

Attachment 5
Draft Permit

DRAFT AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§ 1251 et seq.; the "CWA", and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**Entergy Nuclear Generation Company
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360**

is authorized to discharge from a facility located at

**Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360**

to receiving water named

Cape Cod Bay

a Class SA water, in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month following sixty (60) days after signature if comments are received. If no comments are received, this permit shall become effective on the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit that was issued on April 29, 1991, modified on August 30, 1994, and expired on April 29, 1996.

This permit consists of **41** pages in Part I including effluent limitations, monitoring requirements and state permit conditions, Attachment A – Marine Acute Toxicity Test Protocol (July 2012), Attachment B – Biological Monitoring Program, Attachment C - Summary of Monitoring Parameters for Electrical Vault Sampling, and 25 pages in Part II, Standard Conditions.

Signed this day of , 2016.

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

David Ferris, Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

Summary of Effluent Limitation Pages

Part I.A. These effluent limitations and permit conditions apply during the period beginning on the effective date of the permit and lasting through the date of termination of electricity generation at the facility, no later than May 31, 2019.		
Part	Outfalls	Discharges
I.A.1	001	Once-through non-contact cooling water – chlorinated
I.A.2	002	Thermal and non-thermal backwash water
I.A.3	003 and 012	Screenwash water (traveling screens) to intake embayment – dechlorinated (003) Screenwash water to discharge canal – dechlorinated (012)
I.A.4	010	Salt Service water (SSW) for turbine building closed cycle cooling water (TBCCW) and reactor building closed cycle cooling (RBCCW) systems– chlorinated
Part I.B - These effluent limitations and permit conditions apply during the period beginning on the date following termination of electricity generation at the facility, no later than June 1, 2019, and lasting through the expiration date of the permit .		
I.B.1	001	Once-through non-contact cooling water – chlorinated
I.B.2	002	Non-thermal backwash water
I.B.3	010	Salt Service Water (SSW) for TBCCW and RBCCW systems– chlorinated
I.B.4	012	Screenwash water to discharge canal – dechlorinated
Part I.C -These effluent limitations and permit conditions apply during the period beginning on the effective date of the permit and lasting through the expiration date of the permit .		
I.C.1	004 and 005	Storm water from yard drains
I.C.2	006 and 007	Storm water from yard drains
I.C.3	004A, 005A, 005B, 007A, 007B	Storm water from electrical vaults
I.C.4	011	Internal outfall – demineralizer reject water, station heating and service water systems
I.C.5	014	Various process and wastewaters from waste neutralization sump

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The effluent limitations and permit conditions in Part I.A apply during the period beginning on the **effective date of the permit** and lasting through **the date of termination of electricity generation** at the facility, no later than May 31, 2019.

1. The permittee is authorized to discharge non-contact condenser cooling water through **Outfall Serial Number 001** to the discharge canal which flows to Cape Cod Bay. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	447	447	Continuous ³	Recorder
pH ⁴	SU	6.5 to 8.5		1/Week	Grab
Total Residual Oxidants (TRO) ⁵	ug/L	7.5	13	2/Day, when in use	Grab
Oil and Grease (O&G) ⁶	mg/L	---	Report	1/Month	Grab
Temperature, Effluent	°F	---	102	Continuous ³	Recorder
Temperature Rise (delta T) ⁷	°F	---	32	Continuous ³	Recorder

See page 4 for explanation of footnotes.

The permittee may use sawdust (wood flour) to seal condenser leaks only to the extent necessary. The permittee shall report the total amount of sawdust used during each month on its DMR. The use of any other material to seal condenser leaks must be approved by EPA and MassDEP prior to use.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 001, taken at a location between the point of discharge from the condensers and the outfall channel discharge to Cape Cod Bay. This sampling point shall also include flows from Outfalls 004, 005, 010, 011, and 014 when discharging. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report (DMR) submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 Code of Federal Regulations (CFR) §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event during each calendar week, when discharge occurs. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a No Data Indicator (NODI) Code (e.g., “C” for “No Discharge”) on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes are included at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made available upon request by EPA or MassDEP. If continuous monitoring equipment at the outfall is unavailable, a minimum of four (4) manual grab samples taken at least fifteen (15) minutes apart each day is acceptable in lieu of continuous monitoring data. The permittee shall provide an explanation of why continuous monitoring was not available and when continuous monitoring would be expected to be resumed. The flow rate may be estimated from pump capacity curves and operational hours. The daily maximum discharge temperature and delta T shall be the highest level recorded during the month.
4. The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
5. These limits are based on the marine water quality criteria for TRC. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. Compliance with the TRC limits shall be measured at the ML of detection for the test method used. In order to establish less stringent TRC limits, the permittee shall demonstrate to EPA and the MassDEP that the discharge of higher levels of TRC are required for macroinvertebrate control and shall include any dilution estimates based on an acceptable dilution model of Cape Cod Bay in the vicinity of the discharge. Only chlorine may be used as a biocide. Sampling shall be conducted only during periods of chlorination at the Facility, when chlorine is expected to be present in the discharge. No other biocide shall be used without explicit approval from the Regional Administrator (RA) of Region I of the EPA and the Commissioner of the MassDEP or their designees. The permittee shall use a sufficiently sensitive test procedures (method) for TRC consistent with Part I.D.4 below.
6. The permittee shall use EPA Method 1664A for O&G analysis, which has an ML of 5 mg/l, where the ML is the lowest point on the curve used to calibrate the test equipment for the pollutant of concern.
7. The temperature rise, or delta T, is defined as the difference between the cooling water discharge temperature and the intake temperature.

Part I.A.

2. The permittee is authorized to discharge thermal and non-thermal backwash water through **Outfall Serial Number 002**, which flows back through the intake structure and out to the intake embayment (Cape Cod Bay). Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow ³	MGD	---	28	Total Daily	Estimate
Discharge Frequency ⁴	count	---	1	1/Week	Count
Discharge Duration ⁴	hours	---	3	1/Thermal Backwash	Duration
pH ⁵	SU	6.5 - 8.5		1/Backwash	Grab
Total Residual Oxidants (TRO) ⁶	mg/L	---	Report	1/Backwash	Grab
Temperature	°F	---	115	Continuous ⁷	Recorder

See pages 6 for explanation of footnotes.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 002, taken at a representative location at the fish sluiceway, between the point of discharge from the intake screens and the discharge to the intake embayment. A routine sampling program shall be developed in which samples are taken at the same location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event during each calendar week, when discharge occurs. The results of sampling for any parameter above its required frequency must also be reported. For those months when there are no discharges, the Permittee must report a NODI Code on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>.
3. The maximum daily flow of all thermal and non-thermal backwashes shall be recorded and reported on the DMR.
4. The discharge from a thermal backwash shall not be more frequent than three hours per event and not more frequent than once per week per intake bay. In addition, the time between thermal backwash events shall be at least seven (7) consecutive calendar days. For example, if a thermal backwash occurred on a Tuesday, the next thermal backwash could occur no earlier than on the following Tuesday. The permittee shall record the backwash duration for each event and the backwash frequency on a monthly basis. The permittee shall explain any exceedance of the discharge frequency and/or duration on the DMR cover letter. The frequency and duration of non-thermal backwashes shall be reported in an attachment to the DMR for each month.
5. The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
6. Chlorination of the cooling water system shall not be conducted during any backwash procedure total residual oxidants (TRO) discharges shall be monitored once per backwash. The permittee shall use a sufficiently sensitive test procedure (method) for TRO consistent with Part I.D.4 below.
7. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made readily available upon request by USEPA or MassDEP. If continuous monitoring equipment at the outfall is unavailable, a minimum of four (4) manual grab samples taken at least fifteen (15) minutes apart each day is acceptable in lieu of continuous monitoring data. The permittee shall provide an explanation of why continuous monitoring was not available and when continuous monitoring would be expected to be resumed. The daily maximum limit for effluent temperature for any backwash event shall be the highest level recorded during each month.

Part I.A.

