

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 1  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET AND SUPPLEMENTAL INFORMATION

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT TO DISCHARGE NON-CONTACT COOLING WATER (NCCW)  
TO CERTAIN WATERS OF THE COMMONWEALTH OF MASSACHUSETTS AND  
THE STATE OF NEW HAMPSHIRE**

<b>I.</b>	<b>Coverage under this Permit .....</b>	<b>3</b>
	A. Introduction.....	3
	B. Coverage of General Permits .....	6
	C. Eligibility .....	9
	D. Exclusions.....	9
<b>II.</b>	<b>Permit Basis: Statutory and Regulatory Authority.....</b>	<b>11</b>
	A. Statutory Requirements.....	11
	B. Technology Based Effluent Limitations .....	11
	C. Water Quality Based Effluent Limitations .....	11
	D. Antidegradation Provisions.....	12
	E. Monitoring and Reporting Requirements .....	13
	F. Other Conditions.....	13
<b>III.</b>	<b>Effluent Limitations.....</b>	<b>14</b>
	A. Flow .....	14
	B. Temperature .....	14
	C. pH.....	15
	D. Total Residual Chlorine (TRC).....	15
	E. Metals and Inorganic Anions.....	16
	F. Whole Effluent Toxicity Testing (LC-50 and C-NOEC) .....	18
	G. Dilution Factors and Mixing Zones .....	18
<b>IV.</b>	<b>Cooling Water Intake Structure Requirements (CWIS) .....</b>	<b>20</b>
	A. Background.....	20
	B. Requirements .....	21
<b>V.</b>	<b>Application Requirements and Notice of Intent .....</b>	<b>28</b>
	A. General NOI Information Requirements.....	28
	B. NOI Timeframes .....	28
	C. NOI Information Requirements Related to the CWIS and BTA .....	28
	D. Essential Fish Habitat .....	28
	E. Endangered Species .....	34
	F. Historic Preservation.....	37
	G. Requiring Coverage under an Individual Permit or Other General Permit .....	38
	H. EPA Determination of Coverage .....	39
<b>VI.</b>	<b>Monitoring, Recordkeeping, and Reporting Requirements.....</b>	<b>40</b>
	A. NetDMR.....	40

B. Massachusetts Reporting Requirements .....	41
C. New Hampshire Reporting Requirements .....	41
<b>VII. Administrative Requirements.....</b>	<b>42</b>
A. Termination of Coverage .....	42
B. Continuation of the Expired General Permit .....	42
<b>VIII. Other Legal Requirements.....</b>	<b>43</b>
A. Section 401 Certifications.....	43
B. The Coastal Zone Management Act .....	43
<b>IX. Public Participation .....</b>	<b>47</b>

## I. Coverage under this Permit

### A. Introduction

The Director of the Office of Ecosystem Protection, EPA-New England, is issuing notice of availability of the draft NPDES General Permit for facilities that discharge non-contact cooling water (NCCW) to certain waters of the Commonwealth of Massachusetts and the State of New Hampshire. This permit will replace the NCCW General Permit that expired on July 31, 2013 (the “expired” General Permit). Currently, there are approximately 48 facilities covered by the expired General Permit. This draft General Permit includes limits and monitoring requirements for flow, temperature, pH, and other parameters summarized below.

This fact sheet contains a summary of:

- Differences between the proposed draft General Permit and the expired General Permit;
- Types of discharges that may be covered;
- Proposed effluent limits;
- Proposed requirements for cooling water intake structures (CWIS);
- Monitoring requirements;
- Instructions for providing public comments or requesting a public hearing; and
- Legal information supporting this General Permit.

The Draft General Permit proposed by EPA is largely the same as the expired General Permit. Modifications are primarily intended to update information, improve clarity, update procedures for continuing coverage at the end of the permit term, and standardize language used throughout the permit. Specifically, the following are the changes made to the expired General Permit in the Draft General Permit:

- Part 1 and 2: The following language was added to specify requirements for facilities that begin to use potable water as an alternate source of NCCW:

*If a facility uses municipal drinking water as an alternate source of NCCW after submitting its NOI, but the municipal water source is not indicated in the NOI, the facility must submit a Notice of Change (NOC) (available in Appendix 8) to EPA and the State Agency prior to using this alternate source to obtain a TRC effluent limit and related reporting requirements.*

- Parts 1 and 2: In section 1.1 and 2.1, sampling requirements for continuous monitoring devices to monitor for effluent and receiving water temperature and pH were added to give permittees greater flexibility in sampling. The following requirements were added as a footnote to the Discharge Limits and Monitoring Requirements tables to clarify reporting requirements for facilities that measure temperature with a continuous monitoring device:

