



State of New Jersey

Department of Environmental Protection

Division of Water Quality

P.O. Box 029, Trenton, NJ 08625-029

FAX: (609) 984-7938

Salem Permit Program  
Received

JUL 03 2001

File # \_\_\_\_\_

Robert C. Shinn, Jr.  
Commissioner

DONALD T. DiFRANCESCO  
Acting Governor

June 29, 2001

Dear Interested Party:

Re: PSEG Nuclear LLC  
Salem Generating Station  
Lower Alloways Creek, Salem County  
NJPDES Permit No. NJ0005622

In view of your expressed interest in the above noted subject, enclosed is a copy of the final NJPDES permit renewal for the above referenced facility. This NJPDES permit renewal serves to finalize the December 8, 2000, draft permit action issued by the New Jersey Department of Environmental Protection ("the Department") and includes a Response to Comments document.

This final permit action continues the wetlands restoration and fish ladder related requirements contained in the July 20, 1994, NJPDES permit. Specifically, with reference to the wetlands restoration requirement, PSEG was required to restore a minimum of 10,000 acres of salt marsh wetlands to provide more fish breeding and nursery areas, thereby increasing ecological productivity. To implement these NJPDES permit requirements, PSEG created the Estuary Enhancement Program (EEP). To date, the EEP has restored and/or preserved over 20,500 acres of land in and around the Delaware Estuary, making this the largest privately funded wetlands restoration project in the nation.

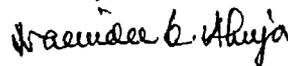
During the public comment period, the Department received extensive written comments as well as public testimony at the January 23 and January 25, 2001, public hearings. Many interested parties commented specifically on the EEP and the wetland restoration requirements. While many commentators praised the environmental benefits of the wetlands restoration program, some commentators expressed specific concern regarding the continued need to use herbicides to meet restoration goals for portions of the Alloways Creek site. Given this concern, the Department would like to inform you of one significant change in the Administrative Record pertaining specifically to this issue that has occurred since the end of the public comment period on March 14, 2001. By way of a letter dated June 8, 2001, PSEG informed the Department of its decision to make certain changes to the restoration program for the Alloways Creek site. Specifically, PSEG stated that it would cease utilizing herbicides for the management of approximately 1,000 acres of the western portion of the Alloways Creek site; retain these 1,000 acres of *Phragmites*-dominated wetlands; and purchase approximately 1,000 additional acres to ensure compliance with the permit conditions. The Department intends to pursue implementation of this decision by PSEG with appropriate refinements, as necessary. This issue is further discussed in the Response 48 included in the enclosed Response to Comments document.

The Department would also like to note that, in response to comments from the US Fish and Wildlife Service, PSEG has agreed to fund the construction of two additional fish ladders in New Jersey, provided suitable sites are available. In addition, PSEG has agreed to fund construction of an artificial reef in New Jersey. These commitments are included as conditions in Part IV of this final permit action.

This NJPDES permit action involves several complex issues and the Department staff will be pleased to provide any additional information that you may need. Please feel free to contact Susan Rosenwinkel of the Bureau of Point Source Permitting-Region 2, if you have any additional questions. Ms. Rosenwinkel may be reached at (609) 292-4860.

On behalf of the Department, I thank you for your interest in the protection of our state's valuable natural resources.

Sincerely,



Narinder K. Ahuja  
Director

Enclosures



State of New Jersey

Department of Environmental Protection

Division of Water Quality

P.O. Box 029 Trenton, NJ 08625-0029

Phone: (609) 292-4860

Fax: (609) 984-7938

Robert C. Shinn, Jr.  
Commissioner

DONALD T. DiFRANCESCO  
Acting Governor

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

R. Edwin Selover  
PSEG SERVICES CORPORATION  
80 PARK PLAZA, T5A  
NEWARK, NJ 07102-4194

JUN 29 2001

Re: Final Surface Water Renewal Permit Action  
Category: B -Industrial Wastewater  
NJPDES Permit No. NJ0005622  
PUBLIC SERVICE ENERGY GROUP NUCLEAR LLC  
Lower Alloways Creek, Salem County

Dear Mr. Selover:

Enclosed is a final New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A.

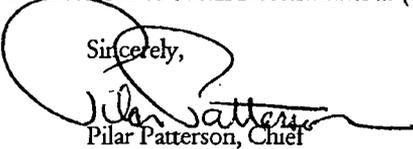
A summary of the significant and relevant comments received on the draft action during the public comment period, the Department's responses, and an explanation of any changes from the draft action have been included in the Response to Comments document attached hereto as per N.J.A.C. 7:14A-15.16.

Any requests for an adjudicatory hearing shall be submitted in writing by certified mail, or by other means which provide verification of the date of delivery to the Department, within 30 days of receipt of this Surface Water Renewal Permit Action in accordance with N.J.A.C. 7:14A-17.2. You may also request a stay of any contested permit condition as per N.J.A.C. 7:14A-17.6 *et seq.* The adjudicatory hearing request must be accompanied by a completed Adjudicatory Hearing Request Form; the stay request must be accompanied by a completed Stay Request Form (forms enclosed).

All monitoring shall be conducted in accordance with 1) the Department's "Field Sampling Procedures Manual" applicable at the time of sampling (N.J.A.C. 7:14A-6.5(b)4), and/or 2) the method approved by the Department in Part IV of the permit. The Field Sampling Procedures Manual is available through Maps and Publications Sales Office; Bureau of Revenue, PO Box 417, Trenton, New Jersey 08625, at (609) 777-1038.

Questions or comments regarding the final action should be addressed to Susan Rosenwinkel at (609) 292-4860

Sincerely,



Pilar Patterson, Chief

Bureau of Point Source Permitting - Region 2

Enclosures  
cc: Permit Distribution List  
Masterfile #: 15646; PI #: 46814

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- B. If you are a person seeking consideration as a party to the action:
1. A statement setting forth each legal or factual question alleged to be at issue;
  2. A statement setting forth the relevance of the legal or factual issue to the permit decision, together with a designation of the specific factual areas to be adjudicated;
  3. A clear and concise factual statement of the nature and scope of your interest which meets the criteria set forth at N.J.A.C. 7:14A-17.3(c)4;
  4. A statement that, upon motion by any party granted by the administrative law judge, or upon order of the administrative law judge's initiative, you shall make yourself, all persons you represent, and all of your officers, directors, employees, consultants, and agents available to appear and testify at the administrative hearing, if granted;
  5. Specific references to the contested permit conditions, as well as suggested revised or alternative permit conditions, including permit denials, which, in your judgment, would be required to implement the purposes of the State Act;
  6. Identification of the basis for any objection to the application of control or treatment technologies, if identified in the basis or fact sheets, and the alternative technologies or combination of technologies which, in your judgment, are necessary to satisfy the requirements of the State Act;
- C. The date you received notification of the final permit decision;
- D. The names and addresses of all persons whom you represent;
- E. A statement as to whether you raised each legal and factual issue during the public comment period in accordance with N.J.A.C. 7:14A-15.13;
- F. An estimate of the amount of time required for the hearing;
- G. A request, if necessary, for a barrier-free hearing location for disabled persons;
- H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of your hearing request to the Office of Administrative Law; and
- I. This form, completed, signed and dated with all of the information listed above, including attachments, to:
1. Office of Legal Affairs  
ATTENTION: Adjudicatory Hearing Requests  
Department of Environmental Protection  
401 East State Street  
PO Box 402, Trenton, New Jersey 08625-0402
  2. Pilar Patterson, Chief  
Bureau of Point Source Permitting – Region 2  
Department of Environmental Protection  
401 East State Street  
PO Box 029, Trenton, New Jersey 08625-0029
  3. Any other person named on the permit (if you are a permittee under that permit).
  4. The permittee(s) (if you are a person seeking consideration as a party to the action).

V. Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Susan Rosenwinkel, Bureau of Point Source Permitting – Region 2

\*For NJPDES permits, the procedures for requesting an adjudicatory hearing on a final permit decision and for the Department's evaluation and processing of such requests are set forth in N.J.A.C. 7:14A-17.

STAY REQUEST AND TRACKING FORM

I. Permit Containing Condition(s) to Be Stayed:

PSEG NUCLEAR LLC

Issuance Date of Final Permit Decision  
06/29/2001

Permit Number  
NJ0005622

II. Person Requesting the Stay(s):

\_\_\_\_\_  
Name/Organization

\_\_\_\_\_  
Name of Attorney (if applicable)

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address of Attorney

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Telephone Number of Attorney

N.J.A.C. 7:14A-17.6 provides for stays of contested permit conditions. In order for the Department to consider a request for stay, the person making the request must submit a written request to the Department by certified mail or other means which provides verification of the date of delivery. In the request for a stay of each permit condition, a written evaluation must be submitted which addresses each of the factors at N.J.A.C. 7:14A-17.6(c). Briefly stated, these factors include: 1) the permittee's ability to comply with the permit condition using existing treatment facilities, 2) the permittee's ability to comply with the permit condition by implementing low cost short-term modifications to the existing treatment facility, 3) the level of pollutant control actually achieved using short term modifications, 4) the cost to comply with the condition and 5) the environmental impacts granting a stay will have on the receiving waterbody.

This completed stay request form, along with the evaluations mentioned above, shall be submitted to both Pilar Patterson, Chief, Bureau of Point Source Permitting - Region 2, Division of Water Quality, Department of Environmental Protection, PO Box 029, Trenton, New Jersey, 08625-0029 and the Office of Legal Affairs, Department of Environmental Protection, PO Box 402, Trenton, New Jersey 08625-0402. A person seeking consideration as party to the action who has requested an adjudicatory hearing in accordance with N.J.A.C. 7:14A-17.2 may also request a stay provided notice of the request is also provided to the permittee(s).

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\*For NJPDES permits, the procedures for requesting a stay of a final permit condition and for the Department's evaluation and processing of such requests are set forth in N.J.A.C. 7:14A-17.

## **Table of Contents**

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This Permit Package Contains the Items Listed Below

1. Cover Letter
2. Table of Contents
3. Response to Comments Document
4. NJPDES Permit Authorization Page
5. Part I NARRATIVE REQUIREMENTS
6. Part II GENERAL REQUIREMENTS: DISCHARGE CATEGORIES
7. Part III LIMITS AND MONITORING REQUIREMENTS
8. Part IV SPECIFIC REQUIREMENTS: NARRATIVE



# NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

**Permit Number: NJ0005622**

**Final: Surface Water Renewal Permit Action**

**Permittee:**

PSEG NUCLEAR LLC  
FOOT OF HANCOCKS BRIDGE ROAD  
LOWER ALLOWAYS CREEK, NJ 08038-0000

**Co-Permittee:**

**Property Owner:**

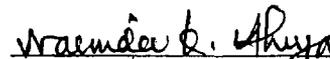
PSEG NUCLEAR LLC  
FOOT OF HANCOCKS BRIDGE ROAD  
LOWER ALLOWAYS CREEK, NJ 08038-0000

**Location Of Activity:**

PSEG NUCLEAR LLC  
FOOT OF HANCOCKS BRIDGE ROAD  
LOWER ALLOWAYS CREEK, NJ 08038-0000

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B -Industrial Wastewater	06/29/2001	08/01/2001	07/31/2006

By Authority of:  
Commissioner's Office

  
DEP AUTHORIZATION  
Narinder Ahuja  
Director  
Division of Water Quality

(Terms, conditions and provisions attached hereto)

Division of Water Quality

## PART I GENERAL REQUIREMENTS: NJPDES

### A. General Requirements of all NJPDES Permits

#### 1. Requirements Incorporated by Reference

- a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.
- b. General Conditions
  - Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
  - Incorporation by Reference N.J.A.C. 7:14A-2.3
  - Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
  - Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
  - Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
  - Inspection and Entry N.J.A.C. 7:14A-2.11(e)
  - Enforcement Action N.J.A.C. 7:14A-2.9
  - Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
  - Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9
  - Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
  - Severability N.J.A.C. 7:14A-2.2
  - Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
  - Permit Actions N.J.A.C. 7:14A-2.7(c)
  - Reopener Clause N.J.A.C. 7:14A-6.2(a)10
  - Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
  - Consolidation of Permit Process N.J.A.C. 7:14A-15.5
  - Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
  - Fee Schedule N.J.A.C. 7:14A-3.1
  - Treatment Works Approval N.J.A.C. 7:14A-22 & 23
- c. Operation And Maintenance
  - Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
  - Proper Operation and Maintenance N.J.A.C. 7:14A-6.12
- d. Monitoring And Records
  - Monitoring N.J.A.C. 7:14A-6.5
  - Recordkeeping N.J.A.C. 7:14A-6.6
  - Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9
- e. Reporting Requirements
  - Planned Changes N.J.A.C. 7:14A-6.7
  - Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
  - Noncompliance Reporting
    - Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
    - Written Reporting N.J.A.C. 7:14A-6.10(c) & (d)
    - N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
  - Duty to Provide Information N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
  - Schedules of Compliance N.J.A.C. 7:14A-6.4
  - Transfer N.J.A.C. 7:14A-6.2(a)8 & 16.2

## PART II

### GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

#### A. Additional Requirements Incorporated By Reference

##### 1. Requirements for Discharges to Surface Waters

- a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.
  - i. Surface Water Quality Standards N.J.A.C. 7:9B-1
  - ii. Water Quality Management Planning Regulations N.J.A.C. 7:15

#### B. General Conditions

##### 1. Scope

- a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

##### 2. Permit Renewal Requirement

- a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.
- b. Submit a complete permit renewal application: 180 days before the Expiration Date.

##### 3. Notification of Non-Compliance

- a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).
- b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

##### 4. Notification of Changes

- a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.
- b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

##### 5. Access to Information

- a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

##### 6. Operator Certification

- a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.
  - i. Notifications shall be submitted to:  
NJDEP  
Examination and Licensing Unit  
P.O. Box 417  
Trenton, New Jersey 08625  
(609)777-1012
- b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

**7. Operation Restrictions**

- a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condition for water or waste, except as specifically authorized by a valid NJPDES permit.

## PART III LIMITS AND MONITORING REQUIREMENTS

### A. 048C SW OUTFALL 48C

#### Location Description

Samples obtained for this internal monitoring point shall be collected after all treatment has been performed but prior to mixing with any circulating water system effluent. The permittee has the ability to route the discharge from 48C to DSN's 481, 482, 484 and/or 485.

#### Discharge Categories

Industrial Wastewater

#### Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	30 MG/L	Monthly Average	2 / Month	Composite	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	100 MG/L	Daily Maximum	2 / Month	Composite	January thru December	Final	
Nitrogen, Ammonia Total (as N)	Effluent Gross Value	35 MG/L	Monthly Average	2 / Month	Composite	January thru December	Final	
Nitrogen, Ammonia Total (as N)	Effluent Gross Value	70 MG/L	Daily Maximum	2 / Month	Composite	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	10 MG/L	Monthly Average	2 / Month	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	15 MG/L	Daily Maximum	2 / Month	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	REPORT MG/L	Monthly Average	2 / Month	Composite	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	50 MG/L	Daily Maximum	2 / Month	Composite	January thru December	Final	

**B. 481A SW OUTFALL 481A****Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
LC50 Statre 96hr Acu Cyprinodon	Effluent Gross Value	50 %EFFL	Daily Minimum	2 / Year	Composite	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**C. 482A SW OUTFALL 482A**

**Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - C - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
LC50 Statre 96hr Acu Cyprinodon	Effluent Gross Value	50 %EFFL	Daily Minimum	2 / Year	Composite	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**D. 483A SW OUTFALL 483A****Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - D - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**E. 484A SW OUTFALL 484A****Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO..

