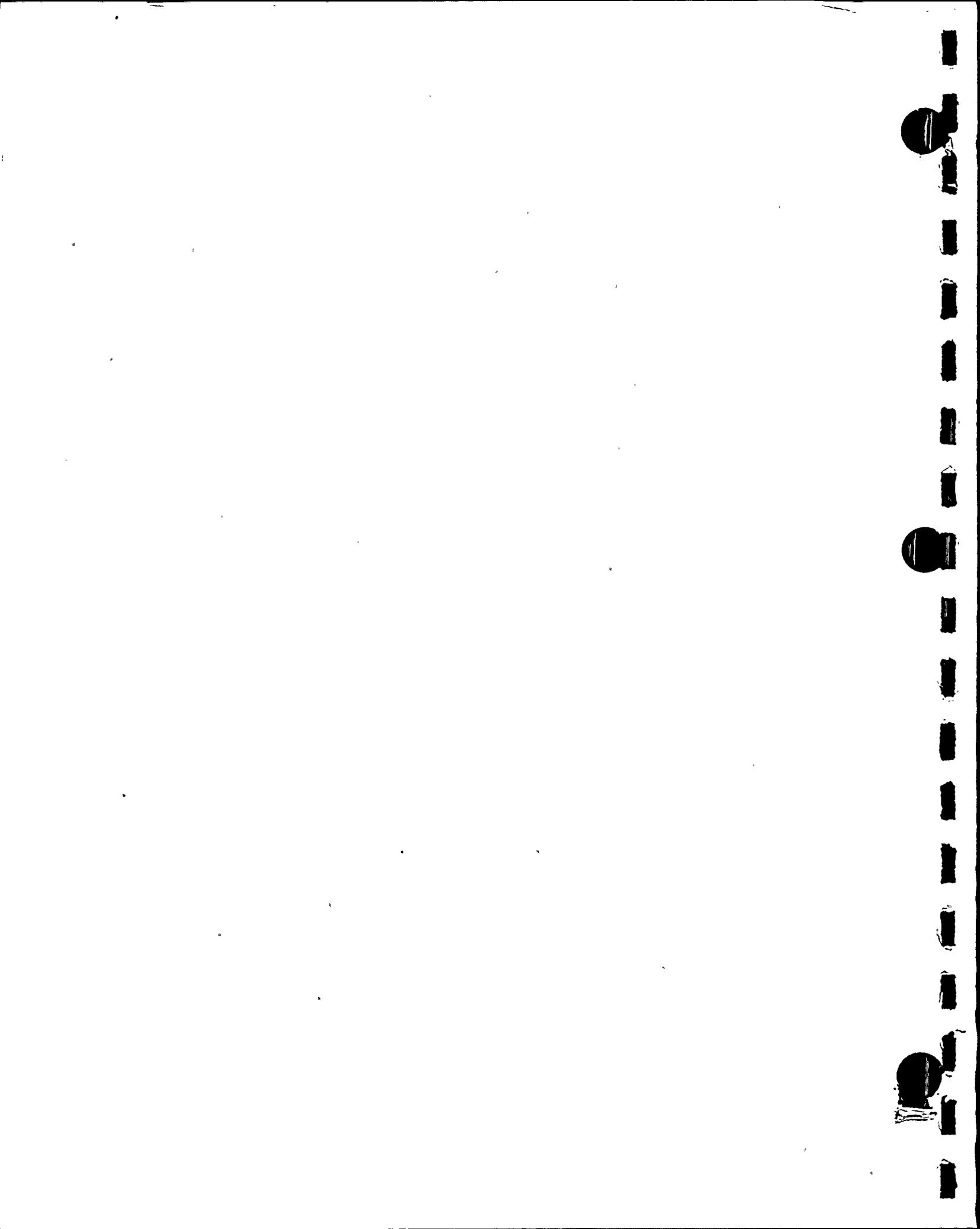
If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monthly Operating Report. Such increased frequency shall also be indicated.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Michigan Water Resources Commission.