*Continuous monitoring devices may be used to measure effluent and water body temperature and pH. When required, the maximum temperature and monthly average temperature shall be reported based on the continuous dataset.*

- Parts 1.1 and 3.1: Discharges of NCCW in Massachusetts over 1.0 MGD will be eligible for coverage under this permit on a case-by-case basis subject to review and approval by EPA and MassDEP.
- Part 2: Total Residual Chlorine discharge limitations in New Hampshire were updated to take into account the permittee's effluent dilution in the receiving water. The new chlorine limits will be based on the same TRC dilution calculations and water quality standards used for facilities in Massachusetts in the expired permit and continued in the new draft permit. For more details, see Part 2.2.5 of the draft permit or Section III.D. of this Fact Sheet.
- Part 3.1: Eligibility requirements were organized in bullet form to make for easier determination of the allowable discharges under the draft permit:
  1. *The facility discharges less than or equal to 1.0 million gallons per day (MGD) of NCCW (unless the facility receives approval for a larger NCCW discharge from EPA and the appropriate state);*
  2. *The facility has cooling water intake structure (CWIS) surface water withdrawals of less than or equal to 1.0 MGD; and*
  3. *The water used for cooling at the facility does not come into direct contact with any raw material, intermediate product, finished product, or waste product (other than heat).*
- Part 3: To increase clarity in the permit, exclusions to the permit related to the Endangered Species Act and the National Historic Preservation Act were moved from Section 3.3 (Specific Discharges Excluded from Coverage) to Section 3.4 (Additional Eligibility Requirements)
- Part 3: In section 3.3, the exclusions of discharges to Ocean Sanctuaries in Massachusetts and territorial seas were removed to avoid redundancy. EPA still exercises the authority to require facilities to obtain coverage under an individual permit when appropriate.
- Part 3: In section 3.3.7, the following language was added in order to clarify exclusions related to 303(d) listed waters in Massachusetts and New Hampshire:

*Permittees must include information in their NOI about impairments to receiving waterbodies. Upon review of the NOI, EPA may require the permittee to conduct additional effluent sampling to determine if the NCCW discharge is contributing to the receiving waterbody impairment. See Fact Sheet for more information.*

*Massachusetts 2012 list of impaired waters available at:*

*<http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>*

*New Hampshire 2010 list of impaired waters available at:*

[http://des.nh.gov/organization/divisions/water/wmb/swqa/2010/documents/2010\\_final\\_sub\\_303d.pdf](http://des.nh.gov/organization/divisions/water/wmb/swqa/2010/documents/2010_final_sub_303d.pdf).

- Part 3: Section 3.4 was renamed “Additional Eligibility Requirements” to clarify additional determinations that must be made by the applicant based on appendices 2 and 3 to ensure compliance with ESA and NHPA requirements, respectively.
- Part 3: In section 3.4 updates were made to reflect requirements related to the Endangered Species Act, the National Historic Preservation Act, and areas of Critical Environmental Concern in Massachusetts.
- Part 4: The sections have been reorganized for clarity, but with no significant changes to the compliance requirements for CWISs.
- Part 5: Section 5.4 was updated to include radionuclides for analysis of groundwater sources of NCCW, specifically:

*Gross Alpha  
Radium 226 + Radium 228  
Uranium*

More information is available in Part III.E. of this Fact Sheet.

- Part 5: Section 5.14 was updated to explain the process for receipt of NOIs by EPA. The new language is as follows:

*All NOIs received by EPA, that EPA proposes to authorize will be posted on the EPA NPDES NCCW GP website, <http://www.epa.gov/region1/npdes/nccwgp.html>, for a minimum of 30 days. Following the 30 day period, EPA will either grant authorization, request additional information, or deny authorization under this permit and require submission of an application for an individual NPDES permit. A facility will be authorized to discharge under the terms and conditions of this permit upon written receipt of notice of authorization from EPA.*

- Part 6: Section 6.1 has been added to the permit to reflect the requirement to submit DMRs electronically using NetDMR instead of through paper copy DMRs. The NetDMR system was not available when the 2008 permit was issued. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described in Section 6.1 of the general permit.
- Part 6: NetDMR and, when appropriate, paper copy DMR submittals for facilities in Massachusetts are now required on a monthly basis instead of quarterly. Facilities that discharge intermittently and do not discharge during a particular month are required to submit a DMR indicating no discharge for that month. Facilities in New Hampshire must continue to submit reports on a monthly basis.

