

Permit No. NH0001465

Reissue

**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"),

**Public Service Company of New Hampshire
Merrimack Generating Station**

is authorized to discharge from a facility located at

Bow, New Hampshire

to receiving waters named

Merrimack River

in accordance with effluent limitations, monitoring requirements and other conditions set forth
in Parts I, II, and III hereof.

This permit shall become effective on 30 days after the date of signature

This permit and the authorization to discharge shall expire at midnight, October 1, 1980.

Signed this 22 day of June, 1979,



Leslie Carothers, Director
Enforcement Division
U.S. Environmental Protection Agency

A. Effluent Limitations and Monitoring Requirements

1. Except as specified in Paragraphs 1 through 4 herein, the permittee shall not discharge to Merrimack River, a final effluent to which it has added any pollutants.
 - a. Chlorine may be used as a biocide. No other biocide shall be used without explicit approval from the Regional Administrator and the Executive Director. The chlorination cycle shall not exceed two hours in any one day for any one unit and not more than one unit shall be chlorinated at any one time.
 - b. Free Available Chlorine concentration shall be measured downstream of the unit being chlorinated before that stream mixes with any other discharge.
 - c. The discharges shall not jeopardize any Class B use of the Merrimack River and shall not violate applicable water quality standards. Pollutants which are not limited by this permit, but which have been specifically disclosed in the permit application, may be discharged at the frequency and level disclosed in the application, provided that such discharge does not violate Sections 307 or 311 of the Act or applicable water quality standards.
 - d. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of any waste into the said receiving waters except waste that has been treated in such a manner as will not lower the Class B quality or interfere with the uses assigned to said waters by the New Hampshire Legislature (Chapter 311, Laws of 1967).
 - e. All live fish, shellfish, and other aquatic organisms collected or trapped on the intake screens shall be returned to their natural habitat. All solid materials removed from the screens shall have land disposal.
 - f. This permit shall be modified, revoked or reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 207(a)(2) of the Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
 - (2) controls any pollutant not limited by this permit.

If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the Act.

- g. The term "Regional Administrator" means the Regional Administrator of Region I of the U. S. Environmental Protection Agency and the term "Executive Director" means the Executive Director of the New Hampshire Water Supply and Pollution Control Commission.
- h. It has been determined based on engineering judgment that the circulating water intake structure presently employs the best technology available for minimizing adverse environmental impact. Any change in the location, design or capacity of the present structure shall be approved by the Administrator and the Executive Director. The present design shall be reviewed for conformity to regulations pursuant to Section 316(b) of the Act when such are promulgated.

2. During the period beginning on the effective date of this permit and lasting through October 1, 1980, the permittee is authorized to discharge from outfall(s) serial number(s) 003 -- circulating cooling water including ash settling pond discharge -- an effluent that shall not exceed the following limits.

a. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements		
	Daily Avg.	Daily Max.	Other Units (Specify)	Measurement Frequency	Sample Type
Flow-M /Day (MGD)			(286)	Continuous	Daily Average and range
Turbidity			10 JTU		
Oil and Grease			None Visible		
Free Available Chlorine			0.2 mg/l		
			25 JTU		
			None Visible		Daily Observation
			0.5 mg/l		When in use Grab

- b. The permittee shall not at any time cause, directly or indirectly, the maximum temperature rise in the Merrimack River to exceed 5°F, or 1°F when the ambient temperature of the river is 68°F or higher, unless it can be demonstrated to the satisfaction of the New Hampshire Water Supply and Pollution Control Commission and the Environmental Protection Agency that greater rises at various times will not be harmful to fish, other aquatic life, or other uses. Cognizance will be given to reasonable time and distance to allow for mixing of the heated effluent and receiving waters. Such distance required for mixing shall be defined by the New Hampshire Water Supply and Pollution Control Commission from time to time as is necessary to meet the Class B water quality and uses.
- c. The thermal plume shall not interfere with the natural reproductive cycles of the indigenous populations within the water body segment.
- d. The thermal plume shall not interfere with the natural movements and migratory pathways of the indigenous populations within the water body segment.
- e. The permittee shall direct and control the plume in such a way that it does not interfere with the passage of migratory fish.
- f. The pH shall not be less than 6.5 standards units nor greater than 8.0 standard units.
- g. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- h. Samples taken in compliance with the monitoring requirements specified in ² 3.a. & f. above shall be taken prior to the point of discharge of the cooling canal into the Merrimack River.