3. The permittee is authorized to discharge intake screenwash water through **Outfall Serial Numbers 003 and 012** to Cape Cod Bay via the main fish sluiceway which flows to the intake embayment and to the alternative fish sluiceway which discharges directly to the discharge canal, respectively. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate ³	MGD	4.1	4.1	Daily	Estimate
pH ⁴	SU	6.5 – 8.5		1/Month	Grab
Total Residual Oxidants (TRO)	mg/L	Report	Report	1/Month	Grab

See page 8 for explanation of footnotes

- a. The screenwash water shall consist of up to 3.2 MGD of Cape Cod Bay marine water and up to 0.90 MGD of potable freshwater normally used as Station Fire water. All water used for screenwash operations, with the exception of Station Fire water used during emergency conditions, shall be dechlorinated before being sprayed on the traveling screens and shall not have been used for any cooling purposes at the facility.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 003, taken at a representative location at the fish sluiceway, between the point of discharge from the intake screens and the discharge to either intake embayment (or to the discharge canal during storm conditions). A routine sampling program shall be developed in which samples are taken at the same location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a NODI Code (e.g., “C” for “No Discharge”) on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. The permittee shall record the estimated percentage of time each month that discharge of screenwash water through Outfall 012 to the discharge canal occurs and report these on the DMR cover letter. During the time period when the traveling screens are in operation, all live fish, shellfish, and other aquatic organisms that collect or are trapped on the screens or the intake bays shall be returned to the receiving water with minimal stress and at a sufficient distance from the intake so as to prevent reimpingement. All other material, except natural debris (e.g. leaves, seaweed, and algae), shall be removed from the intake screens and recycled or disposed of in accordance with all existing Federal, State, and/or Local laws and regulations that apply to waste disposal. Any such material shall not be returned to the receiving water. This discharge may include up to 0.9 MGD of potable water which is typically intended for use as Fire Station water. This water shall be used only under emergency conditions [as authorized by the U.S. Nuclear Regulatory Commission (NRC)] when traveling screen operation is impeded by the accumulation of algae or other biological material.
4. The pH of this discharge shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

Part I.A.

4. The permittee is authorized to discharge non-contact cooling water from the Salt Service Water (SSW) system, classified as low volume waste, through **Outfall Serial Number 010** to the discharge canal, which flows to Cape Cod Bay. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	19.4	19.4	Continuous ³	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Oil and Grease (O&G)	mg/L	15	20	1/Month	Grab
pH ⁴	SU	6.5 – 8.5		1/Month	Grab
Total Residual Oxidants (TRO)	mg/L	0.5	1.0	2/Day	Grab

See page 10 for explanation of footnotes.

- a. Continuous chlorination of the SSW may be conducted for macroinvertebrate control.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 010, taken at a representative location of the discharge exiting from the heat exchangers and prior to mixing with any other flows. A routine sampling program shall be developed in which samples are taken at the same location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a No Data Indicator (NODI) Code (e.g., “C” for “No Discharge”) on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes are included at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made readily available upon request by USEPA or MassDEP. If continuous monitoring equipment at the outfall is unavailable, a minimum of four (4) manual grab samples taken at least fifteen (15) minute apart each day is acceptable in lieu of continuous monitoring data. The permittee shall provide an explanation of why continuous monitoring was not available and when continuous monitoring would be expected to be resumed. The flow rate shall be estimated from pump capacity curves and operational hours.
4. The pH of this discharge shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

PART I.B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The effluent limitations and permit conditions in Part I.B apply during the period beginning on the **date following termination of electricity generation** at the facility, no later than June 1, 2019, and lasting through the **expiration date of the permit**.

1. The permittee is authorized to discharge cooling water to support shutdown operations through **Outfall Serial Number 001** to the discharge canal which flows to Cape Cod Bay. Intake water shall not be used for cooling the main condenser at the facility. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	11.2	224	Continuous ³	Recorder
pH ⁴	SU	6.5 to 8.5		1/Week	Grab
Intake Velocity ⁵	fps	Report	Report	1/Day	Estimate or Calculation ⁵
Oil and Grease (O&G) ⁶	mg/L	---	Report	1/Month	Grab
Temperature, Effluent	°F	80	85	Continuous ³	Recorder
Temperature Rise (delta T) ⁷	°F	---	3	Continuous ³	Recorder

- a. Chlorination of the intake water from either circulating water pump is prohibited.

See page 12 for explanation of footnotes

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 001, taken at a location in the outfall channel discharge to Cape Cod Bay. This sampling point shall also include flows from Outfalls 004, 005, 010, 011, and 014 when discharging. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report (DMR) submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 Code of Federal Regulations (CFR) §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event during each calendar week, when discharge occurs. For those months when there are no discharges, the Permittee must report a No Data Indicator (NODI) Code (e.g., “C” for “No Discharge”) on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes are included at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made available upon request by EPA or MassDEP. If continuous monitoring equipment at the outfall is unavailable, a minimum of four (4) manual grab samples taken at least fifteen (15) minutes apart each day is acceptable in lieu of continuous monitoring data. The permittee shall provide an explanation of why continuous monitoring was not available and when continuous monitoring would be expected to be resumed. The flow rate may be estimated from pump capacity curves and operational hours. The daily maximum limits for effluent temperature and delta T shall be the highest level recorded during the month.
4. The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
5. The intake velocity shall be monitored at the traveling screens at a minimum frequency of daily or may be calculated using water flow, depth, and screen open area. The maximum daily intake velocity is the maximum instantaneous velocity that is measured or calculated.
6. The permittee shall use EPA Method 1664A for O&G analysis, which has an ML of 5 mg/l, where the ML is the lowest point on the curve to calibrate the test equipment for the pollutant of concern.
7. The temperature rise, or delta T, is defined as the difference between the discharge temperature and the intake temperature.

Part I.B.

2. The permittee is authorized to discharge non-thermal backwash water through **Outfall Serial Number 002**, which flows back through the intake structure and out to the intake embayment (Cape Cod Bay). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow ³	MGD	---	28	Total Daily	Estimate
Discharge Frequency	count	---	1	1/Week	Count
Discharge Duration	hours	---	Report	1/Backwash	Duration
pH ⁴	SU	6.5 - 8.5		1/Backwash	Grab

- a. Thermal backwashes are prohibited beginning on the **date following termination of electricity generation** at the facility, and not later than June 1, 2019.
 - b. Chlorination of the cooling water system shall not be conducted during any backwash procedure.
1. All samples shall be representative of the effluent that is discharged through Outfall 002, taken at a representative location at the fish sluiceway, between the point of discharge from the intake screens and the discharge to the intake embayment. All samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
 2. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event during each calendar week, when discharge occurs. For those months when there are no discharges, the Permittee must report a NODI Code on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
 3. The maximum daily flow of all non-thermal backwashes shall be recorded and reported on the DMR.
 4. The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

Part I.B.

3. The permittee is authorized to discharge non-contact cooling water from the Salt Service Water (SSW) system, classified as low volume waste, through **Outfall Serial Number 010** to the discharge canal, which flows to Cape Cod Bay. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	7.8	15.6	Continuous ³	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Oil and Grease (O&G)	mg/L	15	20	1/Month	Grab
Temperature, Effluent	°F	80	85	Continuous ³	Recorder
Temperature Rise (delta T) ⁴	°F	---	3	Continuous ³	Recorder
pH ⁵	SU	6.5 – 8.5		1/Month	Grab
Total Residual Oxidants (TRO) ⁶	ug/L	7.5	13	2/Day	Grab

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 010, taken at a representative location of the discharge exiting from the heat exchangers and prior to mixing with any other flows. A routine sampling program shall be developed in which samples are taken at the same location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a No Data Indicator (NODI) Code (e.g., “C” for “No Discharge”) on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes are included at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made readily available upon request by EPA or MassDEP. If continuous monitoring equipment at the outfall is unavailable, a minimum of four (4) manual grab samples taken at least fifteen (15) minute apart each day is acceptable in lieu of continuous monitoring data. The permittee shall provide an explanation of why continuous monitoring was not available and when continuous monitoring would be expected to be resumed. The flow rate shall be estimated from pump capacity curves and operational hours.
4. The temperature rise, or delta T, is defined as the difference between the discharge temperature and the intake temperature.
5. The pH of this discharge shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
6. These limits are based on the marine water quality criteria for TRC. The minimum level (ML) for TRC is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. Compliance with the TRC limits shall be measured at the ML of detection for the test method used. In order to establish less stringent TRC limits, the permittee shall demonstrate to EPA and the MassDEP that the discharge of higher levels of TRC are required for macroinvertebrate control and shall include any dilution estimates based on an acceptable dilution model of Cape Cod Bay in the vicinity of the discharge. Only chlorine may be used as a biocide. Sampling shall be conducted only during periods of chlorination at the Facility, when chlorine is expected to be present in the discharge. No other biocide shall be used without explicit approval from the Regional Administrator (RA) of Region I of the EPA and the Commissioner of the MassDEP or their designees. The permittee shall use a sufficiently sensitive test procedures (method) for TRC consistent with Part I.D.4 below.

Part I.B.