- Part 8 of the 2008 Permit, which included standard permit conditions, has been removed from the body of the permit and added as an attachment to this permit.
- Attachment A: Standard Permit Conditions was added to this General Permit.
- Attachment B: Example engineering and dilution calculations were updated and consolidated from Attachment A and B in the 2008 General Permit to provide greater clarity and specificity for calculations necessary to compute discharge limits in the General Permit. The receiving water temperature change calculations for facilities in Massachusetts were updated for greater accuracy. Calculations of receiving water temperature change for facilities using non-surface water sources now require receiving waterbody temperature data.
- Appendix 8, the Notice of Change (NOC) format, was added as a resource to this permit. Language throughout the General Permit was added to encourage use of the NOC format to notify EPA of changes to facility conditions, including:
  - Addition or substitution of pH adjustment or dechlorination chemicals,
  - Use of potable water as a NCCW source,
  - Changes in sampling/outfall location,
  - Changes in CWIS location/design, and
  - Changes to administrative information.

## **B. Coverage of General Permits**

Section 301(a) of the Clean Water Act (the Act or CWA) provides that the discharge of pollutants is unlawful except in accordance with a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the Act. Although such permits are often issued to individual discharges, EPA's regulations authorize the issuance of "general permits" to categories of discharges (see 40 CFR § 122.28). Violations of a condition of a general permit constitute a violation of the Act and subject the discharger to the penalties in § 309 of the Act.

The Director of a NPDES permit program is authorized to issue a general permit if there are a number of point sources operating in a geographic area that:

- Involve the same or substantially similar types of operations;
- Discharge the same types of wastes;
- Require the same effluent limitations or operating conditions;
- Require the same or similar monitoring requirements; and
- In the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

Non-contact cooling water is water that is used to reduce temperature and that does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. Since NCCW does not come into contact with manufacturing or processing

materials, EPA believes that discharges from various sources are similar in composition (i.e., they contain only thermal pollution) and require similar controls. Therefore, EPA believes that sources that discharge only NCCW warrant coverage under a general permit.

EPA has determined that the draft General Permit meets the criteria for issuing a general permit found in 40 CFR §122.28(a)(2)(ii). These criteria are summarized below.

a) Involve the same or substantially similar types of operations

All of the facilities eligible for the General Permit have operations requiring cooling to reduce heat, and all facilities utilize and discharge a limited volume of water for this cooling in a manner such that the cooling water does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. Based on EPA's experience with the expired NCCW General Permit, EPA anticipates the majority of facilities covered use non-contact cooling water in one or more manufacturing operations and/or air conditioning units.

b) Discharge the same types of wastes

All dischargers eligible for authorization under the General Permit discharge non-contact cooling water which is not co-mingled with other process water before either monitoring or discharge. If monitored prior to co-mingling with other process water, all other process water discharges must be covered by another NPDES permit. Therefore, as in the expired NCCW General Permit, the discharges covered by this General Permit will be of the same type of waste. The most notable pollutant in this discharge is heat. Other pollutants, such as chlorine or metals, may be of concern when they are expected constituents of the water that is used for cooling, such as potable water or groundwater. The draft General Permit contains provisions for these potential situations.

c) Require the same effluent limitations or operating conditions

All discharges covered by the permit are subject to effluent limitations for flow, temperature and pH. Temperature effluent limits are prescribed based on the category of the receiving water, and additional water quality-based limitations are prescribed in certain defined circumstances when municipal drinking water is used for cooling.

Other operating conditions include the requirement that permittees that withdraw surface water as the source of cooling water satisfy the Best Technology Available (BTA) standard applicable to cooling water intake structures (CWISs) under CWA § 316(b). As in the expired General Permit, BTA is required in all such cases. In the draft General Permit, however, to satisfy the BTA, each facility must meet certain uniform requirements stated in Part 4.2.1 of the General Permit. The facility also must specify in its NOI how it will satisfy these BTA requirements. In all cases, the same uniform BTA requirements described in Part 4.2.1 apply to the CWIS, and the capacity of the CWIS is limited. The BTA requirements address aspects of the design, construction, location and/or capacity of the CWIS to minimize adverse impacts. Low volume cooling water

withdrawal limits (no greater than 1.0 MGD) and low intake velocities (no more than 0.5 feet per second) are operating conditions that apply to all facilities with CWISs seeking coverage under the NCCW General Permit.

d) Require the same or similar monitoring

Uniform permit monitoring requirements are found in Part 1.1 for Massachusetts facilities and in Part 2.1 for New Hampshire facilities. The monitoring frequencies and sample types for all effluent characteristics are identical. For all facilities with CWISs, there is an impingement monitoring requirement. This monitoring requirement is similar, but not the same, for all facilities due to the site-specific variations in the construction of water intake structures.

e) In the opinion of the Director, discharges are more appropriately controlled under a general permit than under individual permits

Given the similar nature of these facilities and their discharges and CWISs, as well as the efficiencies of regulating similar facilities under uniform conditions, EPA has determined that these small non-contact cooling water discharges and CWISs are more appropriately handled under a general permit than under individual permits. In recognition of variations in operations and locations of various facilities, EPA has specified in the General Permit and Fact Sheet numerous situations where an individual permit is required or may be required by EPA, and these provisions have been retained in the 2014 draft General Permit.