3. During the period beginning effective date and lasting through October 1, 1980, the permittee is authorized to discharge from outfall serial number 003A -- ash settling pond (discharges occurring during routine operation) an effluent that shall not exceed the following conditions.
Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements			
	Daily Avg. kg/day (lbs/day)	Daily Max. Other Units (Specify)	Daily Avg.	Daily Max	Measurement Frequency	Sample Type
Flow-m /Day (MGD)			(5.0)	(9.0)	Continuous	Daily average and range
Suspended Solids			30.0 mg/l	100.0 mg/l	Weekly*	Grab
Total Copper			1.0 mg/l	1.0 mg/l	Monthly*	Grab
Total Iron			1.0 mg/l	1.0 mg/l	Monthly*	Grab
Oil and Grease		None visible		None Visible	Daily Observation	

- * The sampling during Extraordinary Waste or Chemical Cleaning Waste Discharges will be daily during this type discharge using composite sampling technique.
- b. The pH shall be monitored biweekly with a grab sample during routine operations and continuously during Extraordinary Waste Discharges.
- c. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:
Point of discharge prior to dilution with the circulating cooling water (at the weir).

- e. Non-routine discharges including chemical cleaning operations and other extraordinary waste processing discharges shall occur no more than 30 days during each year. The permittee shall notify the Regional Administrator and the Executive Director at least 72 hours in advance of such operations and furnish an estimate of the length of time over which the operation shall occur.
- f. All routine analyses for each month will grouped and reported on a single discharge monitoring report form. The analytical results for each separate extraordinary discharge shall be reported on a separate discharge monitoring report form.

4. During the period beginning on the effective date of this permit and lasting through October 1, 1980, the permittee is authorized to discharge from outfall serial number 004 -- yard drains from coal storage area -- an effluent that shall not exceed the following conditions.

a. Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	ADDED BY PERMITTEE				<u>Monitoring Requirements</u>	
	Discharge Limitations		Other Units (Specify)		Measurement Frequency	Sample Type
	kg/day Daily Average	(lbs/day) Daily Maximum	Daily Average	Daily Maximum		
Flow-M /Day (MGD)						
Suspended Solids			30.0 mg/l	100.0 mg/l	When in use	Grab
Oil and Grease			None Added	None Added	when in use	Grab

- b. The discharge shall not cause visible discoloration of the receiving water.
- c. The pH shall not be less than 6.5 standard units nor greater than 8.0 standard units and shall be monitored when in use by a grab sample.
- d. There shall be no discharge of floating solids or visible foam in other trace amounts.
- e. Samples taken in compliance with the monitoring requirements specified above shall be taken prior to the point of pipe discharge into the Merrimack River.

5. Biological Monitoring.

a. Impingement Monitoring, Juvenile Anadromous Fish.

(1) American Shad Juveniles:

Juvenile American Shad impingement monitoring at the Merrimack Generating Station shall be reactivated for the period September 15 to October 31, when significant numbers* of American Shad have been restored to the Hooksett Pond reach of the Merrimack River. Impingement monitoring will be conducted for 48 continuous hours per week and will alternate between Units I and II. Continuation of this program beyond the first year of reactivation will be the subject of negotiation between the NHWS&PCC and Regional Administrator, and the permittee, after review of monitoring program results.

The NHWS&PCC, with the aid of its technical staff and on advice of the Fish and Game Department, shall determine when the reactivation of this program is required and will provide the permittee with ample advance notice of the necessity for the program's reactivation. A monitoring program report will be submitted to the NHWS&PCC and the Regional Administrator on an annual basis.

(2) Atlantic Salmon Smolts:

Emigrating Atlantic Salmon smolt impingement monitoring at the Merrimack Generating Station shall be reactivated for the period April 15 to June 15, when significant numbers* of emigrating Atlantic Salmon smolts are expected to pass through the Hooksett Pond reach of the Merrimack River in the vicinity of Merrimack Generating Station. Impingement monitoring will be conducted for 48 continuous hours per week and will alternate between Units I and II. Continuation of this program beyond the first year of reactivation will be the subject of negotiation between the NHWS&PCC and Regional Administrator, and the permittee, after review of monitoring program results.

The NHWS&PCC, with the aid of its technical staff and on advice of the Fish and Game Department, shall determine when the reactivation of this program is required and will provide the permittee with ample advance notice of the necessity for the program's reactivation. A monitoring program report will be submitted to the NHWS&PCC and the Regional Administrator on an annual basis.

* "Significant numbers," as referred to in the first paragraphs of sections a. (1), a. (2), and b, above, will be construed to mean a substantial increase in the population of shad or salmon residing within the Hooksett Pond reach of the Merrimack River or migrating past the Merrimack Generating Station.

b. Pump Entrainment Monitoring, American Shad Ichthyoplankton.