4. The permittee is authorized to discharge intake screenwash water through **Outfall Serial Number 012** to Cape Cod Bay via the fish sluiceway which discharges directly to the discharge canal. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate ³	MGD	4.1	4.1	Daily	Estimate
pH ⁴	SU	6.5 – 8.5		1/Month	Grab
Total Residual Oxidants (TRO)	mg/L	Report	Report	1/Month	Grab

See page 17 for explanation of the footnotes

- a. All water used for screenwash operations, with the exception of Station Fire water used during emergency conditions, shall be dechlorinated before being sprayed on the traveling screens and shall not have been used for any cooling purposes at the facility.
- b. During the time period when the traveling screens are in operation, all live fish, shellfish, and other aquatic organisms that collected or are trapped on the screens or the intake bays shall be returned to the receiving water with minimal stress and at a sufficient distance from the intake so as to prevent reimpingement. All other material, except natural debris (e.g. leaves, seaweed, and algae), shall be removed from the intake screens and recycled or disposed of in accordance with all existing Federal, State, and/or Local laws and regulations that apply to waste disposal. Any such material shall not be returned to the receiving water.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through Outfall 012, taken at a representative location at the fish sluiceway, between the point of discharge from the intake screens and the discharge to the discharge canal. A routine sampling program shall be developed in which samples are taken at the same location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a NODI Code (e.g., “C” for “No Discharge”) on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. The screenwash water shall consist of up to 3.2 MGD of Cape Cod Bay marine water and up to 0.90 MGD of potable freshwater normally used as Station Fire water. This water shall be used only under emergency conditions [as authorized by the U.S. Nuclear Regulatory Commission (NRC)] when traveling screen operation is impeded by the accumulation of algae or other biological material.
4. The pH of this discharge shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

PART I.C. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The effluent limitations and permit conditions in Part I.C apply during the period beginning on the **effective date of the permit** and lasting through the **expiration date of the permit**.

1. The permittee is authorized to discharge stormwater through **Outfall Serial Numbers 004 and 005*** to the discharge canal to Cape Cod Bay. **Stormwater pumped out from electrical vaults may also be discharged to these stormwater outfalls. (See separate monitoring requirements for electrical vault discharges in Part I.C.3 below)** Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type ³
Flow Rate	MGD	---	Report	1/Month	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Oil and Grease (O&G)	mg/L		Non-detect ⁴	1/Month	Grab
pH ⁵	SU	6.0 – 8.5		1/Month	Grab

See page 19 for explanation of footnotes.

* Outfall 005 also discharges a portion of the flows from Internal Outfall 011 (Part I.C.3 of this permit). Discharges from the heating boiler blowdown via a floor drain to Outfall 005 are prohibited, except in an emergency situation. This discharge has occurred two times from 1998 to 2013. If this discharge occurs, it shall be sampled and be subject to the monitoring conditions and effluent limitations for the stormwater discharges shown above.

Footnotes:

1. All samples shall be representative of the effluent that is discharged through each outfall and taken at a representative location at the point of discharge from the outfall to the discharge to the discharge canal. If an outfall is inaccessible or submerged, the permittee shall proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with its analytical results. A routine sampling program shall be developed in which samples are taken at the same day, time, and location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a NODI Code on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Stormwater samples shall be taken during the first flush of wet weather, defined as during the first hour of a storm event greater than 0.1 inches in magnitude and which occurs at least twenty four (24) hours from the previously measurable (greater than 0.1inch rainfall) storm event. If sampling within the first hour of a storm event is not feasible, the permittee shall sample as soon as is practicable after the start of a storm which meets this definition and provide a brief explanation on the DMR or cover letter for that month as to why a first flush sample was not taken. For example, the permittee may cite an unsafe condition (e.g. icing, high wind) as the reason why first flush sampling was not conducted. Flow for these stormwater outfalls shall be estimated for those storm events associated with the monthly sampling events.
4. For Outfalls 004 and 005, there shall be no detectable discharge of oil and grease. The permittee shall use EPA Method 1664A for O&G analysis. Compliance with the non-detect limit for Outfalls 004 and 005 shall be measured at the minimum level (ML) of detection for the EPA approved test methods. The ML for oil and grease is 5 mg/l using EPA Method 1664A, where the ML is the lowest point on the curve used to calibrate the test equipment for the pollutant of concern. If EPA approves a method under 40 CFR Part 136 for oil and grease that has a ML lower than 5 mg/l, the permittee shall be required to use the improved method. If EPA approves a method under 40 CFR Part 136 for oil and grease that has a ML lower than 5 mg/l, the permittee shall be required to use the improved method
5. The pH of this discharge shall be in the range of 6.0 to 8.5 standard units and no more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

PART I.C. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. The permittee is authorized to discharge stormwater through **Outfall Serial Numbers 006 and 007**, to the intake embayment, which flows out to Cape Cod Bay. Discharges to Outfall 006 may include municipal water from the fire water storage tanks. **Stormwater pumped out from electrical vaults may also be discharged to these stormwater outfalls. (See separate monitoring requirements for electrical vault discharges in Part I.C.3 below)** Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type ³
Flow Rate	MGD	---	Report	1/Month	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Oil and Grease (O&G)	mg/L	---	Non-detect ⁴	1/Month	Grab
pH ⁵	SU	6.0 – 8.5		1/Month	Grab

Footnotes:

1. All samples shall be representative of the effluent that is discharged through each outfall and taken at a representative location at the point of discharge from the outfall to the discharge to the intake embayment. If an outfall is inaccessible or submerged, the permittee shall proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with its analytical results. A routine sampling program shall be developed in which samples are taken at the same day, time, and location each month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

Part I.C.2 (continued) footnotes:

2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. For those months when there are no discharges, the Permittee must report a NODI Code on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Stormwater samples shall be taken during the first flush of wet weather, defined as during the first hour of a storm event greater than 0.1 inches in magnitude and which occurs at least twenty four (24) hours from the previously measurable (greater than 0.1 inch rainfall) storm event. If sampling within the first hour of a storm event is not feasible, the permittee shall sample as soon as is practicable after the start of a storm which meets this definition and provide a brief explanation on the DMR or cover letter for that month as to why a first flush sample was not taken. For example, the permittee may cite an unsafe condition (e.g. icing, high wind) as the reason why first flush sampling was not conducted. Flow for these stormwater outfalls shall be estimated for those storm events associated with the monthly sampling events.
4. For Outfalls 006 and 007, there shall be no detectable discharge of oil and grease. The permittee shall use EPA Method 1664A for O&G analysis. Compliance with the non-detect limit for Outfalls 006 and 007 shall be measured at the minimum level (ML) of detection for the EPA approved test methods. The ML for oil and grease is 5 mg/l using EPA Method 1664A, where the ML is the lowest point on the curve used to calibrate the test equipment for the pollutant of concern. If EPA approves a method under 40 CFR Part 136 for oil and grease that has a ML lower than 5 mg/l, the permittee shall be required to use the improved method.
5. The pH of this discharge shall be in the range of 6.0 to 8.5 standard units and no more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

PART I.C.3

The permittee is authorized to discharge stormwater from electrical vaults (manholes) through internal **Outfall Serial Numbers 004A (manhole MH-4¹), 005A (CP-4¹), and 005B (MH-27A¹)** to the discharge canal to Cape Cod Bay **and through internal Outfall Serial Numbers 007A (MH-L¹) and 007B (MH-2A¹)** to the intake embayment, which flows out to Cape Cod Bay. Such discharges shall consist of stormwater runoff only and shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ²	
		Average Monthly	Maximum Daily	Measurement Frequency ³	Sample Type ⁴
Total Suspended Solids (TSS)	mg/L	---	Report	1/Quarter	Grab
Total Phenols	ug/L	---	Report	1/Quarter	Grab
Total Polychlorinated Biphenyls (PCBs) ⁴	ug/l	---	Report	1/Quarter	Grab
Total Phthalates	ug/l	---	Report	1/Quarter	Grab
Total Cadmium	ug/l	---	Report	1/Quarter	Grab
Total Copper ⁵	ug/l	---	Report	1/Quarter	Grab
Total Iron	ug/l	---	Report	1/Quarter	Grab
Total Lead ⁵	ug/l	---	Report	1/Quarter	Grab
Total Zinc	ug/l	---	Report	1/Quarter	Grab
pH ⁶	SU	Report		1/Quarter	Grab

See page 23 for explanation of footnotes.