In conclusion, EPA has determined that, for the class of dischargers meeting the draft General Permit eligibility requirements, coverage under a general permit is appropriate. This draft General Permit is an update of EPA Region I's administratively continued NCCW General Permit that expired on July 31, 2013. EPA issued a NCCW General Permit in 1995, in 2000, and in 2008. Based on EPA's experience with the facilities covered under the 2008 NCCW General Permit, variations in permitting conditions among permittees stem most often from variations in the source water and receiving water rather than from variations in the type of operations, the type of discharges, type of CWIS, or effluent limitations.

Facilities located in Massachusetts and New Hampshire authorized by this General Permit will be allowed to discharge up to 1 million gallons per day (MGD) of NCCW. On a case-by-case basis, larger volume discharges may be covered by this permit if EPA and the appropriate state approve the discharge. Effluent flow for each facility covered by the permit is limited to the flow reported on the Notice of Intent (NOI).

The discharge of surface water or groundwater that is used as source water in open loop or closed loop geothermal heat pumps (sometimes described as ground source heat pumps) is allowed under the NCCW General Permit if the source water does not contain or come in direct contact with any pollutants other than heat and if all other requirements of the General Permit are met. If groundwater is the source of the cooling water, in whole or in part, the NOI sample analysis requirements described in Section 5.4 of the General Permit apply.

### **C. Eligibility**

Under this General Permit, owners and operators of facilities that discharge up to 1 million gallons per day of NCCW and are located in Massachusetts and New Hampshire are eligible to be covered by this permit. To be covered by this permit the applicant must submit a NOI to both EPA and the appropriate State. The NOI must contain all the information required in Part 4 of the draft General Permit, CWA § 316(b) Requirements for the Design and Operation of Cooling Water Intake Structures; and all the information required in Appendix 4. The NOI must state that the discharge meets the applicable requirements of the 2014 General Permit and that the applicant is requesting coverage under this General Permit. Permittees are encouraged to use the NOI format provided in Appendix 5 of the NCCW General Permit.

The facility's discharge will not be covered under the 2014 NCCW GP until the facility receives written authorization to discharge from EPA.

Facility owners/operators must submit a NOI if they are seeking coverage under this General Permit for the first time or if the facility received coverage under the NCCW General Permit that expired on July 31, 2013.

Any facility operating under an effective (unexpired) individual NPDES permit may request that the individual permit be terminated and that coverage under the General Permit be granted. If EPA revokes the individual permit, the General Permit would apply to the discharge. Facilities with expired individual permits that have been administratively continued may also apply for coverage under this General Permit. When coverage is granted, the expired individual permit is no longer in effect.

### **D. Exclusions**

The draft General Permit excludes specific discharges from coverage under the permit including:

- Facilities whose discharge(s) causes a violation of the water quality standards of the receiving water;
- Facilities that add chemicals to their discharge other than non-toxic chemicals used to adjust pH or for dechlorination;
- Facilities whose discharge(s) may adversely affect federal threatened or endangered species or its critical habitat;
- Discharges to Outstanding National Resource Waters
- Any new or increased discharge to designated Wild and Scenic Rivers;
- Any new or increased discharge to other waters unless the discharge is shown to be consistent with the state's anti-degradation policies or the New Hampshire Water Conservation Rules (Env-Ws 390, or as amended);
- Discharges to Class A waters in New Hampshire;
- Discharges to Areas of Critical Environmental Concern in Massachusetts unless both EPA New England and MassDEP review and approve the discharge.

- Discharges to areas designated under the Essential Fish Habitat Act, unless the requirements described in this Fact Sheet are met.
- Discharges to publicly owned treatment works (POTWs)
- Facilities that require an individual permit based on the Director's consideration of the factors listed in section 5.11 of the General Permit.

This General Permit will not be available to "New Source" dischargers as defined in 40 CFR § 122.2 due to the site-specific nature of the environmental review required by the National Environmental Policy Act of 1969 (NEPA), 33 U.S.C. 4321 et seq. for those facilities. "New Sources" must comply with New Source Performance Standards (NSPS) and are subject to the NEPA process in 40 CFR § 6.600. Consequently EPA has determined that it would be more appropriate to address "New Sources" through the individual permit process.