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - E - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
LC50 Statre 96hr Acu Cyprinodon	Effluent Gross Value	50 %EFFL	Daily Minimum	2 / Year	Composite	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**F. 485A SW OUTFALL 485A****Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - F - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
LC50 Statre 96hr Acu Cypriinodon	Effluent Gross Value	50 %EFFL	Daily Minimum	2 / Year	Composite	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**G. 486A SW OUTFALL 486A**

**Location Description**

Samples shall be obtained at the discharge "standpipe" which is a point after combination of the two circulators and introduction of all other wastewater components. Unless service water system is being discharged, the effluent limits of 0.2 mg/L (daily max.) and "monitor only" (monthly average) apply for CPO.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - G - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Minimum	1 / Week	Grab	January thru December	Final	
pH	Intake From Stream	REPORT SU	Daily Maximum	1 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.3 MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	REPORT MG/L	Monthly Average	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.5 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Chlorine Produced Oxidants	Effluent Gross Value	0.2 MG/L	Daily Maximum	3 / Week	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Day	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Daily Maximum	1 / Day	Continuous	January thru December	Final	

**H. 487B SW OUTFALL 487B****Location Description**

Samples shall be obtained from the discharge monitoring point of the #3 Skim Tank. DSN 487B discharges to Zone 5 of the Delaware River

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - H - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Batch	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Batch	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Batch	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Batch	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	REPORT MG/L	Monthly Average	1 / Batch	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	100 MG/L	Daily Maximum	1 / Batch	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	1 / Batch	Grab	January thru December	Final	
Temperature, oC	Effluent Gross Value	43.3 DEG.C	Daily Maximum	1 / Batch	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	REPORT MG/L	Monthly Average	1 / Batch	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	15 MG/L	Daily Maximum	1 / Batch	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	REPORT MG/L	Monthly Average	1 / Batch	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	50 MG/L	Daily Maximum	1 / Batch	Grab	January thru December	Final	

**I. 489A SW OUTFALL 489A****Location Description**

Samples for DSN 489 shall be obtained at the terminus of the oil/water separator. DSN 489 discharges to Zone 5 of the Delaware River.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - 1 - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Monthly Average	1 / Month	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT MGD	Daily Maximum	1 / Month	Calculated	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Daily Minimum	1 / Month	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Daily Maximum	1 / Month	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	100 MG/L	Daily Maximum	1 / Month	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	30 MG/L	Monthly Average	1 / Month	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	10 MG/L	Monthly Average	1 / Month	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	15 MG/L	Daily Maximum	1 / Month	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	REPORT MG/L	Monthly Average	1 / Month	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	50 MG/L	Daily Maximum	1 / Month	Grab	January thru December	Final	

**J. FACA SW OUTFALL FACA**

**Location Description**

Samples collected at DSN's 481A, 482A and 483A shall be reported as a whole to represent the thermal discharge from Unit 1. DSN's 481A, 482A and 483A discharge to Zone 5 of the Delaware River.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - J - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Temperature, oC	Raw Sew/influent	REPORT DEG.C	Monthly Average	Continuous	Continuous	January thru December	Final	
Temperature, oC	Raw Sew/influent	REPORT DEG.C	Daily Maximum	Continuous	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	Continuous	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	46.1 DEG.C	Daily Maximum	Continuous	Continuous	June thru September	Final	
Temperature, oC	Effluent Gross Value	43.3 DEG.C	Daily Maximum	Continuous	Continuous	October thru May	Final	
Temperature, oC	Effluent Net Value	REPORT DEG.C	Monthly Average	1 / Day	Calculated	January thru December	Final	
Temperature, oC	Effluent Net Value	15.3 DEG.C	Daily Maximum	1 / Day	Calculated	January thru December	Final	

**K. FACB SW OUTFALL FACB**

**Location Description**

Samples collected at DSN's 484A, 485A and 486A shall be reported as a whole to represent the thermal discharge from Unit 2. DSN's 484A, 485A and 486A discharge to Zone 5 of the Delaware River.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - K - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Temperature, oC	Raw Sew/influent	REPORT DEG.C	Monthly Average	Continuous	Continuous	January thru December	Final	
Temperature, oC	Raw Sew/influent	REPORT DEG.C	Daily Maximum	Continuous	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	REPORT DEG.C	Monthly Average	Continuous	Continuous	January thru December	Final	
Temperature, oC	Effluent Gross Value	46.1 DEG.C	Daily Maximum	Continuous	Continuous	June thru September	Final	
Temperature, oC	Effluent Gross Value	43.3 DEG.C	Daily Maximum	Continuous	Continuous	October thru May	Final	
Temperature, oC	Effluent Net Value	REPORT DEG.C	Monthly Average	1 / Day	Calculated	January thru December	Final	
Temperature, oC	Effluent Net Value	15.3 DEG.C	Daily Maximum	1 / Day	Calculated	January thru December	Final	

**L. FACC SW OUTFALL FACC**

**Location Description**

Samples collected at DSN's 481-486 shall be reported as a whole to represent the thermal discharge and circulating water system intake flow from the facility as a whole. DSN's 481-486 discharge to Zone 5 of the Delaware River.

**Discharge Categories**

Industrial Wastewater

**Surface Water DMR Reporting Requirements:**

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

**Table III - L - 1: Surface Water DMR Limits and Monitoring Requirements**

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Raw Sew/influent	3024 MGD	Monthly Average	1 / Day	Calculated	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Raw Sew/influent	REPORT MGD	Daily Maximum	1 / Day	Calculated	January thru December	Final	
Thermal Discharge Million BTUs per Hr	Effluent Net Value	REPORT MBTU/HR	Monthly Average	1 / Day	Calculated	January thru December	Final	
Thermal Discharge Million BTUs per Hr	Effluent Net Value	30600 MBTU/HR	Daily Maximum	1 / Day	Calculated	January thru December	Final	

## **PART IV**

# **SPECIFIC REQUIREMENTS: NARRATIVE**

### **Notes and Definitions**

- A. Footnotes**
- B. Definitions**

## Industrial Wastewater

### A. MONITORING REQUIREMENTS

#### 1. Standard Monitoring Requirements

- a. Each analysis required by this permit shall be performed by a New Jersey Certified Laboratory that is certified to perform that analysis.
- b. The Permittee shall perform all water/wastewater analyses in accordance with the analytical test procedures specified in 40 CFR 136 unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.
- c. All sampling shall be conducted in accordance with the Department's Field Sampling Procedures Manual; or an alternate method approved by the Department in writing.
- d. All monitoring shall be conducted as specified in Part III.
- e. All sample frequencies expressed in Part III are minimum requirements. However, if additional samples are taken, analytical results shall be reported as appropriate.
- f. Annual and semi-annual wastewater testing shall be conducted in a different quarter of each year so that tests are conducted in each of the four permit quarters of the permit cycle. Testing may be conducted during any month of the permit quarters.
- g. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

### B. RECORDKEEPING

#### 1. Standard Recordkeeping Requirements

- a. The permittee shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports, and all data used to complete the application for this permit.
- b. Records of monitoring information shall include the date, locations and time of sampling or measurements, the individual who performed the sampling or measurements, the date the samples were collected, the date the samples were analyzed, the individual who performed the analysis, the analytical method used, and the results.
- c. The permittee shall retain copies of all reports required by a NJPDES permit and records of all data used to complete the application for a NJPDES permit for a period of at least 5 years unless otherwise required by 40 CFR Part 503.
- d. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

### C. REPORTING

#### 1. Standard Reporting Requirements

- a. The permittee shall submit all required monitoring results to the DEP on the forms provided to the following addresses:
  - i. NJDEP  
Division of Water Quality  
Bureau of Permit Management  
P.O. Box 029  
Trenton, New Jersey 08625
  - ii. DRBC  
P. O. Box 7360  
West Trenton, New Jersey 08628

- b. If requested by the Water Compliance and Enforcement Bureau, please send the information requested to the following address:
  - i. Southern Bureau of Water Compliance and Enforcement  
One Port Center  
2 Riverside Drive, Suite 201  
Camden, NJ 08103.
- c. For submittal of paper monitoring report forms:
  - i. All monitoring reports shall be signed by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility in accordance with N.J.A.C. 7:14A-6.9.
  - ii. The highest ranking official may delegate responsibility to sign in accordance with NJAC 7:14A-6.9(c).
- d. Monitoring reports shall be completed in accordance with the current Discharge Monitoring Report Manual and any updates.
- e. If monitoring for a parameter is not required for that monitoring period, the permittee is required to report "CODE=N" on that Monitoring Report Form.
- f. For intermittent discharges, the permittee shall obtain a sample during at least one of the discharge events occurring during a monitoring period. Report "NODI" only if there are no discharge events during the entire monitoring period.