Footnotes:

1. Manhole designations are provided by the permittee in the June 30, 2015 CWA Section 308(a) information request letter submittal to EPA.
2. Sampling shall be representative of the water that has collected in each electrical vault and prior to being pumped out and discharged to a permitted outfall. Sampling may be conducted in wet or dry weather and does not need to be at a time when the vault contents are being discharged to a stormwater outfall. Sampling locations in these five (5) vaults are considered internal outfalls to eventual discharge points, which are Outfalls 004, 005, and 007. The permittee shall note the total precipitation and snowmelt over the forty-eight (48) hours prior to sampling. If there is any visible sheen present, the permittee shall pump out the vault water and dispose of it off-site. A routine sampling program shall be developed in which samples are taken at the same day, time, and location each quarter. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable DMR submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
3. Sampling frequency of 1/quarter is defined as the sampling of one (1) discharge event during each calendar quarter, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. The permittee shall conduct sampling of electrical vault water during the first month of the calendar quarter. If the vault is dry, the sampling shall be attempted during the following two (2) months of the quarter until a sample is obtained. For those months when there are no discharges, the Permittee must report a NODI Code on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
4. The minimum level (ML) for analysis for total PCBs shall be no greater than 0.022 µg/L. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence. Provide the results of PCB analyses as the sum of all Aroclors. Sampling results less than the detection limit shall be reported as “≤ [detection limit]” on the DMR.
5. The minimum levels (ML) for copper and lead are defined as 3 ug/l and 0.5 ug/l, respectively. These values are the MLs for copper and lead using the Furnace Atomic Absorption analytical method (EPA Method 220.2). This method or another EPA-approved method with an equivalent or lower ML shall be used. Sampling results less than the detection limit shall be reported as “≤ [detection limit]” on the DMR.
6. The pH of this discharge shall be no more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

Part I.C.4

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge station heating system water, closed-cycle cooling water from heat exchangers of the Turbine Building Closed Cooling Water (TBCCW) system and Reactor Building Closed Cooling Water (RBCCW) system, drainage from the floor drains in the boiler room (station heating water), SSW system chlorinated salt water from various sumps in the Turbine and Reactor buildings, and reject water from the demineralizer system * through **Internal Outfall Serial Number 011** which is directed through the drain line associated with Outfall 005 and discharged to the discharge canal and ultimately to Cape Cod Bay. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	0.015	0.06	Continuous, when in use ³	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Oil and Grease (O&G)	mg/L	15	20	1/Month	Grab
pH ⁴	SU	6.1 – 8.4		1/Month	Grab
Sodium Nitrite ⁵	mg/L	Report	2.0 mg/l	1/Month	Grab
Tolyltriazole ⁵	mg/L	Report	1.48 mg/l	1/Month	Grab
Effluent Boron ⁶	mg/L	Report	5.6 mg/l	1/Month	Grab
Boron ⁶ , Ambient	mg/L	Report	Report mg/l	1/Month	Grab

See pages 25 to 27 for explanation of footnotes.

* purified city water which does not meet the requirements of condenser makeup water

Effluent Characteristic	Discharge Limitation		Monitoring Requirements ¹	
	Average Monthly	Maximum Daily	Measurement Frequency ^{2,3}	Sample Type
WHOLE EFFLUENT TOXICITY ^{7,8,9,10}				
LC ₅₀ & NOAEL	Report %		2/Year	24-Hour Composite ⁷
Total Residual Chlorine	Report mg/l		2/Year	Grab
Salinity	Report g/kg		2/Year	24-Hour Composite ⁷
pH	Report s.u.		2/Year	Grab
Total Solids	Report mg/l		2/Year	24-Hour Composite ⁷
Total Suspended Solids	Report mg/l		2/Year	24-Hour Composite ⁷
Ammonia	Report mg/l		2/Year	24-Hour Composite ⁷
Total Organic Carbon	Report mg/l		2/Year	24-Hour Composite ⁷
Total Recoverable Cadmium	Report mg/l		2/Year	24-Hour Composite ⁷
Total Recoverable Lead	Report mg/l		2/Year	24-Hour Composite ⁷
Total Recoverable Copper	Report mg/l		2/Year	24-Hour Composite ⁷
Total Recoverable Zinc	Report mg/l		2/Year	24-Hour Composite ⁷
Total Recoverable Nickel	Report mg/l		2/Year	24-Hour Composite ⁷

Footnotes:

1. All samples shall be representative of the effluent that is discharged through internal Outfalls 011, taken at a representative location of the discharge, prior to mixing with any other flows including flow through Outfall 005. All samples shall be analyzed using the analytical methods found in 40 CFR § 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR § 136. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event during each calendar month, when discharge occurs. If no discharge occurs during the monitoring period, the permittee shall indicate this on the Discharge Monitoring Report (DMR). For Outfall 014, quarterly sampling shall be conducted when discharge occurs. Such sampling shall be conducted during periods when the majority of the listed flows to this outfall are being discharged. For those months when there are no discharges, the Permittee must report a NODI Code (e.g., "C" for "No Discharge") on the DMR. A list of NODI codes are found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available at <http://www.epa.gov/region1/enforcement/water/dmr.html>. The results of sampling for any parameter above its required frequency must also be reported.
3. Continuous monitoring shall be defined as monitoring at a minimum of fifteen (15) minute intervals during discharge. The results shall be recorded with the time and date on a chart, and shall be made readily available upon request by USEPA or MassDEP. If continuous monitoring at the outfall is unavailable, a minimum of four (4) manual grab samples taken at a minimum fifteen (15) minute intervals each day is acceptable in lieu of continuous monitoring data.
4. The pH of this discharge shall be in the range of 6.1 to 8.4 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
5. The permittee shall monitor the discharge through Outfall 011 and Outfall 014 for sodium nitrite and tolyltriazole on a monthly basis and provide the calculated concentration in the discharge canal upon mixing with Outfall 001, as described below, to assure that the sodium nitrite limit of 2.0 mg/l and the tolyltriazole limit of 1.48 mg/l are not exceeded. To calculate the estimated concentrations of sodium nitrite and tolyltriazole in the discharge canal, the permittee shall divide the concentration of these parameters in the Outfall 011 internal discharge by the dilution factor derived by dividing the flow rate of the cooling water flow being used from the combination of CW and SSW pumps that are operating at the time of the batch discharge of these waters by the flow rate of this discharge. These discharges may be made directly to the discharge canal.
6. Each release of boron will be reported in that month's DMR and the permittee shall provide the concentration of boron in the tank before release, and the calculated boron concentration in the discharge canal before mixing with Cape Cod Bay water. Sodium pentaborate may be discharged in 20,000 gallon batches at a maximum concentration of 16,500 mg/l calculated as boron. The boron concentration shall not exceed 1.0 mg/l above background, by calculation, in the discharge from the discharge canal. Each sodium pentaborate release shall be conducted at a rate and with adequate dilution to assure that this concentration is not exceeded in the discharge canal at any time. To calculate the estimated concentration of boron in the discharge canal, the permittee shall divide the concentration of boron in this internal batch discharge by the dilution factor derived by dividing the flow rate of the cooling water flow being used from the combination of CW and SW pumps that are operating at the time of the batch discharge by the flow rate of this batch discharge. This estimate shall meet the limit of 1.0 mg/l above background of boron. These discharges may be made directly to the discharge canal. In order to confirm that the background concentration of boron is approximately 4.6 mg/l, the permittee shall sample the ambient water at the intake for boron once per month during the same day that the batch discharge of boron occurs.

7. The permittee shall conduct acute whole effluent toxicity (WET) tests on samples collected during the months of April and October for years 1, 3 and 5 of the permit for Outfalls 011 and 014. If there are no discharges from these outfalls for the month that sampling is required, sampling shall be conducted the next time that there is a discharge from these outfalls. The permittee shall test the Mysid Shrimp, *Americamysis bahia*, and the Inland Silverside, *Menidia beryllina*. Toxicity testing reporting is due to be submitted with the May and November DMRs, which must be transmitted no later than June 15th and December 15th, respectively. The testing schedule is summarized in the table below. The test must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit and conducted during normal operating conditions. A 24-hour composite shall consist of twenty-four (24) grab samples collected at hourly intervals during a twenty-four hour period (*i.e.*, 0700 Monday to 0700 Tuesday), combined proportional to flow. If the discharge duration is less than 24 hours, the composite sample shall consist of a shorter time interval than hourly to assure that 24 grab samples are taken. This sampling shall be done during dry weather for both outfalls and be taken prior to comingling with any other flow discharging to Outfall 005 for Outfall 011.

Test Month:	Submit Results With:	Test Species	LC ₅₀	NOAEL
April	May DMR	<i>Americamysis bahia</i> (Mysid Shrimp)	Report %	Report %
October	November DMR	<i>Menidia beryllina</i> (Inland Silverside)		

8. The LC₅₀ is the concentration of the effluent which causes mortality to 50% of the test organisms. The NOAEL (no observed acute effect level) is defined as the highest effluent concentration at which there is no statistically-significant adverse effect on the survival of the test organisms when compared with the diluent control survival at the time of observation.
9. For each WET test, the permittee shall report the concentrations of the parameters listed under the WET testing in the table on Page 23 that are detected in a 100% effluent sample, on the appropriate DMR. All of these chemical parameters shall be determined to at least the minimum levels of quantification (ML) shown on Pages 8 to 10 of **Attachment A**, as amended. The permittee should note that all chemical parameter results must still be reported in the appropriate WET test report.
10. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A, Section IV**, of this permit in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, the permittee may use the EPA New England guidance document entitled Self-Implementing Alternative Dilution Water Guidance (“Guidance Document”) to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If the Guidance Document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The Guidance Document is included as Attachment G of the DMR Instructions on the EPA website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> and is not intended as a direct attachment to this permit.