This General Permit will not be available to new facilities (including new offshore oil and gas extraction facilities), as defined in 40 CFR §125.83, that have a design intake flow greater than two (2) million gallons per day and at least one cooling water intake structure that uses at least 25 percent of the water it withdraws for cooling purposes. This is because these new facilities have cooling water intakes structures (CWIS) that are regulated under the Phase I and/or Phase III regulations for CWIS. (See 40 CFR § 125, Subpart I.) This is further explained below. Consequently, for such a facility that is otherwise eligible for coverage under this General Permit, EPA has determined that it would be more appropriate to authorize discharges and select the best technology available for the CWIS with an individual permit.

## **II. Permit Basis: Statutory and Regulatory Authority**

### **A. Statutory Requirements**

The CWA prohibits the discharge of pollutants to waters of the United States without a NPDES permit, unless the discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This NCCW GP was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations.

During development of this draft General Permit, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the Expired NCCW GP. The regulations governing the NPDES permit program are generally found at 40 CFR §§ 122, 124, 125, and 136. The general conditions of the NCCW GP are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of § 308(a) of the CWA in accordance with 40 CFR § 122.41(j), § 122.44(i) and § 122.48.

### **B. Technology Based Effluent Limitations**

Subpart A of 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under § 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under §§ 301(b) and 402 of the CWA (See 40 CFR § 125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants.

EPA has not promulgated National Effluent Guidelines for those discharges authorized by the NCCW GP. In the absence of effluent guidelines for this industry, technology-based standards are determined by the permit writer on a case-by-case basis, in accordance with the statutory factors specified in CWA §§ 301(b)(2) and 304(b). These site-specific, technology-based effluent limitations reflect the best professional judgment (BPJ) of the permit writer under 40 CFR 125.3(c)(2), taking into account the same statutory factors EPA would use in promulgating a national categorical rule, but considering unique factors relating to the applicant.<sup>1</sup>

### **C. Water Quality Based Effluent Limitations**

Water quality-based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to

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<sup>1</sup> U.S. EPA, 2010. "NPDES Permit Writers' Manual," Page 5-46, EPA-833-K-10-001, September 2010.

maintain or achieve state or federal water quality standards (See § 301(b)(1)(C) of the CWA). Water quality standards consist of three parts: 1) beneficial designated uses for a surface water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

The effluent limits established in the NCCW GP assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. The effluent limits established in the permit are based on the Massachusetts Water Quality Standards 314 CMR 4.05 and New Hampshire Water Quality Standards Env-Wq 1703 in accordance with RSA 485-A:8. For discharges in Massachusetts, 314 CMR 4.05(3)(a-b) and 4.05(4)(a-b) establish standards for Class A, B, SA, and SB waters in Massachusetts. For discharges in New Hampshire, RSA 485-A:8 II. states that “Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class”. In the absence of numeric temperature limits in New Hampshire Water Quality Standards, the numeric temperature limits in Massachusetts Water Quality Standards are included in the effluent limits for facilities in both Massachusetts and New Hampshire under this General Permit. EPA has determined, with NHDES concurrence, that the effluent temperature limits for cold and warm water fisheries are protective of the designated uses for Class B waters in New Hampshire.

For those discharges which are not granted coverage under this permit because the discharge contains pollutants in quantities which represent reasonable potential to cause or contribute to violations of water quality standards, the discharger must apply for an individual NPDES permit.

#### **D. Antidegradation Provisions**

The conditions of the General Permit reflect the goals of the CWA and EPA to achieve and maintain water quality standards. The environmental regulations pertaining to the State antidegradation policies which protect the States’ surface waters from degradation of water quality are found in the following provisions: Massachusetts Water Quality Standards 314 CMR 4.04 Antidegradation Provisions and New Hampshire RSA 485-A:8, VI Part Env-Ws 1708 “Antidegradation”.

This General Permit does not apply to any new or increased discharge to receiving waters unless the discharge is shown to be consistent with the States’ antidegradation policies. This determination shall be made in accordance with the appropriate State antidegradation implementation procedures for this General Permit. Applications for all new and increased point source discharges to surface waters of Massachusetts shall be subject to the Implementation Procedures for the Antidegradation Provision of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, dated 10/21/2009 (available at <http://www.mass.gov/eea/docs/dep/water/laws/a-thru-h/antideg.pdf> ). EPA will not authorize such new or increased discharges under the NCCW GP until it receives a favorable antidegradation review and certification from the appropriate state.

As part of the § 401 certification process, each state will make an antidegradation review of the NCCW GP before its final issuance and inform EPA of the results of the review.

### **E. Monitoring and Reporting Requirements**

Operators of facilities that discharge NCCW under the authority of the final General Permit will be required to submit, both to EPA-New England and to the appropriate state authority, a Discharge Monitoring Report (DMR) containing effluent data. The frequency of reporting is determined in accordance with each state's provisions as described at Part 6 (Monitoring, Reporting and Recordkeeping Requirements) of the General Permit. The monitoring requirements have been established to yield data representative of the discharge under authority of CWA § 308(a) and 40 CFR §§ 122.41(j), 122.44(i) and 122.48, and as certified by the State.