#### **D. SUBMITTALS**

##### **1. Standard Submittal Requirements**

- a. The permittee shall amend the Operation & Maintenance Manual whenever there is a change in the treatment works design, construction, operations or maintenance which substantially changes the treatment works operations and maintenance procedures.

#### **E. FACILITY MANAGEMENT**

##### **1. Discharge Requirements**

- a. The permittee shall discharge at the location(s) specified in PART III of this permit.
- b. The permittee shall not discharge foam, or cause objectionable deposits, or foaming of the receiving water.
- c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.
- d. The discharge shall not exhibit a visible sheen.
- e. The Permittee is authorized to use the following additives:
  - i. DSN's 481-486: sodium hypochlorite may be used in the service water system, if needed, in excess of two hours per day to allow for continuous chlorination to control macroinvertebrate fouling.

- ii. DSN's 481-486: Sodium hypochlorite may also be added to the circulating water system to control biofouling, upon prior notification to the Department. As part of this notification, the permittee shall provide the Department with a methodology for sodium hypochlorite addition. Upon approval by the Department, in writing, chlorine produced oxidants may not be discharged from DSN's 481-486 for more than two hours per day where chlorine produced oxidants shall be monitored three times per day at DSN's 481-486 during this two hour period. A daily maximum effluent limitation of 0.2 mg/L would apply during the chlorination of the main condensers where the permittee would be required to maintain a log noting the time and duration of chlorination of the main condensers.
- iii. DSN 48C: The permittee is authorized to use the following additives in the steam plant and the non-radioactive waste disposal system: ammonium hydroxide, hydrazine, ethanolamine, which are used for corrosion control in the plant steam systems; sodium hypochlorite, hydrogen peroxide, sodium hydroxide, and a coagulant aid, which are used in the non-radioactive liquid waste disposal treatment system; and sodium hydroxide and sulfuric acid, which are used to regulate demineralizers.
- iv. DSN 487B: Ammonia and hydrazine are used for corrosion control in the auxiliary boiler blowdown which affects.
- v. All outfalls: If the permittee decides to begin using additional agents or replace the above agents in the future for any outfalls, the permittee must notify the Department at least 180 days prior to use so that the permit may be reopened, if necessary, to incorporate any additional limitations deemed necessary.

## 2. Applicability of Discharge Limitations and Effective Dates

- a. The effluent limitations contained in PART III apply for the full term of this permit action.

## 3. Operation, Maintenance and Emergency conditions

- a. The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit as specified in the Operation & Maintenance Manual.
- b. The permittee shall develop emergency procedures to ensure effective operation of the treatment works under emergency conditions in accordance with NJAC 7:14A-6.12(d).

## 4. Toxicity Testing Requirements-Acute Whole Effluent Toxicity

- a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.
- b. Acute toxicity tests shall be conducted using the test species and method identified in Part III of this permit.
- c. Any test that does not meet the specifications of N.J.A.C. 7:18, laboratory certification regulations, must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.
- d. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. The required ammonia-N analysis may be conducted on an aliquot of the acute toxicity testing composite sample. This result is to be reported on the Biomonitoring Report Form.
- e. Submit an Acute Methodology Questionnaire: within 60 days from the effective date of the permit (EDP). The permittee shall resubmit after any change of laboratory occurs.
- f. Submit an acute whole effluent toxicity test report: within twenty-five days after the end of every 6 month monitoring period beginning from the effective date of the permit (EDP) The permittee shall submit toxicity test results on appropriate forms.

- g. Test reports shall be submitted to:  
New Jersey Department of Environmental Protection  
Division of Water Quality, Bureau of Point Source Permitting Region 2, P.O. Box 029, Trenton,  
New Jersey 08625.

**5. Toxicity Reduction Implementation Requirements (TRIR)**

- a. The permittee shall initiate a tiered toxicity investigation if two out of six consecutive WET tests demonstrate that the effluent does not comply or will not comply with the toxicity limit specified in Part III of this permit.
- i. If the exceedence of the toxicity limit is directly caused by a documented facility upset, or other unusual event which has been identified and appropriately remedied by the permittee, the toxicity test data collected during the event may be eliminated when determining the need for initiating a TRIR upon written Department approval.
- b. The permittee shall begin toxicity characterization within 30 days of the end of the monitoring period when the second toxicity test exceeds the toxicity limits in Part III. The monitoring frequency for toxicity testing shall be increased to monthly. Up to 12 additional tests may be required.
- i. The permittee may return to the toxicity testing frequency specified in Part III if four consecutive toxicity tests conducted during the Toxicity Characterization do not exceed the toxicity limit.
- ii. If two out of any six consecutive, acceptable tests again exceed the toxicity limit in Part III, the permittee shall repeat Toxicity Reduction Implementation Requirements.
- c. The permittee shall initiate a preliminary toxicity identification (PTI) upon the third exceedence of the toxicity limit specified in Part III during toxicity characterization.
- i. The permittee may return to the monitoring frequency specified in PART III while conducting the PTI. If more frequent WET testing is performed during the PTI, the permittee submit all biomonitoring reports to the DEP and report the results for the most sensitive species on the DMR.
- ii. As appropriate, the PTI shall include:
- (1) treatment plant performance evaluation,
  - (2) pretreatment program information,
  - (3) evaluation of ammonia and chlorine produced oxidants levels and their effect on the toxicity of the discharge,
  - (4) evaluation of chemical use and processes at the facility, and
  - (5) an evaluation of incidental facility procedures such as floor washing, and chemical spill disposal which may contribute to effluent toxicity.
- iii. If the permittee demonstrates that the cause of toxicity is the chlorine added for disinfection or the ammonia concentration in the effluent and the chlorine and/or ammonia concentrations are below the established water quality based effluent limitation for chlorine and/or ammonia, the permittee shall identify the procedures to be used in future toxicity tests to account for chlorine and/or ammonia toxicity in their preliminary toxicity identification report.
- iv. The permittee shall submit a Preliminary Toxicity Identification Notification within 15 months of triggering TRIR. This notification shall include a determination that the permittee intends to demonstrate compliance OR plans to initiate a CTI.
- d. The permittee must demonstrate compliance with the WET limitation in four consecutive WET tests to satisfy the requirements of the Toxicity Reduction Investigation Requirements. After successful completion, the permittee may return to the WET monitoring frequency specified in PART III.
- e. The permittee shall initiate a Comprehensive Toxicity Investigation (CTI) if the PTI does not identify the cause of toxicity and a demonstration of consistent compliance with the toxicity limit in Part III can not be made.