Part I.C.5

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge station heating system water, closed-cycle cooling water from heat exchangers of the Turbine Building Closed Cooling Water (TBCCW) system and Reactor Building Closed Cooling Water (RBCCW) system, drainage from the floor drains in the boiler room (station heating water), SSW system chlorinated salt water from various sumps in the Turbine and Reactor buildings, and reject water from the emergency standby liquid control system* through **Outfall Serial Number 014** to the discharge canal and ultimately to Cape Cod Bay. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements ¹	
		Average Monthly	Maximum Daily	Measurement Frequency ²	Sample Type
Flow Rate	MGD	0.015	0.06	Continuous, when in use ³	Estimate
Total Suspended Solids (TSS)	mg/L	30	100	1/Quarter, when discharging	Grab
Oil and Grease (O&G)	mg/L	15	20	1/Quarter, when discharging	Grab
pH ⁴	SU	6.1 – 8.4		1/Quarter, when discharging	Grab
Sodium Nitrite ⁵	mg/L	Report	2.0 mg/l	1/Quarter, when discharging	Grab
Tolyltriazole ⁵	mg/L	Report	1.48 mg/l	1/Quarter, when discharging	Grab
Effluent Boron ⁶	mg/L	Report	5.6 mg/l	1/Quarter, when discharging	Grab
Boron ⁶ , Ambient	mg/L	Report	Report mg/l	1/Quarter, when discharging	Grab

See pages 25 to 27 for explanation of footnotes. * boronated water from the demineralizer which does not meet technical specifications

Part I.D.

These provisions apply to all listed outfalls in Parts I.A through I.C above.

1. The effluents shall not cause objectionable discoloration of the receiving waters.
2. The effluents shall not cause a violation of the water quality standards of the receiving waters.
3. The effluents shall be free from visible oil sheens or floating, suspended, and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
4. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall use sufficiently sensitive test procedures (*i.e.*, methods) approved under 40 C.F.R. § 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters limited in this permit (except WET limits). A method is considered “sufficiently sensitive” when either (1) The method minimum level (ML) is at or below the level of the effluent limit established in this permit for the measured pollutant or pollutant parameter; or (2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. § 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or the pollutant parameter. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence.
5. Toxics Control
 - a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
 - d. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.
6. Numerical Effluent Limitations for Toxicants

EPA or MassDEP may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 C.F.R. Part 122.
7. EPA may modify this permit in accordance with EPA regulations in 40 C.F.R. §§ 122.62 and 122.63 to incorporate more stringent effluent limitations, increase the frequency of analyses, or impose additional sampling and analytical requirements.

8. All existing manufacturing, commercial, mining and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge, on a routine basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - i. One hundred micrograms per liter (100 µg/l);
 - ii. Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
 - iv. Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f).
 - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - i. Five hundred micrograms per liter (500 µg/l);
 - ii. One milligram per liter (1 mg/l) for antimony;
 - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7);
 - iv. Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f).
 - e. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
9. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
10. Any thermal plume in the receiving water resulting from the discharges from the Facility shall not block or severely restrict fish passage, nor interfere with the spawning of indigenous populations of fish in the receiving water, nor change the balanced indigenous population of the receiving water, and shall have minimal contact with the surrounding shoreline.

11. Beginning on the effective date of the permit and until the date of termination of electricity generation at the facility, the rate of change of the delta T (difference between intake and effluent temperature) from Outfall 001 shall not exceed:
 - a. A 3° F rise or fall in temperature for any sixty (60) minute period during normal steady state operation and
 - b. A 10° F rise or fall in temperature for any sixty (60) minute period during normal load cycling.

Variation in inlet temperature shall not be considered as an operational rise or fall of temperature. The normal startup temperature rise shall not exceed the maximum allowed in Part I.A.1. above. Any temperature excursion as described in this Part shall be reported to EPA and MassDEP with the DMR for the month when such excursion occurred.

In the event of an emergency or unplanned reactor shutdown, the allowable decrease of 10° F per hour may be exceeded. In such an event, the permittee shall report the occurrence in the next monthly DMR to EPA and MassDEP.

12. Unusual Impingement Event (UIE)

During the period beginning on the effective date of the permit, the permittee shall report all "unusual impingement events" at the Facility. An "unusual impingement event" (UIE) at PNPS is defined as the impingement of twenty (20) or more total fish of all species impinged per hour and includes fish in the traveling screens and the intake bays. UIEs will be reported to EPA and MassDEP by telephone no later than twelve (12) hours after the permittee is aware of or has reason to believe an UIE has occurred (See Part I.K.7). A written confirmation report is to be provided within five (5) business days. The MassDEP and EPA addresses to be used are found in Part I.K.4 and 5 of this permit. The written reports shall include the following information:

- a. All fish shall be enumerated and recorded by species. Report the species, size ranges (maximum and minimum length), and approximate number of organisms involved in the UIE. In addition, a representative sample of 25% of fish specimens from each species, up to a maximum of 50 total fish specimens, shall be measured to the nearest centimeter total length.
 - b. The date and time of occurrence.
 - c. The opinion of the permittee as to the reason the incident occurred.
 - d. The remedial action that the permittee recommends to reduce or eliminate this type of incident in the future.
13. All live fish, shellfish, and other aquatic organisms collected or trapped on the screens or in the intake bays shall be returned to the receiving water with minimal stress and at a sufficient distance from the intake so as to minimize reimpingement. All other material, except natural debris (e.g.

leaves, seaweed and twigs), shall be removed from the intake screens and recycled or disposed of in accordance with all existing Federal, State, and/or Local laws and regulations that apply to waste disposal. Such material shall not be returned to the receiving water.

14. Sand Removal from CWIS

The permittee may remove accumulated sand from the concrete surfaces of the CWIS as necessary to assure that the operation of the traveling screens is not compromised. Such sand shall be disposed of in accordance with local and state regulations or ordinances. Each sand removal occurrence shall be reported as an attachment to that month's DMR.

15. Radioactive materials

The discharge of radioactive materials shall be in accordance with and regulated by the Nuclear Regulatory Commission (NRC) operational requirements (10 C.F.R. Part 20 and NRC Technical Specifications set forth in facility operating license, DPR-35).

16. Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

E. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Parts I.A. through I.C. of this permit. Discharges of wastewater from any other point sources not authorized by this permit shall be reported in accordance with the twenty-four hour reporting provision found in Section D.1.e.(1) of Part II (Standard Conditions) of this permit.

F. COOLING WATER INTAKE STRUCTURE (CWIS) REQUIREMENTS TO MINIMIZE ADVERSE IMPACTS FROM IMPINGEMENT AND ENTRAINMENT

Section 316(b) of the CWA, 33 U.S.C. § 1326(b), dictates that this permit must require that the cooling water intake structure's (CWIS) design, location, construction, and capacity reflect the best technology available for minimizing adverse environmental impact (BTA), including the CWIS's entrainment and impingement of various life stages of aquatic organisms (e.g., eggs, larvae, juveniles, and adults). Accordingly, EPA has determined the BTA for PNPS' CWIS and has specified requirements reflecting this BTA below in Parts I.F.1 and I.F.2 of this permit.

The permittee has informed EPA and MassDEP that it will terminate operations at PNPS and enter a decommissioning phase no later than June 1, 2019. As of this date, PNPS will terminate cooling water withdrawals for the main condenser and will be authorized to continue withdrawing cooling water only as necessary to support decommissioning activities and to cool the spent fuel rods for a limited period of time following shutdown of PNPS. The BTA requirements in this permit reflect the current operations of PNPS prior to shutdown or June 1, 2019, whichever comes first and the anticipated operations from June 1, 2019 through the end of the decommissioning phase or the expiration of this permit, whichever comes first.