C. SCHEDULE OF COMPLIANCE

1. The permittee shall continue to operate the installed facilities to achieve the effluent limitations specified for outfalls 001, 002.
2. The permittee shall comply with the requirements of Section 10, Part II-A in accordance with the following:
 - a. Submit plans for approval to the Chief of the Surface Water Quality Division necessary to comply with the primary power provision of Section 10 in Part II on or before NA.
 - b. The permittee shall comply with the requirements of items 10a or 10b contained in Part II on or before NA. Notwithstanding the preceding sentence, the permittee shall at all times halt, reduce or otherwise control production in order to protect the waters of the State of Michigan upon reduction or loss of the primary source of power.
3. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written statement of compliance or noncompliance. In the latter case, the statement shall include the cause of noncompliance, any remedial actions taken and the probability of meeting the next scheduled requirement. Failure to submit the written statement is just cause to pursue enforcement action pursuant to the Commission Act and the Part 21 Rules.



PART II

A. MANAGEMENT REQUIREMENTS

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of Public Acts 245 of 1929, as amended, and/or PL 92-500, as amended, and constitutes grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of an application for permit renewal.

2. Change of Conditions

Any anticipated facility expansion, production increases, or process modification which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutant not previously limited.

3. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of concentrated solutions, acids, alkalies, salts, oils, or other polluting materials in accordance with the requirements of the Michigan Water Resources Commission Rules, Part 5. This requirement is included pursuant to Section 5 of the Michigan Water Resources Commission Act, 1929 PA 245, as amended, and the Part 5 rules of the General Rules of the Commission.

4. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified by the Michigan Water Resources Commission, as required by Section 6a of the Michigan Act.

5. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Chief of the Surface Water Quality Division with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. A description of the discharge and cause of noncompliance; and



- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

6. Spill Notification

The permittee shall immediately report any spill or loss of any product, by-product, intermediate product, oils, solvents, waste material, or any other polluting substance which occurs to the surface waters or groundwaters of the state by calling the Department of Natural Resources 24-hour Emergency Response telephone number 1-800-292-4706; and the permittee shall within ten (10) days of the spill or loss, provide the state with a full written explanation as to the cause and discovery of the spill or loss, cleanup and recovery measures taken, preventative measures to be taken, and schedule of implementation. This requirement is included pursuant to Section 5 of the Michigan Water Resources Commission Act, 1929 PA 245, as amended.

7. Facility Operation

The permittee shall at all times properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

8. Adverse Impact.

The permittee shall take all reasonable steps to minimize any adverse impact to the surface or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

9. By-Passing

Any diversion from or by-pass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life, personal injury, or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Michigan Water Resources Commission and the Regional Administrator, in writing, of such diversion or by-pass.

10. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. Provide an alternative power source sufficient to operate facilities utilized by permittee to maintain compliance with the effluent limitations and conditions of this permit which provision shall be indicated in this permit by inclusion of a specific compliance date in each appropriate "Schedule of Compliance for Effluent Limitations".



- b. Upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

11. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters, or the entry of toxic or harmful contaminants thereof onto the groundwaters in concentrations or amounts detrimental to the groundwater resource.

12. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset shall notify the Chief of the Surface Water Quality Division by telephone within 24 hours of becoming aware of such conditions and within five (5) days, provide in writing, the following information:

- a. That an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. That the permitted wastewater treatment facility was, at the time, being properly operated;
- c. That the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with his permit.

In any enforcement proceedings, the permittee seeking to establish the occurrence of an upset, has the burden of proof.

13. Any requirement of this permit which is included under the unique terms of Michigan, the Water Resources Commission, Act 245, P.A.1929, as amended, and rules promulgated thereunder, is not enforceable under the Federal Clean Water Act regulations.



RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Executive Secretary of the Michigan Water Resources Commission, the Regional Administrator and/or their authorized representatives, upon the presentation of the credentials:

- a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Michigan Water Resources Commission and the Regional Administrator.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act and Rule 2128 of the Water Resources Commission Rules, Part 21, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State Water Pollution Control Agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Sections 7 and 10 of the Michigan Act.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully, all relevant facts; or
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.