Facilities in New Hampshire and Massachusetts that discharge intermittently and do not discharge NCCW during a particular month must submit a DMR for that month indicating no discharge occurred to EPA and the appropriate state. Annual reports of no discharge will no longer be accepted in Massachusetts.

The Draft Permit includes new provisions related to DMR submittal through NetDMR, a national web-based tool that allows permittees to submit DMRs electronically via a secure internet application to EPA. NetDMR allows participants to discontinue mailing in hard copy DMRs. For more information on the timeline for NetDMR implementation and opt-out requests from the system, see section VI.A. of this Factsheet.

### **F. Other Conditions**

Standard condition requirements that must be included in all NPDES permits are found at 40 CFR §§ 122.41 and 122.42. Attachment A to the General Permit includes these requirements.

### **III. Effluent Limitations**

Regarding the discharges from the facilities covered by this permit, EPA is primarily concerned with the impacts of temperature (heat) and pH on the receiving water due to the discharge of NCCW. However, total residual chlorine (TRC) is also a concern. Although facilities that add water treatment chemicals (other than non-toxic chemicals for pH adjustment and/or dechlorination) to the NCCW are not eligible for coverage, many facilities use municipal drinking water, which contains residual chlorine, for cooling. Therefore, this permit contains limits for TRC for such facilities, in addition to limits on temperature and pH. If, after submitting its NOI, a facility uses municipal drinking water as an alternate source of NCCW, the facility should submit a NOC prior to using this alternate source to obtain a TRC effluent limit and related reporting requirements. See §§ 1.2.5 and 2.2.5 of the General Permit.

The effluent limitations section includes the numeric technology-based and water-quality based limits for all discharges authorized in the NCCW GP, along with the non-numeric effluent limits and best management practices (BMPs) for these facilities.

#### **A. Flow**

Monthly average and daily maximum flow limits for each facility will be the values reported by the facility on the NOI up to 1 MGD. Facilities that meet the other requirements of the NCCW GP may obtain coverage for discharges over 1 MGD based on EPA and state review and approval. The NCCW GP is intended for facilities with small NCCW discharges (less than 1 MGD) that are not expected to impact surface water quality due to their high dilution factors and the effluent limits set forth in the permit. However, if a facility discharges only NCCW in volumes greater than 1 MGD, EPA and the appropriate state will review the discharge to determine whether the discharge is eligible for coverage under this General Permit.

#### **B. Temperature**

The effluent limits for temperature remain unchanged in the proposed permit. The temperature limits were established to be consistent with narrative and numeric water-quality standards in New Hampshire and Massachusetts.

EPA has not developed National Effluent Guidelines solely for NCCW. In the absence of published effluent guidelines, permit writers are authorized to develop technology-based limits using best professional judgment (BPJ) on a case-by-case basis. In the case of this General Permit, it is impracticable for EPA to develop technology-based limits for every discharge. However, EPA reserves the right to require facilities to apply for individual permits in the case where EPA believes technology-based limits are appropriate. It should be noted that facilities seeking alternative limits from the water-quality based limits (i.e., a § 316(a) variance) in this permit may be required to apply for an individual permit. Therefore, EPA has established effluent limits that meet water quality standards for this General Permit.

## **C. pH**

The effluent limits for pH in the Draft Permit are established to be consistent with water quality standards in New Hampshire and Massachusetts; these limits are continued from the expired NCCW GP. Based on water-quality standards, the Draft Permit contains the following limits for the indicated waterbody classifications.

Massachusetts Class A and B: 6.5 – 8.3 standard units

Massachusetts Class SA and SB: 6.5 – 8.5 standard units

New Hampshire Class B: 6.5 – 8.0 standard units

EPA, with State approval, may expand the pH range to the federal standard of 6.0-9.0 standard units (s.u.), where the more restrictive pH limits cannot be consistently achieved by the treatment facility, and where receiving water quality and dilution characteristics allow state water quality standards to be achieved. In addition, facilities in New Hampshire may demonstrate that their discharge falls within 0.5 s.u. of the receiving waterbody pH to expand the pH range for the facility's discharge (see part 2.3.1 of the permit).

Sources of data that could be used to justify a change in the pH range limit include, but are not limited to, sampling results from the discharge, sampling results from the ambient receiving water, and dilution and/or mixing zone calculations.

A pH analysis of the effluent is also required to assess the potential for the water to dissolve and carry metals from metal piping used to transport the water for non-contact cooling to the receiving water.