1. Upon termination of generation of electricity or no later than June 1, 2019, the permittee shall:
 - a. Operate the traveling screens with a maximum through-screen intake velocity no greater than 0.5 feet per second. Limited exceedances of the maximum through-screen velocity are authorized for the purposes of maintaining the CWIS and when the circulating water pumps are required to withdraw water to support decommissioning activities not to exceed five (5) percent of the time on a monthly basis.
 - b. Monitor the through-screen velocity at the screen at a minimum frequency of daily. Alternatively, the permittee shall calculate the daily maximum through-screen velocity using water flow, depth, and screen open area. For this purpose, the maximum intake velocity shall be calculated during minimum ambient source water surface elevations and periods of maximum head loss across the screens. The average monthly and maximum daily through-screen intake velocity shall be reported each month on the DMR. See Part I.B.1. of this permit.
 - c. Cease cooling water withdrawals for the main condenser and reduce total cooling water withdrawals to an average monthly rate of 7.8 MGD. Cooling water withdrawals at the salt service water pumps shall be limited to a maximum daily flow of 15.6 MGD.
 - d. Withdrawal of seawater using a single circulating water pump not to exceed five (5) percent of the time on a monthly basis is authorized to support decommissioning activities.
 - e. Continuously rotate the traveling screens when operating the circulating water pumps.
2. From the effective date of the permit until termination of generation of electricity, no later than June 1, 2019, the permittee shall continuously rotate the traveling screens.
3. Any change in the location, design, or capacity of any CWIS, except as expressed in the above requirements, must be approved in advance and in writing by the EPA and MassDEP.

G. BIOLOGICAL MONITORING

The permittee shall conduct biological monitoring which has been determined by EPA and MassDEP to be necessary to evaluate the effect of the permittee's discharges on the balanced indigenous population of shellfish, fish, and wildlife in and on Cape Cod Bay.

The permittee shall conduct monitoring as described in Permit Attachment B and submit biological monitoring reports for each year of operation through 2019. Annual reports for each year through 2018 shall be submitted no later than May 15th of the following year, with the April DMR. The annual report for 2019 shall be submitted no later than January 15, 2020, with the December 2019 DMR.

No later than January 15th of each year, with the December DMR, the permittee shall submit to EPA and the MassDEP for approval, any revisions to the existing biological monitoring program (BMP) which may be warranted by the availability of new information. Upon approval by the Regional

Administrator (EPA) and the Director (MassDEP), the revised program submitted in accordance with this paragraph shall be incorporated as a part of this permit.

H. STORMWATER POLLUTION PREVENTION PLAN

1. The permittee shall develop, implement, and maintain a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce, or prevent, the discharge of pollutants in stormwater to the receiving waters identified in this permit. The SWPPP shall be a written document that is consistent with the terms of this permit. Additionally, the SWPPP shall serve as a tool to document the permittee's compliance with the terms of this permit. Development guidance and a recommended format for the SWPPP are available on the EPA website for the Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activities (<http://cfpub.epa.gov/npdes/stormwater/msgp.cfm>).
2. The SWPPP shall be developed and certified by the permittee within one hundred and eighty days (180) days after the effective date of this permit. The permittee shall certify that its SWPPP has been completed and signed in accordance with the requirements identified in 40 C.F.R. §122.22. A copy of this certification shall be sent to EPA and MassDEP within thirty (30) days after the certification date.
3. The SWPPP shall be prepared in accordance with good engineering practices and shall be consistent with the general provisions for SWPPPs included in the most current version of the MSGP. In the current MSGP (effective June 4, 2015), the general SWPPP provisions are included in Part 5. Additionally, the permittee shall incorporate into the SWPPP all the specific pollution control activities and other requirements found in the MSGP's Industrial Sector O, Steam Electric Generating Facilities. Specifically, the SWPPP shall document the selection, design, and installation of control measures and contain the elements listed below:
 - a. A pollution prevention team with collective and individual responsibilities for developing, implementing, maintaining, revising and ensuring compliance with the SWPPP.
 - b. A site description which includes the activities at the facility; a general location map showing the facility, receiving waters, and outfall locations; and a site map showing the extent of significant structures and impervious surfaces, directions of stormwater flows, and locations of all existing structural control measures, stormwater conveyances, pollutant sources, stormwater monitoring points, stormwater inlets and outlets, **electrical vaults which collect stormwater**, and industrial activities exposed to precipitation such as those associated with materials storage, disposal, and material handling.
 - c. A summary of all pollutant sources, including a list of activities exposed to stormwater, the pollutants associated with these activities, a description of where spills have occurred or could occur, a description of non-stormwater discharges, and a summary of any existing stormwater discharge sampling data.
 - d. A description of structural and non-structural stormwater controls.

- e. A schedule and procedure for implementation and maintenance of the control measures described above and for the quarterly inspections and best management practices (BMPs) described below.
 - f. Sector specific SWPPP provisions included in Sector O (Steam Electric Generating Facilities) of the MSGP.
4. The SWPPP shall document the appropriate BMPs implemented or to be implemented at the facility to minimize the discharge of pollutants in stormwater to waters of the United States and to satisfy any non-numeric technology-based effluent limitations included in this permit. At a minimum, these BMPs shall be consistent with the control measures described in the most current version of the MSGP. In the current MSGP, these control measures are described in Part 2.1.2. Specifically, BMPs must be selected and implemented to satisfy the following non-numeric technology-based effluent limitations:
- a. Minimizing exposure of manufacturing, processing, and material storage areas to stormwater discharges.
 - b. Good housekeeping measures designed to maintain areas that are potential sources of pollutants.
 - c. Preventative maintenance programs to avoid leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters.
 - d. Spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur.
 - e. Erosion and sediment controls designed to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants.
 - f. Runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff.
 - g. Proper handling procedures for salt, materials containing chlorides, or any deicing chemicals that are used for snow and ice control.
5. All areas with industrial materials or activities exposed to stormwater and all structural controls used to comply with effluent limits in this permit, shall be inspected, at least once per month, **including all electrical vaults that are required to be routinely pumped out to a stormwater outfall**, by qualified personnel with one or more members of the stormwater pollution prevention team. Inspections shall begin during the 1st full calendar month after the effective date of this permit. Each inspection must include a visual assessment of stormwater samples (from Outfalls 004, 005, 006 and 007 as required by the permit), which shall be collected within the first sixty (60) minutes of discharge from a storm event, stored in a clean,

clear glass or plastic container, and examined in a well-lit area for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of pollution. The permittee shall document the following information for each inspection and maintain the records along with the SWPPP:

- a. The date and time of the inspection and at which any samples were collected;
 - b. The name(s) and signature(s) of the inspector(s)/sample collector(s);
 - c. If applicable, why it was not possible to take samples within the first 60 minutes;
 - d. Weather information and a description of any discharges occurring at the time of the inspection;
 - e. Results of observations of stormwater discharges, including any observed discharges of pollutants and the probable sources of those pollutants;
 - f. Any control measures needing maintenance, repairs or replacement; and,
 - g. Any additional control measures needed to comply with the permit requirements.
6. The permittee shall amend and update the SWPPP within thirty (30) days of any changes at the facility that result in a significant effect on the potential for the discharge of pollutants to the waters of the United States. Changes which may affect the SWPPP include, but are not limited to, the following activities: a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; a release of a reportable quantity of pollutants as described in 40 CFR §302; or a determination by the permittee or EPA that the SWPPP appears to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with industrial activity.
7. Any amended, modified, or new version of the SWPPP shall be re-certified and signed by the permittee in accordance with the requirements identified in 40 C.F.R. §122.22. The permittee shall also certify, at least annually, that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that the facility is in compliance with this permit. If the facility is not in compliance with any aspect of this permit, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in 40 C.F.R. §122.22. The permittee shall maintain at the facility a copy of its current SWPPP and all SWPPP certifications (the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit, and shall make these available for inspection by EPA and MassDEP. In addition, the permittee shall document in the SWPPP any violation of numerical or non-numerical stormwater effluent limits with a date and description of any corrective actions taken.

I. REOPENER CLAUSE

1. This permit shall be modified, or alternately, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutants not limited in the permit.

J. ELECTRICAL VAULT SAMPLING

The permittee shall conduct a one-time sampling for all of the electrical vaults which were not sampled pursuant to EPA's March 24, 2015 CWA Section 308(a) letter. The permittee shall reference Exhibit B of its "Response to USEPA's March 24, 2015 Request for Information" submittal, which listed the twenty five (25) electrical vaults on the property as identified by the permittee. Since stormwater was sampled for six (6) of these electrical vaults, this requirement shall apply for the remaining nineteen (19) electrical vaults. These samples shall be analyzed for the same parameters which were required by the 2015 308(a) letter which are listed in Permit Attachment C. The sampling results shall be submitted within 180 days of the effective date of the permit.

K. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs and the Use of NetDMR:

Beginning on the effective date of the permit the permittee must submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and MassDEP no later than the 15th day of the month following the completed reporting period. **For a period of three (3) months from the effective date of the permit**, the permittee may submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and MassDEP either in hard copy form, as described in Part I.K.4, or in DMRs electronically submitted using NetDMR. NetDMR is a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection. NetDMR is accessed from: <http://www.epa.gov/netdmr>. **Beginning no later than three (3) months after the effective date of the permit**, the permittee shall begin reporting monthly monitoring data using NetDMR, unless, in accordance with Part I.K.6, the facility is able to demonstrate a reasonable

basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs. The permittee must continue to use the NetDMR after the permittee begins to do so. When a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs to EPA or MassDEP.