5. Toxic Pollutants

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "By-Passing" (Part II, A-9) and "Power Failures" (Part II, A-10), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond his control, such as accidents, equipment breakdowns, or labor disputes.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Act except as are exempted by federal regulations.

- 8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals from other units of government as may be required by law.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

11. Notice to Public Utilities (Miss Dig)

The issuance of this permit does not exempt the permittee from giving notice to public utilities and complying with each of the requirements of Act 53 of the Public Acts of 1974, being sections 460.701 to 460.718 of the Michigan Compiled Laws, when constructing facilities to meet the terms of this permit.



PERMIT CONDITIONS

PART III

A. GROUNDWATER DISCHARGE AUTHORIZATION

The permittee is authorized to discharge from its wastewater treatment facility to the groundwaters of the state in accordance with the conditions below. This authorization shall continue until the Michigan Water Resources Commission makes its final determination on a state groundwater discharge permit.

B. GROUNDWATER DISCHARGE REQUIREMENTS

During the period beginning on the date of issuance of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge process wastes and sanitary wastes to the groundwater. Such discharges shall be monitored by the permittee as specified below:

Process wastes shall be disposed of into the ground in such a manner and by means of such facilities and at such location that they shall not injuriously affect public health, welfare, or commercial, industrial, domestic, agricultural, recreational, or other uses of the underground waters.

Monitoring requirements for boiler water treatment systems process water (water softener, clarifiers, make-up demineralizers) and boiler cleaning water prior to discharge into the ground.

<u>PARAMETER TO BE MEASURED</u>	<u>FREQUENCY</u>	<u>TYPE OF SAMPLE</u>
Flow	Continuous	
pH	Continuous	Daily maximum, minimum
Cadmium	At times of boiler cleaning water discharge	Grab
Oil & Grease	Weekly	Grab
Sulfate (SO ₄)	At all times when regeneration of ion exchange resins occurs	24-Hr. Composite
Chloride (CL)	Weekly	24-Hr. Composite
Total Phosphorus	Weekly	24-Hr. Composite
Chemical Oxygen Demand	Weekly	24-Hr. Composite
Total Dissolved Solids	At all times when regeneration of ion exchange resins occurs	24-Hr. Composite

Monitoring requirements for sanitary wastewaters prior to discharge into the ground:

<u>PARAMETER TO BE MEASURED</u>	<u>FREQUENCY</u>	<u>REPORT</u>
Flow	Continuous	
State which seepage area is being utilized	List when seepage areas are alternated	List beginning and ending date and time of use of each seepage area



Part III-B (continued)

Monitoring requirements for groundwater collected in monitoring wells:

<u>PARAMETER TO BE MEASURED</u>	<u>FREQUENCY</u>	<u>TYPE OF SAMPLE</u>
Record static water elevation	Quarterly	Reading at time of sampling
pH	Quarterly	Grab
Total Chromium (Cr)	Quarterly	Grab
Copper (Cu)	Quarterly	Grab
Sulfate (SO ₄)	Quarterly	Grab
Chloride (Cl)	Quarterly	Grab
Hardness	Quarterly	Grab
Nitrate-Nitrogen as N	Quarterly	Grab
Sodium (Na)	Quarterly	Grab
Polychlorinated Biphenyls	Quarterly	Grab
Chemical Oxygen Demand	Quarterly	Grab
Boron (B)	Quarterly	Grab
Total Phosphorus (P)	Quarterly	Grab
Total Dissolved Solids	Quarterly	Grab
Cadmium	Quarterly	Grab
Oil & Grease	Quarterly	Grab



MIXING ZONE

Facility: Indiana & Michigan Electric Company

<u>Outfall Number</u>	<u>Receiving Water</u>	<u>Discharge Location</u>
001, 002, 003	Lake Michigan	Berrien County, Lake Township (Town 6S, Range 19W) Sections 5, 6, 7 & 8

The mixing zone for purposes of evaluating compliance with the State Water Quality Standards is defined as an area of Lake Michigan equivalent to that of a circle with a radius of 2811 feet (570 acres) centered at the point of discharge.