Chemicals may be used for pH neutralization, provided that EPA and the appropriate state are notified of its use in either the NOI or in a subsequent communication.

## **D. Total Residual Chlorine (TRC)**

The proposed General Permit will continue the TRC monitoring requirements for permittees located in both Massachusetts and New Hampshire and will limit the allowable discharge TRC concentration. This will ensure that discharges comply with water quality standards for chlorine. Potable water sources typically are chlorinated to minimize or eliminate pathogens. Regulations at 40 CFR § 141.72 require that a public water system's residual disinfection concentration cannot be less than 0.2 mg/l for more than 4 hours. Therefore, the discharge of chlorinated drinking water has the potential to exceed water quality standards for chlorine. EPA is proposing limits on the concentrations of chlorine in discharges from facilities utilizing municipal drinking water for cooling water. EPA does not believe that discharges from facilities using other water sources are likely to contain chlorine in concentrations sufficient to exceed water quality standards.

Massachusetts and New Hampshire have narrative criteria in their water-quality regulations that prohibit toxic discharges in toxic amounts (Massachusetts 314 CMR 4.03(3)(a) and New

Hampshire Env-Wq 1703.21(a)). The proposed limits on chlorine will ensure that chlorine is not discharged in toxic amounts.

The State of New Hampshire's water standards for chlorine, found at Chapter 1700, Surface Water Quality Regulations, Part Env-Wq 1703.21(b), is the same as the recommended federal water quality criteria. The Commonwealth of Massachusetts' surface water-quality standards require the use of federal water quality criteria where a specific pollutant could reasonably be expected to adversely affect existing or designated uses (314 CMR 4.05 (5)(e)).

Based on these standards, EPA will base chlorine effluent limits on the federal water quality criteria, which are listed below.

- Freshwater acute – 19 ug/l (0.019 mg/l)
- Freshwater chronic – 11 ug/l (0.011 mg/l)
- Marine acute – 13 ug/l (0.013 mg/l)
- Marine chronic – 7.5 ug/l (0.0075 mg/l)

In the expired permit for Massachusetts, the maximum daily and average monthly concentration allowed in a permittee's discharge are based on the appropriate water-quality criterion and the available dilution in the receiving water (based on the receiving water's 7Q10 and the maximum allowed discharge, see Attachment B for equations). These effluent limits have been extended to New Hampshire in the draft permit. For Massachusetts and New Hampshire, permittees' TRC effluent limits will be based on the following equation:

$$\text{Effluent Limit} = (\text{Dilution Factor}) \times (\text{Water-Quality Criterion})$$

The Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine; the maximum effluent concentration of chlorine shall not exceed 1.0 mg/l TRC. In Massachusetts and New Hampshire the TRC limits established for discharges with high dilution factors will be capped at 1.0 mg/L based on this policy. EPA believes that this upper TRC effluent limit will adequately protect aquatic organisms from toxic amounts of chlorine.

The dilution factor and applicable chlorine limits will be approved by EPA during review of the facilities' notice of intent (NOI). The permittee will be provided with these limits when notified of permit coverage.

## **E. Metals and Inorganic Anions**

Many metals and inorganic anions can be found in the ground and surface water in Massachusetts and New Hampshire. Concentrations of these metals and inorganic anions vary widely depending on the geology and types of activities that occurred on the site. Metals, such as arsenic and iron, frequently build up in groundwater by leaching out of naturally occurring deposits under reducing conditions in surrounding bedrock or soils. Thus, metals can be naturally occurring constituents of groundwater, at times in concentrations that could violate

surface water quality standards. Similarly, anions such as chloride can be a groundwater constituent as a result of salt water intrusion or other hydrogeologic conditions. Since these metals and inorganic anions are likely not removed from the groundwater during its use as NCCW, their concentrations are not likely to be lowered prior to discharge, although there may be a change in characteristics due to oxidation or other processes.

In some cases, the content of certain metals and inorganic anions in the discharge may have a reasonable potential to violate surface water quality standards. Metals and inorganic anions can be toxic to marine and freshwater organisms, as well as contaminate other plant and animal species. Often, aquatic organisms are even more sensitive than humans to metals in water. Ultimately, metals can become concentrated in the human food chain: food sources such as vegetables, grains, fruits, fish, and shellfish can become contaminated by accumulating metals from the soil and water used to grow them. Also, in the case of high iron content, when the discharge is oxidized after groundwater extraction, it can contribute to other violations of color and/or aesthetic standards.