- i. The permittee shall develop a project study plan identifying the party or parties responsible for conducting the comprehensive evaluation, establish a schedule for completing the study, and a description of the technical approach to be utilized.
- ii. If the permittee determines that the PTI has failed to demonstrate consistent compliance with the toxicity limit in Part III, a Comprehensive Toxicity Investigation Workplan must be prepared and submitted within 90 days.
- iii. The permittee shall summarize the data collected and the actions taken in CTI Quarterly Reports. The reports shall be submitted within 30 calendar days after the end of each quarter.
- iv. The permittee shall submit a Final CTI Report 90 calendar days after the last quarterly report. The final CTI report shall include the corrective actions identified to reduce toxicity and a schedule for implementing these corrective actions.
- f. Upon receipt of written approval from the Department of the corrective action schedule, the permittee shall implement those corrective actions consistent with that schedule.
  - i. The permittee shall satisfy the requirements of the Toxicity Reduction Implementation Requirements and return to the original toxicity monitoring frequency after corrective actions are implemented and the permittee demonstrates consistent compliance with the toxicity limit in Part III in four consecutive toxicity tests.
  - ii. If the implemented corrective measures do not result in consistent compliance with the toxicity limit in Part III, the permittee shall submit a plan for resuming the CTI.

## **F. CONDITIONS FOR MODIFICATION**

### **1. Causes for modification**

- a. Pursuant to N.J.A.C. 7:14A-6.2(a)(10)(iii), the Department may modify or revoke and reissue any permit to incorporate limitations or requirements to control the discharge of toxic pollutants, including whole effluent, chronic and acute toxicity requirements, chemical specific limitations or toxicity reduction requirements, as applicable.
- b. The Department may incorporate requirements to file monitoring data required by this permit electronically through a minor modification in accordance with N.J.A.C. 7:14A-16.5(a)1.
- c. The permittee may request a minor modification to eliminate the monitoring requirements associated with a discharge authorized by this permit when the discharge ceases due to changes at the facility.

## **G. Custom Requirement**

### **1. Intake Flow Limit and Dye Tracer Evaluation - Section 316 Special Condition.**

- a. The permittee shall limit the circulating water system intake flow to a monthly average rate not to exceed 3024 million gallons per day. This limit is included in Part III under FAC C. Reporting and compliance with this limitation shall be determined in accordance with the calculations described under item G.13 below for FAC C as well as in item G.1.b. below.

- b. As described later under item G.13. for FAC C, circulating water system intake flow is calculated as the sum of the twelve individual circulating water pump flows and reported as a monthly average in million gallons per day. The flow of each individual circulating water pump is calculated as the product of the number of operating hours for that pump for the reporting period and the flow rate for that pump. The flow rate for each individual circulating water pump shall be determined at least annually using a Rhodamine WT dye tracer evaluation ("the Tracer Evaluation"). The permittee shall continue Tracer Evaluation testing in accordance with the same schedule as in the July 20, 1994 permit to the best extent practicable. For example, if the dye tracer evaluation was performed in March 2000 under the July 20, 1994 permit, the dye tracer evaluation under this renewal permit shall be performed in March 2001, to the best extent practicable and provided representative operations are occurring. The Department recognizes that outages, pump maintenance or other operational conditions may result on the annual tracer evaluation test being unable to be conducted in the exact same month as the previous year. Prior to performing each annual test, the appropriate Enforcement Element must be notified regarding the use of any dye.
- i. Upon completion of the Tracer Evaluation for each individual pump, the permittee shall report the following to the Department: 1) Date of Rhodamine WT dye tracer evaluation; 2) Final concentration of dye in discharge; 3) Total dye discharged; and 4) Flow rate of circulating water pump(s) tested.
- ii. The report required to be submitted pursuant to G.1.b. above shall be submitted with the DMR for the month which follows the month that the Tracer Evaluation is performed. The individual circulating water pump flow rates determined for each pump shall be used in calculating the circulating water system intake, as required for FAC C in Part III, for the month which follows the month that the Tracer Evaluation was performed. For example, if the Tracer Evaluation was performed in March, the Tracer Evaluation report shall be submitted as an attachment to the DMR for April where the Tracer Evaluation results shall be used in calculating the circulating water system intake for April's DMR for FAC C.

## 2. Intake Screens and Fish Return System - Section 316 Special Condition.

- a. The permittee shall ensure proper operation and maintenance of its Ristroph Traveling Screens at all times to minimize impingement effects on aquatic life. The permittee shall conduct semi-annual training of its employees operating the screens to ensure awareness of the function of the screens in reducing mortality of aquatic life. Training shall be conducted in early Spring. Training shall also be conducted in late Fall, after the summer season, so that station personnel can review the operation again to see what actions could be taken to improve biological efficacy. The permittee must provide upon the Department's request any material in this training at any time to ensure that it is appropriate and comprehensive.
- b. Further Study and Enhancements.
- i. The permittee shall submit a ranking of best to worst (i.e. most vulnerable or frail) Representative Important Species (RIS) for which the Ristroph screens are most effective at minimizing mortality.
- ii. Based on the results of G.2.b.i, the permittee shall submit a proposed Work Plan for a study to determine ways to minimize the stresses and mortalities found associated with the fish return sluice and sampling pool which shall consider alternate flows, velocities, and depth profiles as part of this Work Plan. This Work Plan shall also consider an evaluation of fish mortality of the fish return system independent from the Ristroph screens to determine mortality rates as fish re-enter the estuary. Emphasis should be placed on reducing potential mortality of susceptible species.
- iii. PSEG shall submit the findings per G.2.b.i to the Department within 90 days of the effective date of the permit (EDP) and the proposed Work Plan required in G.2.b.ii within EDP + 180 days.

- iv. The permittee shall implement the study outlined in the Work Plan described in G.2.b.ii within 60 days of the Department's approval of the Work Plan. The Work Plan shall outline the time frame necessary for completion of the study where these time frames are subject to the Department's approval.
- v. Based on these findings, the Department reserves the right to impose new requirements regarding the intake screens and/or fish return system and sampling pool. Any such new requirements shall be installed pursuant to a schedule to be set forth by the Department at the time the new requirements are imposed. Any such requirements will be incorporated as a minor modification to the NJPDES permit.

**3. Wetland Restoration and Enhancement Efforts - Section 316 Special Condition.**

- a. The permittee shall continue to implement the Estuary Enhancement Program in restoring, enhancing and/or preserving wetlands within the region of the Delaware Estuary (primarily within New Jersey; not more than 20% of the acres restored or enhanced under the program to be located within Delaware and/or Pennsylvania) as follows:
  - i. restore an aggregate of no less than 10,000 acres of (1) diked wetlands (including salt hay farms, muskrat impoundments and/or agricultural impoundments) to normal daily tidal inundation so as to become functional salt marsh; and/or (2) wetlands dominated by common reed (*Phragmites australis*) to primarily *Spartina* species with other naturally occurring marsh grasses (e.g. *Distichlis spicata*, *Juncus* spp.); and/or (3) upland buffer. The permittee shall secure access to or control of such lands so as to have title ownership or deed restriction as may be necessary to assure the continued protection of said lands from development;
  - ii. An Upland Buffer shall mean an area of land adjacent to wetlands or open water which minimizes adverse impacts on the wetlands and serves as an integral component of the wetland ecosystem;
  - iii. the acreage restored, enhanced and/or preserved pursuant to i. and ii. above shall comprise an aggregate of no less than 10,000 acres; provided, however, the permittee only will be credited one acre toward the 10,000 acre aggregate for every three acres of Upland Buffer acquired or restricted pursuant to G.2.a. ii. above.
- b. The permittee shall implement the Management Plans for Dennis, Commercial, Maurice River Township, the Bayside Tract, Cohansey, Alloways, the Rocks (in Delaware) and Cedar Swamp (in Delaware). The Management Plans and any necessary revisions are automatically incorporated as conditions of this NJPDES permit.
- c. Replacement Acreage - In order to comply with G.3.a. above, the Department may require the permittee to acquire additional lands to serve as "replacement acreage" for any acreage deemed "failed" by the Department.
  - i. Conservation Restriction - The permittee shall impose a Conservation Restriction on any replacement acreage acquired under G.3.c., which shall name the Department as a Grantee of the Conservation Restriction. The Conservation Restriction shall be in the form of Attachment A of the July 20, 1994 NJPDES permit and shall be recorded by the permittee. There shall be no liens superior to the Conservation Restriction on the lands in question, proof of which shall be provided by the permittee through a title search and/or title insurance. The permittee shall regularly inspect the property and take appropriate action to prevent or correct a violation of the Conservation Restriction notwithstanding that such violation was by a person other than the permittee.