2. Submittal of Reports as NetDMR Attachments

After the permittee begins submitting DMR reports to EPA electronically using NetDMR, the permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies, unless otherwise specified in this permit. The permittee shall continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP. (See Part I.K.5. for more information on state reporting.) Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA/OEP and MassDEP

The following requests, reports, and information described in this permit shall be submitted to the EPA/OEP NPDES Applications Coordinator in EPA's Office Ecosystem Protection (OEP).

- a. Transfer of Permit notice
- b. Request for changes in sampling location
- c. Request for reduction in testing frequency
- d. Request for Reduction in WET Testing Requirement
- e. Report on unacceptable dilution water/request for alternative dilution water for WET testing
- f. Change in location, design or capacity of cooling water intake structure
- g. Notification of proposal to add or replace chemicals and bio-remedial agents including microbes
- h. Ichthyoplankton Entrainment Report
- i. Biological Monitoring Report

These reports, information, and requests shall be submitted to EPA/OEP electronically at R1NPDES.Notices.OEP@epa.gov or by hard copy mail to the following address

**U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP NPDES Applications Coordinator
5 Post Office Square - Suite 100 (OEP06-03)
Boston, MA 02109-3912**

Submit hard copies of reports listed above to MassDEP at the following address:

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
1 Winter St.
Boston, Massachusetts 02108**

4. Submittal of Reports in Hard Copy Form

The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to EPA.

- a. Written notifications required under Part II
- b. Notice of unauthorized discharges
- c. Reports and DMRs submitted prior to the use of NetDMR
- d. Unusual Impingement Event

This information shall be submitted to EPA/OES and MassDEP at the following addresses:

**U.S. Environmental Protection Agency
Office of Environmental Stewardship (OES)
Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912**

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
1 Winter St.
Boston, Massachusetts 02108**

**Massachusetts Department of Environmental Protection
Southeast Regional Office
Bureau of Air and Waste
20 Riverside Drive
Lakeville, MA 02347**

5. State Reporting

Unless otherwise specified in this permit, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.K.3 and I.K.4 also shall be submitted to the MassDEP at the following addresses:

**Massachusetts Department of Environmental Protection
Southeast Regional Office
Bureau of Air and Waste
20 Riverside Drive
Lakeville, MA 02347**

Copies of toxicity tests only shall be submitted to:

**Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
8 New Bond Street
Worcester, Massachusetts 01606**

6. Submittal of NetDMR Opt-Out Requests

NetDMR opt-out requests must be submitted in writing to EPA and MassDEP for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request be approved by EPA. All opt-out requests should be sent to the following addresses:

**Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912**

And

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
1 Winter St.
Boston, Massachusetts 02108**

7. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA-New England and to MassDEP. This includes verbal reports and notifications notification which require reporting within 24-hours. (As examples, see Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.) Verbal reports and verbal notifications shall be made to EPA's Office of Environmental Stewardship at: **(617) 918-1510**

L. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 C.M.R. 3.19, are hereby incorporated by reference into this state surface water discharge permit.
2. This authorization also incorporates the state water quality certification issued by MassDEP under §401(a) of the Federal Clean Water Act, 40 CFR §124.53, M.G.L. c. 21, §27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

ATTACHMENT A

**MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL**

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

<http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine¹ (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

¹ For this protocol, total residual chlorine is synonymous with total residual oxidants.
(July 2012)

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST¹

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt \pm 10 percent for all dilutions by adding dry ocean salts
3. Temperature ($^{\circ}$ C)	20 $^{\circ}$ C \pm 1 $^{\circ}$ C or 25 $^{\circ}$ C \pm 1 $^{\circ}$ C, temperature must not deviate by more than 3 $^{\circ}$ C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, <u>\leq 24 hours age range</u>
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> naupli while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	\geq 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (%)

effluent) is required if it is not included in the dilution series.

- | | |
|----------------------------|---|
| 17. Effect measured | Mortality - no movement of body appendages on gentle prodding |
| 18. Test acceptability | 90% or greater survival of test organisms in control solution |
| 19. Sampling requirements | For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection. |
| 20. Sample volume required | Minimum 1 liter for effluents and 2 liters for receiving waters |
-

Footnotes:

- ¹ Adapted from EPA 821-R-02-012.
- ² If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
- ³ When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt \pm 10 % by adding dry ocean salts
3. Temperature	20°C \pm 1°C or 25°C \pm 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	\geq 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

- ¹ Adapted from EPA 821-R-02-012.
- ² If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- ³ When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥ 3 standard deviations for IC25s and LC50 values and \geq two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent^{*1} (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine ^{*2}	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

Superscript:

*1 These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

*2 Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
 - Facility name
 - NPDES permit number
 - Outfall number
 - Sample type
 - Sampling method
 - Effluent TRC concentration
 - Dilution water used
 - Receiving water name and sampling location
 - Test type and species
 - Test start date
 - Effluent concentrations tested (%) and permit limit concentration
 - Applicable reference toxicity test date and whether acceptable or not
 - Age, age range and source of test organisms used for testing
 - Results of TAC review for all applicable controls
 - Permit limit and toxicity test results
 - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at

<http://www.epa.gov/NE/enforcementandassistance/dmr.html>

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

PERMIT ATTACHMENT B BIOLOGICAL MONITORING PROGRAM

1. IMPINGEMENT MONITORING

Impingement monitoring shall begin on the first day of the calendar month following the effective date of the permit and continue through the first day of the calendar month following the termination of electricity generation at the facility, expected to be no later than June 1, 2019, with the exception of those times after termination of condenser cooling withdrawals that PNPS must operate the circulating water pumps.

Impingement monitoring shall be conducted each week during three, non-consecutive eight-hour collections that represent morning, afternoon, and night (e.g. once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm). Impingement sampling shall be conducted using 1/4-inch or smaller stainless steel baskets placed in the screenwash return sluiceway. All fish will be immediately examined for initial condition (live, dead, or injured). All fish shall be identified to the lowest distinguishable taxonomic category, counted, and measured (to the nearest mm total length). In the event of a large impingement event of a school of equivalently sized forage fish, a subsample of 50 fish can be taken for length measurements.

Following termination of condenser cooling withdrawals, PNPS shall conduct impingement monitoring a minimum of once per week only for weeks when PNPS operates one of the circulating water pumps. To the maximum extent practicable, the permittee shall follow the impingement monitoring requirements indicated above. In the event that fewer than three samples, or non-consecutive samples, are conducted, the permittee shall provide an explanation in the Biological Monitoring Report.

For fish determined to be alive or injured at the time of collection, a representative sample of 25% of the total collection for each species (up to a maximum of 50 specimens per species) shall be placed in a holding tank supplied with continuously running ambient seawater. Latent survival shall be determined after 48 hours after which any live fish shall be safely returned to the subtidal waters of Cape Cod Bay.

2. ENTRAINMENT MONITORING

Entrainment monitoring shall begin on the first day of the calendar month following the effective date of the permit. From the commencement of entrainment monitoring until the last day of the calendar month following termination of the cooling water withdrawals for the main condenser, entrainment monitoring shall be conducted weekly during the months of March through October, and twice per month during November, December, January and February. Beginning the first day of the calendar month following termination of the cooling water withdrawals for the main condenser, entrainment monitoring shall be conducted twice per month. Three entrainment

samples shall be collected each sampling week representing morning, afternoon and night (e.g., once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm).

Entrainment samples shall be collected from a representative location within the intake structure if feasible. Alternatively, if it is not feasible to conduct sampling from the intake bay, the permittee may collect entrainment samples from the discharge canal.

Sampling shall be conducted using a 0.5-mm mesh, 60-cm diameter collection net with a flow meter mounted in the mouth of the net. Filtration volume shall be recorded for each event and each sample shall represent approximately 100 square meters (m³) of water. After each sample, the collection nets shall be washed down and the sample transferred from the net to a jar containing sufficient formalin to produce a 5 to 10% solution. In the laboratory, all fish eggs and larvae shall be identified to the lowest distinguishable taxonomic category and counted.

3. BIOLOGICAL MONITORING REPORT

Annual Biological Monitoring Reports with results of the above monitoring (Items A, B, and C) will be submitted to the EPA and MassDEP at the addresses in the permit by May 15th each year, with the April Discharge Monitoring Report (DMR).

Results of the impingement monitoring shall be reported as twenty-four hour and monthly totals based on actual and design intake flows. The permittee shall report total lengths, initial survival, and latent survival for each species. Annual impingement rates shall be extrapolated from the sampling events.