American Shad ichthyoplankton pump entrainment monitoring at the Merrimack Generating Station shall be reactivated for the period June 15 to July 15 when significant numbers* of American Shad have been restored to the Hooksett Pond reach of the Merrimack River. Ichthyoplankton pump entrainment monitoring will be conducted at Unit I for 24 continuous hours, twice per week. Continuation of this program beyond the first year of reactivation will be the subject of negotiation between the NHWS&PCC and Regional Administrator, and the permittee, after review of monitoring program results.

The NHWS&PCC, with the aid of its technical staff and on advice of the Fish and Game Department, shall determine when the reactivation of this program is required and will provide the permittee with ample advance notice of the necessity for the program's reactivation. A monitoring program report will be submitted to the NHWS&PCC and the Regional Administrator on an annual basis.

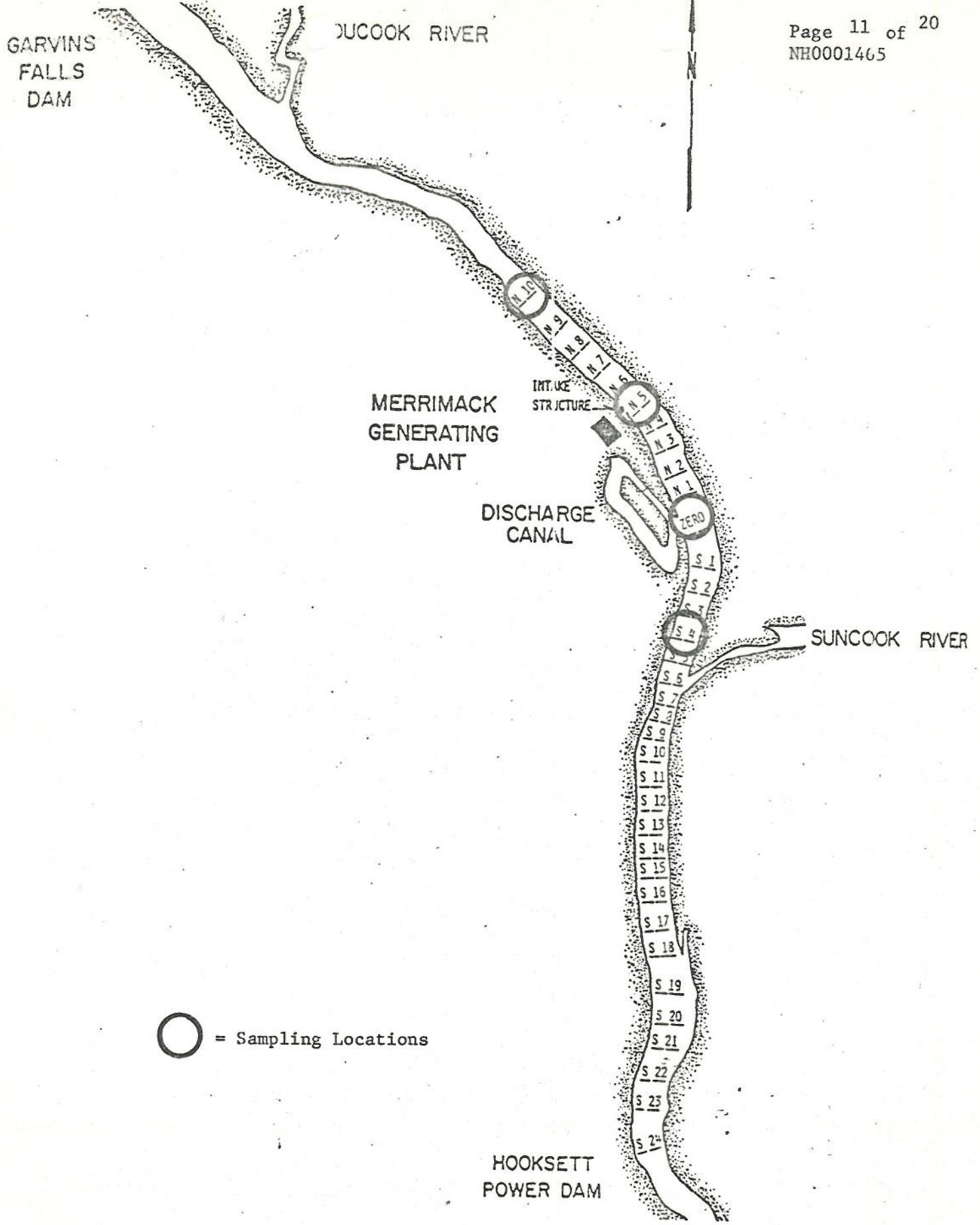


Figure 1. Location of sampling stations. Hooksett Pond, Merrimack River, NH.