- ii. Management Plans - The permittee shall design and file Management Plan(s) for any replacement acreage acquired under G.3.c. not later than 1 year after securing control of such lands. Contemporaneous with the submission of a Management Plan to the Department, the permittee shall provide copies of said Plan to the County Library in the affected County. The permittee shall publicly notice the time and place that the Management Plan is available for review in a daily or weekly newspaper circulated in the affected County. The permittee shall complete implementation of the Management Plan consistent with the schedule approved by NJDEP and included in the Management Plan. The permittee must continue to implement the Management Plan(s) with respect to maintenance during any period of time the NJPDES permit is extended, including any lands that have met the success criteria.
- d. Establishment of the EEPAC - The permittee shall establish an Estuary Enhancement Advisory Committee (EEPAC) to serve as a body to provide technical advice to the permittee concerning any continuing implementation of the existing Management Plans as well as the development and implementation of any future Management Plans for replacement acreage that may be needed. The EEPAC shall also provide technical advice concerning the design, implementation, modifications and interpretation of the Biological Monitoring Program (as described later under item G.6). Any future Management Plans(s) as well as any changes to the Biological Monitoring Program must be submitted to the EEPAC for technical advice prior to submission to the Department for approval. All materials presented at any EEPAC meetings shall be distributed to EEPAC members at least one week in advance of any meeting.
  - i. The permittee shall request, subject to the Department's approval, members of the EEPAC to consist of representatives from at least three agencies having jurisdiction over wetland restoration activities and/or aquatic resources (a minimum of one representative from each agency), a minimum of two scientists with appropriate wetlands expertise; a minimum of three scientists with appropriate expertise in aquatic resources; and representatives from Cape May, Cumberland and Salem Counties (as appointed by the governments of Cape May, Cumberland and Salem Counties). The Department shall designate two representatives from its Division of Fish and Wildlife as well as a representative from its Mosquito Control Commission. The permittee shall designate a representative to serve on the EEPAC and to serve as the EEPAC's chair.
  - ii. A complete list of EEPAC members shall be submitted to the Department for approval. Comply with the requirement: within 90 days from the effective date of the permit (EDP).
  - iii. The EEPAC shall meet at least twice per year where at least one meeting shall include a tour of some or all of the wetland restoration sites. Upon finalization of this permit, all references to the "MPAC" and "MAC" in any documentation required under the July 20, 1994 permit, or incorporated therein by reference, shall be interpreted to mean "EEPAC".
4. Fish Ladders - Section 316 Special Condition.
  - a. The permittee has installed eight fish ladders (five under the terms of the July 20, 1994 permit.) The locations for these fish ladders are as follows: Sunset Lake, NJ; McGinnis Pond, DE; McColley's Pond, DE; Silver Lake, DE; Coursey's Pond, DE; Cooper River, NJ; Garrisons Lake, DE and Moores Lake, DE. The permittee shall operate and maintain these fish ladders in accordance with the developed operations and maintenance manuals or ensure that agreements exist that require other parties to be responsible for operations and maintenance. The permittee shall provide formal notification to the ladder owner of any maintenance issues identified during the routine inspections. Routine inspections during the upstream adult migration period shall be performed to ensure that the ladders are operating as designed. Documentation concerning inspections and any maintenance issues shall be made available to the Department upon request.
  - b. The permittee shall install two additional fish ladder sites in New Jersey at sites suitable for production of alewife or blueback herring. PSEG and NJDEP shall work cooperatively together to identify appropriate sites and PSEG shall submit the candidate sites to NJDEP for approval in advance of installing fish ladders.

- c. The permittee shall perform juvenile and adult passage of river herring in connection with the fish ladder sites identified in G.4.a. and G.4.b. above, where the monitoring results shall be included in the annual Biological Monitoring Program Report as required under G.6.a.iv.
- d. The permittee shall continue to stock any impoundments until at least 5 adult river herring per acre of impoundment successfully complete upstream migration into each impoundment.

**5. Further Study of Intake Protection Technologies - Section 316 Special Condition.**

- a. Multi-Sensory Hybrid Intake Protection Technology: PSEG shall study the feasibility of: 1) strobe light technology; 2) air bubble technology; 3) sound deterrent. These technologies shall be studied individually as well as in various combinations as a hybrid system. The objective of this study is to minimize impacts to those species that do not survive well off the intake traveling screens as well as those species that are most affected by Salem's operations (as indicated by Conditional Mortality Rates). The concerns and limitations documented by ESSA in its report for the 1994 Cage Tests; 1998 Cage Tests; and the in-situ tests shall be considered in the development of any Plan of Study with regard to any sound deterrent technologies. Also related to sound deterrents, far field attraction behavior or potential acclimation shall also be considered as part of any plan of study. Given these requirements, the permittee shall:
  - i. Present a Plan of Study regarding the above technologies to the Department and distribute this to the EEPAC. Submit a description of planned activities: within 180 days from the effective date of the permit (EDP).
  - ii. Not later than sixty days after receipt of the Department's approval of the Plan of Study, PSEG shall ~~implement the Plan of Study in~~ accordance with the schedule approved by the Department, subject to species availability.
  - iii. PSEG shall complete the Study identified in 5.1.ii and file a report of the results to the Department in accordance with a schedule approved by the Department in the Plan of Study.

**6. Biological Monitoring Program - Section 316 Special Condition.**

- a. The permittee shall develop and implement an improved biological monitoring program under this renewal permit. This biological monitoring program shall include, at a minimum: abundance monitoring for adult and juvenile passage of river herring as well as stocking in connection with the eight fish ladder sites; improved impingement and entrainment monitoring; review and discussion as to the appropriateness of Atlantic Silverside as a representative important species; improved bay-wide abundance monitoring; continued detrital production monitoring (including vegetative cover mapping, quantitative field sampling and geomorphology); continued study of the fish utilization of restored wetlands; and other special monitoring studies as may be recommended by the EEPAC and/or the Department and subsequently required by the Department. Additional special studies could include residual pesticide release monitoring for any replacement acreage deemed necessary under item G.3.c. where details of this monitoring is described in Part IV of the July 20, 1994 permit, as well as gear efficiency studies or catchability studies for bay-wide abundance monitoring. Until such time as an improved Biological Monitoring Program is developed and approved, the permittee shall continue in its monitoring efforts as specified in the existing (at the time of this renewal permit issuance) Biological Monitoring Program.
  - i. As described previously under G.3.d., the EEPAC shall provide advice regarding any improved Biological Monitoring Program. An improved Biological Monitoring Program Work Plan, shall be submitted to the EEPAC for technical advice prior to submission of the Work Plan to the Department for approval (which shall include a reporting schedule).
  - ii. The permittee shall submit to the Department for approval an improved Biological Monitoring Program Work Plan, which addresses the components described in item G.6.a. within EDP + 270 days.