Results of entrainment monitoring shall be reported as total number of eggs and larvae entrained. Ichthyoplankton counts shall be converted to densities per 100 m³ based on the flow through the sampling net. Entrainment losses shall be converted from weekly estimates of density per unit volume, to monthly and yearly loss estimates based on the actual and permitted cooling water withdrawals. In addition, loss estimates should be converted to adult equivalents for species for which regionally specific larval survival rates are available. Winter flounder larvae collected should be “staged”(i.e., identified as belonging to one or another of four larval life stages based on physical characteristics of the larvae) as follows:

- Stage 1 – from hatching until the yolk sac is fully absorbed (approximately 2.3 to 2.8 mm TL)
- Stage 2 – from the end of stage 1 until a loop or coil forms in the gut (approximately 2.6 to 4 mm TL)
- Stage 3 – from the end of stage 2 until the left eye migrates past the midline of the head during transformation (approximately 3.5 to 8 mm TL)
- Stage 4 – from the end of stage 3 until the full complement of juvenile characteristics is present (approximately 7.3 mm to 8.2 mm TL)

Equivalent adult estimates for winter flounder losses will utilize the staged larval data for the larval portion of the facility's entrainment loss estimates.

4. MARINE FISHERIES MONITORING

Cape Cod Bay serves as spawning, nursery, and feeding habitat for winter flounder (*Pseudopleuronectes americanus*), a commercially and recreationally valuable species. Impingement and entrainment monitoring at PNPS have demonstrated mortality of winter flounder as a result of operation of its cooling water intake structure. Since 2000, PNPS has continued monitoring that the Massachusetts Division of Marine Fisheries (MassDMF) began in 1995 to estimate the size of the winter flounder population in the vicinity of PNPS and the proportion of this population killed as a result of entrainment in the CWIS.

PNPS shall continue this monitoring (the "Area Swept Estimate") using the methodology described in the Winter Flounder Area Swept Estimate Western Cape Cod Bay Report included with the most recent annual impingement and entrainment report during each full calendar year following the effective date of this permit that PNPS generates electricity. Results of this study shall be included with the annual Biological Monitoring Report.

Attachment C

Summary of Monitoring Parameters for Electrical Vault Sampling

	<u>Parameter</u>	<u>Minimum Level (ML) of detection</u> ¹
	1. Total Suspended Solids (TSS)	5 mg/L
	2. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L
	3. Cyanide (CN)	10 ug/L
	4. Benzene (B)	2 ug/L
	5. Toluene (T)	2 ug/L
	6. Ethylbenzene (E)	2 ug/L
	7. (m,p,o) Xylenes (X)	2 ug/L
	8. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) ²	2 ug/L
	9. Naphthalene	2 ug/L
	10. Total Phenols	50 ug/L
	11. Total Phthalates (Phthalate esters)	5 ug/L
	12. Bis (2-Ethylhexyl) Phthalate	5 ug/L
	13. Total Polychlorinated Biphenyls (PCBs)	0.5 ug/L

	<u>Metal parameter</u>	<u>Total Recoverable Metal</u> ³ - ML
	14. Antimony	10 ug/l
	15. Arsenic	20 ug/l
	16. Cadmium	10 ug/l
	17. Chromium III (trivalent)	15 ug/l
	18. Chromium VI (hexavalent)	10 ug/l
	19. Copper	3 ug/l
	20. Lead	0.5 ug/l
	21. Mercury	0.2 ug/l
	22. Nickel	20 ug/l

	<u>Metal parameter</u>	<u>Total Recoverable Metal³ - ML</u>
	23. Selenium	20 ug/l
	24. Silver	10 ug/l
	25. Zinc	15 ug/l
	26. Iron	20 ug/l

Footnotes:

¹ Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

² BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

³ With the exception of Chromium III and Chromium VI

NPDES PART II STANDARD CONDITIONS
(January, 2007)

TABLE OF CONTENTS

A. GENERAL CONDITIONS	Page
1. <u>Duty to Comply</u>	2
2. <u>Permit Actions</u>	2
3. <u>Duty to Provide Information</u>	2
4. <u>Reopener Clause</u>	3
5. <u>Oil and Hazardous Substance Liability</u>	3
6. <u>Property Rights</u>	3
7. <u>Confidentiality of Information</u>	3
8. <u>Duty to Reapply</u>	4
9. <u>State Authorities</u>	4
10. <u>Other laws</u>	4
 B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS	
1. <u>Proper Operation and Maintenance</u>	4
2. <u>Need to Halt or Reduce Not a Defense</u>	4
3. <u>Duty to Mitigate</u>	4
4. <u>Bypass</u>	4
5. <u>Upset</u>	5
 C. MONITORING AND RECORDS	
1. <u>Monitoring and Records</u>	6
2. <u>Inspection and Entry</u>	7
 D. REPORTING REQUIREMENTS	
1. <u>Reporting Requirements</u>	7
a. Planned changes	7
b. Anticipated noncompliance	7
c. Transfers	7
d. Monitoring reports	8
e. Twenty-four hour reporting	8
f. Compliance schedules	9
g. Other noncompliance	9
h. Other information	9
2. <u>Signatory Requirement</u>	9
3. <u>Availability of Reports</u>	9
 E. DEFINITIONS AND ABBREVIATIONS	
1. <u>Definitions for Individual NPDES Permits including Storm Water Requirements</u>	9
2. <u>Definitions for NPDES Permit Sludge Use and Disposal Requirements</u>	17
3. <u>Commonly Used Abbreviations</u>	23

NPDES PART II STANDARD CONDITIONS
(January, 2007)

PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

Note: See 40 CFR §122.41(a)(2) for complete “Duty to Comply” regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including “sludge-only facilities”), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

- a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).
- b. Claims of confidentiality for the following information will be denied:
 - (1) The name and address of any permit applicant or permittee;
 - (2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

- (1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

- (2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- (3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

NPDES PART II STANDARD CONDITIONS

(January, 2007)

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
 - (4) The permittee complied with any remedial measures required under B.3. above.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by

NPDES PART II STANDARD CONDITIONS

(January, 2007)

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. **Planned Changes.** The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. **Anticipated noncompliance.** The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. **Transfers.** This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

NPDES PART II STANDARD CONDITIONS

(January, 2007)

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
 - (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

- e. Twenty-four hour reporting.
 - (1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
 - (b) Any upset which exceeds any effluent limitation in the permit.
 - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
 - (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

- f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.
 - h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.
2. Signatory Requirement
- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)
 - b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.
3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in “approved States”, including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of “daily discharges” over a calendar month calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

Average weekly discharge limitation means the highest allowable average of “daily discharges” measured during the calendar week divided by the number of “daily discharges” measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

- (d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- (e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a “discharge” which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by “approved States” as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA’s.

Discharge of a pollutant means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source”, or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See “Point Source” definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

NPDES PART II STANDARD CONDITIONS
(January, 2007)

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any “indirect discharger.”

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States”, the waters of the “contiguous zone”, or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise “effluent limitations”.

EPA means the United States “Environmental Protection Agency”.

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

NPDES PART II STANDARD CONDITIONS

(January, 2007)

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable “daily discharge” concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as “maximum concentration” or “Instantaneous Maximum Concentration” during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean “a value that shall not be exceeded” during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of “Maximum Daily Discharge” and “Average Daily Discharge” concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an “approved program”.

New Discharger means any building, structure, facility, or installation:

- (a) From which there is or may be a “discharge of pollutants”;
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source”; and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site”.

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a “site” under EPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

NPDES PART II STANDARD CONDITIONS
(January, 2007)

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants”, the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means “National Pollutant Discharge Elimination System”.

Owner or operator means the owner or operator of any “facility or activity” subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an “approved” State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

- (a) Sewage from vessels; or
- (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a “POTW”.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a “State” or “municipality”.

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a “primary industry category”.

Section 313 water priority chemical means a chemical or chemical category which:

- (1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
- (2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
 - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
 - (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
 - (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of “sludge use or disposal practices” any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, “domestic sewage” includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a “treatment works treating domestic sewage”, where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;
- (b) All interstate waters, including interstate “wetlands”;
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

NPDES PART II STANDARD CONDITIONS

(January, 2007)

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to: domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl ₂	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

NPDES PART II STANDARD CONDITIONS
(January, 2007)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M ³ /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

NPDES PART II STANDARD CONDITIONS
(January, 2007)

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	“Whole effluent toxicity” is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	“Chronic (Long-term Exposure Test) – No Observed Effect Concentration”. The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	“Acute (Short-term Exposure Test) – No Observed Effect Concentration” (see C-NOEC definition).
LC ₅₀	LC ₅₀ is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC ₅₀ = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.