6. Temperature Monitoring and Power Spray Module (PSM) Operation.

a. Continuous River Surface Temperature Monitoring.

Continuous river surface temperature monitoring in the vicinity of the Merrimack Generating Station shall be continued on the following basis. Open-river surface-water temperatures will be continuously monitored at control Station N-10, effluent discharge station Zero, and mixing zone Station S-4 Figure 1. The discharge Station Zero temperature monitoring probe will remain in place and in operation year-round. Stations N-10 and S-4 temperature monitoring probes will be removed from the river and from operation in the fall when ambient river water temperatures have dropped below 40°F (4.4°C) and replaced when ambient river water temperatures have risen to above 40°F in the spring. Ambient river water temperatures for removal and installation of the probes are defined as measured at Station N-10 for the fall probe removal and at the Merrimack Station Unit II condenser inlet water box Station N-5, for the spring probe replacement.

Monitoring program data shall be submitted to the NHWS&PCC and the Regional Administrator on an annual basis.

b. Power Spray Module (PSM) Operation.

Power Spray Module operation at the Merrimack Generating Station shall be suspended between October 1 and June 1 provided river flow exceeds 2500 cfs at Garvins Falls and the ambient river temperature is less than 68°F (20°C) and there is no unforeseen reason for cooling module operation within that period. During the period between June 1 and October 1, the PSM system will be operated at maximum capacity when the river temperature exceeds 68°F, regardless of flow conditions, to insure the maximum water cooling effect is maintained. Starting and stopping of the PSM will take place gradually to minimize shock temperature impact upon the aquatic organisms in the Merrimack River.

7. Dissolved Oxygen and pH Monitoring.

- a. The permittee shall continuously monitor the pH of both an ambient river control station and the circulating water discharge. The circulating water discharge shall be monitored at the point of cooling canal discharge into the Merrimack River (in the vicinity of the cooling canal boom and river Station Zero-west). The ambient river control station will be at a Merrimack Station inlet structure (Station N-5).
- b. The permittee shall continuously monitor the dissolved oxygen content of both an ambient river control station and the circulating water discharge. The circulating water discharge shall be monitored at the point of cooling canal discharge into the Merrimack River (in the vicinity of the cooling canal

boom and river Station Zero-west). The ambient river control station will be at a Merrimack Station inlet structure (Station N-5).

- c. Monitoring program data shall be submitted to the NHWS&PCC and the Regional Administrator on an annual basis.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

2. 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 notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

C. 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*

Monitoring results obtained during the previous 3 months shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on July 28, 1979. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and the State at the following addresses:

Environmental Protection Agency
Region I - Permits Branch
P. O. Box 8127
Boston, Massachusetts 02114

New Hampshire Water Supply and
Pollution Control Commission
Prescott Park, 105 Loudon Road
Concord, New Hampshire 03301

3. *Definitions* see attachment

~~a. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.~~

~~b. The "daily maximum" discharge means the total discharge by weight during any calendar day.~~

4. *Test Procedures*

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

5. *Recording of 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 Form (EPA No. 3320-1). 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 State water pollution control agency.

A. MANAGEMENT REQUIREMENTS

1. *Change in Discharge*

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. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES 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 pollutants not previously limited.

2. *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 Regional Administrator and the State 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 steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. *Facilities Operation*

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. *Adverse Impact*

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. *Bypassing*

Any diversion from or bypass 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 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 Regional Administrator and the State in writing of each such diversion or bypass.

6. *Removed Substances*

Solids, sludges, filter backwash, or other pollutants removed in the course of 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.

7. *Power Failures*

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

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such a alternative power source is not in existence, and no date for its implementation appears in Part I,

b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

B. RESPONSIBILITIES

1. *Right of Entry*

The permittee shall allow the head of the State water pollution control agency, 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 discharges 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 Regional Administrator and the State water pollution control agency.

3. *Availability of Reports*

Except for data determined to be confidential under Section 308 of the Act, 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.

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 "Bypassing" (Part II, A-5) and "Power Failures" (Part II, A-7), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

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 is or may be subject under Section 311 of the Act.

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.

PART II

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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 any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

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 circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART III

OTHER REQUIREMENTS