- iii. Not later than sixty days after receipt of the Department's approval of the Work Plan, the permittee shall implement the Work Plan. The improved Biological Monitoring Program Work Plan is automatically incorporated as a condition of this permit upon final approval by the Department.
  - iv. The results of any monitoring performed as part of the existing (at the time of this NJPDES renewal issuance) biological monitoring program and the improved biological monitoring program shall be submitted annually by June 30 of that following year in an annual report. Contemporaneous with submission of said results to the Department, the permittee shall forward the results to each member of the EEPAC for technical review.
  - v. Any proposed modifications to the Work Plan (as may be necessary based on Biological Monitoring Program results) shall be submitted to the EEPAC, for technical review, prior to submission to the Department for the Department's approval.
- 7. Entrainment and Impingement Abundance Monitoring - Section 316 Special Condition.**
- a. Until such time as an improved entrainment sampling plan is developed as required under G.6.a. above, the permittee shall continue to conduct entrainment sampling during normal Station operations at a minimum frequency three days per week, from April - September and once per week from October through March, weather and operational conditions permitting. During normal Station operations, nighttime sampling shall be included and a minimum of six abundance samples shall be collected per sampling day, weather and operational conditions permitting.
  - b. Until such time as an improved impingement sampling plan is developed as required under G.6.a. above, the permittee shall continue to conduct impingement sampling during normal Station operations at a minimum frequency of three days per week, weather and operational conditions permitting. During normal Station operations, nighttime sampling shall be included and a minimum of ten samples shall be collected per sampling day, weather and operational conditions permitting.
  - c. The results of all entrainment and impingement abundance monitoring shall be reported in the Biological Monitoring Program Annual Report which is due by June 30 of each following year as referenced above in G.6.a.iv. or as established in the Biological Monitoring Program Work Plan, approved by the Department.
- 8. Expansion of Analyses - Section 316 Special Condition.**
- a. Analysis of Losses at the Station - The analysis of losses at the Station shall be supplemented with the following information as recommended in the June 14, 2000 ESSA Report: 1) A further assessment of the biomass lost to the ecosystem for all RIS; 2) The contribution of RIS other than Bay Anchovy to the forage available for commercial and recreationally important species; 3) A more detailed analysis of the levels of uncertainty in the production and catch foregone estimate; 4) Projected increases in RIS abundance in the estimates of catch and production foregone. PSEG shall consider ESSA's recommendations relative to these issues in the development of the Work Plan.
  - b. Expansion of Analysis with regard to Entrainment Sampling - The analysis of losses at the Station shall be supplemented with the following additional information as recommended in the June 14, 2000 ESSA Report:
    - i. The uncertainty of the estimated historic annual entrainment loss estimates should be characterized and presented as ranges with maximum and minimum levels.
    - ii. Any error in the estimation of natural mortality rate and the effect on CMR estimates with the Extended Empirical Impingement Model (EEIM) (which was used to derive estimates of CMR for alewife, blueback herring, American shad, white perch and spot) shall be investigated. The uncertainty with the CMR estimates shall also be characterized and presented.

- c. The analyses specified in items G.8.a. and G.8.b. shall be provided to the Department in accordance with the schedule defined in the Department approved Work Plan. Based on the fact that ESSA did not recommend wedgewire screens, dual flow fine mesh screens, modular inclined screens, and a retrofit with a new closed-cycle cooling system, a revised fisheries analysis will not have a bearing on the inclusion of the above referenced alternate intake protection technologies at this time.
- i. The permittee shall submit to the Department for approval a Work Plan including those supplemental analyses and additional information listed in G.8.a and G.8.b above. The Work Plan shall be submitted to the Department within EDP + 6 months and shall include a schedule for completion of the analyses.
- ii. Not later than sixty days after receipt of the Department's approval of the Work Plan, the permittee shall implement the Work Plan. The Work Plan is automatically incorporated as a condition of this permit upon final approval by the Department.

**9. Special Studies - Section 316 Special Condition.**

- a. Study of the Hydrodynamics at the Intake of the Station.
- i. The flow field in front of the intake and the existence of vortices at the intake shall be observed and photographed during: (1) an extreme low tide (2) when the current is strongest, namely at mid tide on the flood and mid tide on the ebb.
- ii. The pumping records of each pump should be examined to determine if the flow distribution is asymmetrical among the intake bays, particularly the most northern bay and the most southern bay (i.e. two outer bays).
- iii. The bathymetric chart of the area and other relevant hydrodynamic data should be examined to determine the potential for a strong back eddy during the ebb in Ship Wreck Bay immediately to the south of the intake. If such an eddy exists, it will be observable from shore and from the air when the ebb current is at a maximum. The chart and other relevant hydrodynamic data may also provide insight into the flow field entering the dredged channel from the side.
- b. Study of Enhancements to Entrainment and Impingement Sampling.
- i. An analysis of the optimum sampling frequency for entrainment and impingement shall be conducted considering any episodic nature of the entrainment process. This needs to take explicit account of the shape of the zone of entrainment as well as the hydrodynamic study discussed above in G.9.a.
- ii. Alternative entrainment sampling methods with less process error shall be investigated. PSEG shall submit a Plan of Study for evaluating alternative entrainment sampling methods within EDP + 6 months.
- c. PSEG shall present its findings regarding the Study of the Hydrodynamics at the Intakes of the Plant and the Study of Enhancements to Entrainment and Impingement Sampling as follows:
- i. PSEG shall present its findings regarding the Study of the Hydrodynamics at the Intakes of the Plant to the Department within EDP + 180 days.
- ii. PSEG shall present its findings regarding the Study of Enhancements to Entrainment and Impingement Sampling to the Department within 30 months following receipt of the Departments' approval of the Plan of Study.
- d. Reopener - Upon completion of 9.c, the Department may reassess and adjust the entrainment and/or impingement sampling frequencies and/ sampling locations as included in the Biological Monitoring Program. The Department may also define alternative entrainment sampling methods to reduce process error, which is also included in the Biological Monitoring Program.

**10. Intake Protection Technology Reopener / Submission of Documents - Section 316 Special Condition**

- a. Intake Protection Technology Reopener- The Department reserves the right to implement any available intake protection technology so long as the costs are not wholly disproportionate to the environmental benefits. The Department is committed to implementation of any and all such technologies it determines to be viable as a result of further studies. These intake protection technologies could include, but are not limited to, improvements to the fish return system, sound deterrents, strobe lights, air bubbles, revised refueling outages and construction of a jetty. Any such new technologies shall be implemented pursuant to a schedule to be set forth by the Department at the time the new requirements are imposed. Depending on the specifics, such new requirements will be incorporated either as a major or minor modification to the NJPDES permit.
- b. Submission of Documents - The permittee shall submit all documents specified in items G.2-G.9 and G.12.b, including, without limitation, workplan feasibility studies, further analyses, and reports, to the following person:

Director, Division of Fish and Wildlife  
501 East State Street, P.O. Box 400  
Trenton, NJ 08625-0400

**11. Termination of Section 316(a) Variance/Penalties - Section 316 Special Condition.**

- a. Notwithstanding any other provision of this permit, the Department specifically reserves the right to seek termination of the Section 316(a) variance granted or termination of this permit based on the permittee's noncompliance with any term or condition of this permit. Further, the Department specifically reserves the right to seek penalties pursuant to N.J.S.A. 58:10A-10 et seq. based on the permittee's noncompliance with any term or condition of this permit.

**12. Submissions as part of any NJPDES Renewal Application - Section 316 Special Condition.**

- a. Section 316 Determinations upon Reissuance.
  - i. If upon renewal, the permittee wants the Section 316(a) variance to be continued, the request for the variance along with a basis for its continuance must be submitted at the time of application for the renewal permit. The Department's Section 316(a) determination shall include, but not be limited to: 1) a review of whether the nature of the thermal discharge or the aquatic population associated with the Station have changed; 2) whether the measures required under the Special Conditions have assured the protection and propagation of the balanced indigenous population; 3) whether the best scientific methods to assess the effect of the permittee's cooling system have changed; 4) whether the technical knowledge of stresses caused by the cooling system has changed.
  - ii. With respect to Section 316(b), the Department's determination shall include, but not be limited to, an evaluation of whether technologies, their costs and benefits, and potential for application at Salem have changed. This shall include, at a minimum, revised outages and seasonal flow reductions.
- b. Production Measurement of the Wetland Restoration Sites.
  - i. As part of any renewal application, the permittee shall include estimates of overall fish production from all PSEG wetland restoration sites as well as the fish ladders. The permittee shall utilize appropriate methods, which may include bioenergetics. The Department acknowledges that these "estimates" are subject to many environmental variables. Measures of productivity shall be expressed in the same units as the analysis of losses at the intake structure.
- c. Conditional Mortality Rates.

- i. As part of any renewal application, the permittee shall estimate a CMR for striped bass and, dependent upon availability of data from non-PSEG controlled monitoring programs, estimate CMR's for other finfish RIS, absent issuance of regulations or guidance recommending use of other analytical methodologies or availability of superior analytical methodologies for application at Salem.

### 13. Special Monitoring Requirements.

#### a. DSN's 481-486.

- i. Effluent flow - Effluent flow is calculated daily as the sum of the circulating water flow and the service water flow. The circulating water flow for each outfall is calculated as the number of operating hours of the circulating water pumps and the flow rates for each pump. The service water contribution is calculated from the service water pump operating hours times the design flow rate of the service water pumps. The flow rates measured over the course of a calendar day shall be averaged on a daily basis consistent with the definition of daily discharge pursuant to N.J.A.C. 7:14A-1.2. These daily discharge points shall be utilized for the purposes of completing discharge monitoring reports as well as for calculation purposes.
- ii. Effluent Temperature - Effluent temperature shall be measured at DSN's 481-486 on a continuous basis. Effluent flow for DSN's 481 - 486 is reported on DMR's as indicated in Part III. The effluent temperature values measured over the course of a calendar day shall be averaged on a daily basis consistent with the definition of daily discharge pursuant to N.J.A.C.7:14A-1.2. These daily discharge points shall be utilized for the purposes of completing discharge monitoring reports as well as for calculation purposes.
- iii. Chlorine Produced Oxidants - Option 1: The daily maximum limitation of 0.2 mg/L shall apply when predominantly circulating water system water is being discharged through DSN's 481 - 486. Option 2: The daily maximum limitation of 0.5 mg/L and the monthly average limitation of 0.3 mg/L shall apply when only service water system non-contact cooling water is discharged through DSN's 481 - 486. Under normal operating conditions (i.e. no outage), the permittee discharges under an Option 1 scenario.
- iv. Intake pH - One sample of intake water shall be analyzed for pH and shall be reported as intake pH for DSN's 481-486.

#### b. FAC A and FAC B.

- i. Intake Temperature - Intake temperature shall be measured at the intake to the main circulating water system for Units 1 and 2 on a continuous basis. The intake temperatures from Units 1 and 2 shall be averaged to obtain the intake temperature for FAC A (Unit 1) as well as the intake temperature for FAC B (Unit 2). In the event that one of the temperature monitoring devices is out of service (such as for calibration and maintenance) the other temperature monitoring device will be applied to both units for reporting intake temperature.
- ii. Effluent temperature for FAC A and FAC B shall be calculated and reported as follows:
 

Effluent Temperature for FAC A = [(Eff. Temp. at DSN 481 x Eff. Flow at DSN 481) + (Eff. Temp at DSN 482 x Eff. Flow at DSN 482) + (Eff. Temp at DSN 483 x Eff. Flow at DSN 483)] / (Eff. Flow at DSN 481+ Eff. Flow at DSN 482+ Eff. Flow at DSN 483)

Effluent Temperature for FAC B = [(Eff. Temp at DSN 484 x Eff. Flow at DSN 484) + (Eff. Temp at DSN 485 x Eff. Flow at DSN 485) + (Eff. Temp at DSN 486 x Eff. Flow at DSN 486)] / (Eff. Flow at DSN 484+ Eff. Flow at DSN 485+ Eff. Flow at DSN 486).
- iii. Differential Temperature - Differential temperature shall be calculated by subtracting the daily intake temperature from the daily effluent temperature where the values for intake temperature and effluent temperature values are explained above. The permittee calculates differential temperature on an hourly basis where the daily differential temperature is an arithmetic average of the values obtained during the course of the day. This is consistent with the definition of "daily discharge" in accordance with N.J.A.C. 7:14A-1.2.

## c. FAC C.

- i. Intake Flow - Intake flow for the circulating water system is calculated as the sum of the twelve individual circulating water system intakes and reported as a monthly average in million gallons per day. The flow of each individual circulating water pump shall be calculated as the product of the number of operating hours for that pump for the reporting period and the flow rate for that pump. The flow rate for each respective pump shall be assessed on an annual basis in accordance with the Tracer Evaluation Requirement included as item G.1. For the purposes of DMR reporting, the intake flow values measured over the course of a calendar day shall be averaged on a daily basis consistent with the definition of daily discharge pursuant to N.J.A.C.7:14A-1.2.
- ii. Thermal Discharge - Thermal discharge in MBTU/Hr is the total heat released from Unit 1 (FAC A) and Unit 2 (FAC B) where it shall be calculated as follows:

$$\text{Thermal Discharge FAC C (MBTU/Hr)} = [M1Cp(\text{Teff-Tint})]\text{Unit 1} + [M2Cp(\text{Teff-Tint})]\text{Unit 2} / 1,000,000$$

Where:

M1 = Mass flow rate of water from Unit 1 in lbs/hour (includes circulating water flow as well as service water flow)

M2 = Mass flow rate of water from Unit 2 in lbs/hour (includes circulating water flow as well as service water flow)

Mass flow rate is equal to flow in gal/hour x 8.34 lb/gallon

Teff = effluent temperature from Unit (e.g. Unit 1)

Tint = intake temperature from Unit

Cp is the specific heat capacity of water which is 1 BTU/lb degrees Fahrenheit.

- d. DSN 48C and DSN 489: During periods of maintenance, calibration or failure of the flow meter, flow can be calculated using the operating hours of the discharge pumps times the flow rate of the discharge pumps.

#### 14. Other Regulatory Requirements.

- a. The permittee shall discharge so as not to violate the Delaware River Basin Commission Water Quality Regulations as amended for Zone 5 waters. This includes the stream quality objectives for radioactivity namely: alpha emitters- maximum 3 pc/L (picocuries per liter) and beta emitters - maximum 1000 pc/L. The permittee shall ensure compliance with the heat dissipation area set forth in any current DRBC docket.
- b. The permittee shall comply with all regulations set forth in N.J.S.A. 26:2D-1 et seq. regarding Radiation Protection. All radioactive wastes shall be collected, removed, and disposed of in accordance with N.J.S.A. 7:28-11.1 et seq..
- c. The permittee is licensed by the U.S. Nuclear Regulatory Commission (USNRC) and responsible to that agency for compliance with radiological effluent limitations, monitoring requirements, and other licensing conditions.

- d. The permittee is required to comply with Section 4.2 of Appendix B to the NRC Facility Operating Licenses Nos. DPR-70 and DPR -75 which includes National Marine Fisheries Service's (NMFS) Section 7 Consultation Biological Opinion related to the operation of Salem Units 1 and 2 Generating Stations, including attachments, and all subsequent amendments as may be approved by NMFS. All correspondence between the permittee and the NMFS specifically related to Salem's effects on threatened and endangered species shall be sent to the Department at the following address:

Director, Division of Fish and Wildlife  
501 East State Street, P.O. Box 400  
Trenton, NJ 08625-0400

**15. Construction of Artificial Reefs**

- a. The permittee shall fund an escrow account on the amount of Five Hundred Thousand Dollars (\$500,000) within EDP plus 90 days. The monies in the Escrow Account shall be made available to the Department for the construction and installation of artificial reefs.