Additionally, several radionuclides must be tested for in groundwater sources of NCCW due to their possible subsurface presence in bedrock or soils. According to Massachusetts Surface Water Quality Standards 314 CMR 4.05(5)(d) Radioactivity, all surface waters shall be free from radioactive substances in concentrations or combinations that would be harmful to human, animal, or aquatic life or the most sensitive designated use; result in radionuclides in aquatic life exceeding the recommended limits for consumption by humans, or exceed Massachusetts Drinking Water Regulations set forth in 310 CMR 22.09. New Hampshire water quality standards at Env-Wq 1703.15-17 establish radionuclide concentration limits for surface waters, however, these radionuclides are not commonly tested in water samples at analytical laboratories. EPA has determined it is appropriate to test for the specific radionuclides with numeric drinking water standards (MCLs/MCLGs) in Massachusetts and New Hampshire.

EPA has selected the most appropriate metals and anions for analysis to characterize the most prevalent naturally occurring metals and anions in Massachusetts and New Hampshire groundwater, such that the concentrations may have a reasonable potential to violate surface water quality standards. The following total recoverable metals, inorganic ions, and radionuclides have been selected as parameters to be analyzed for when groundwater is used as the source of cooling water for this General Permit:

Antimony	Chromium (Total)	Iron	Silver
Arsenic	Chromium (VI)	Mercury	Zinc
Cadmium	Copper	Nickel	Lead
pH	Chloride		

Radionuclides:

Gross Alpha

Radium 226 + Radium 228

Uranium

In addition: Hardness – sample of receiving surface water

While most groundwater is not expected to exhibit levels of metals or anions of concern, as a precaution, if a facility uses groundwater for NCCW, the facility is required to test for these metals and inorganic anions in the effluent, and to submit the results of these analyses with its NOI for evaluation by EPA or the State. If an NOI for discharge under this permit indicates unusual circumstances where the effluent metal concentrations may be problematic after consideration of the dilution and other factors, EPA may require an individual permit.

The results of the metal analyses required in the NOI will be considered by EPA and the State in a manner similar to the way that EPA sets water quality-based metals limits in many individual permits. With such discharges, as well as other discharges where a water quality based limit is needed, EPA uses its Recommended Criteria values for freshwater, adjusted for hardness (where hardness dependent) and converts them to “Total Recoverable Metals” limits.

Generally, national freshwater quality based criteria and effluent limits for metals are expressed at a hardness (H) value of 100 mg/L as calcium carbonate (CaCO<sub>3</sub>) in the receiving water. While such a value may be appropriate for setting national criteria and limits, site-specific criteria using an adjusted hardness value should be considered to reflect regional, local or actual conditions. In determining the hardness dependent levels of metals in ground water to evaluate NOIs for this NCCW General Permit, EPA intends to use actual hardness values of the receiving surface water. Therefore, laboratory analyses of hardness representative of the receiving surface water are required in the NOI.

#### **F. Whole Effluent Toxicity Testing (LC-50 and C-NOEC)**

Both Massachusetts and New Hampshire have narrative criteria in their water quality regulations (See Massachusetts 314 CMR 4.05(5)(e) and New Hampshire Part Env- Ws 1703.21) that prohibit toxic discharges in toxic amounts. In some instances, upon review of a facility’s NOI or its discharge monitoring data, EPA may request that an applicant conduct Whole Effluent Toxicity (WET) tests of its NCCW discharge, as authorized at 40 CFR § 122.44(d)(1)(v). These tests will include chronic (C-NOEC) and/or acute (LC<sub>50</sub>) toxicity test(s) of its NCCW discharge. The purpose of the tests is to ensure that the discharge complies with the narrative water quality standard and that all surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. These tests are usually required when the receiving water has a dilution ratio of 10:1 or less, or when other conditions warrant. The protocol for these tests can be found online at [http://www.epa.gov/region1/npdes/epa\\_attach.html#epa](http://www.epa.gov/region1/npdes/epa_attach.html#epa).

#### **G. Dilution Factors and Mixing Zones**

The dilution factor is used to compute the effluent limits for total residual chlorine and also may be used to determine whether in-stream temperature monitoring is required. The available dilution at a specified critical drought flow condition in the receiving water and the facilities design flow are used in computing the dilution factor. For Massachusetts, the regulations for calculating dilution factors and mixing zones are located at 314 CMR 4.03 and in the Massachusetts Water Quality Standards Implementation Policy for Mixing Zones. For New

Hampshire, these regulations are located at Env-Wq 1705 and Env –Wq 1707. In all cases, mixing zones in Massachusetts must meet the criteria at 314 CMR 4.03(2) and mixing zones in New Hampshire must meet the minimum criteria presented in Env-Wq 1707.02.

For discharges to freshwater, the water quality standards for each state establish the lowest flow condition in the rivers and streams to meet the water-quality criteria as the 7Q10 low flow. This flow condition is found at 314 CMR 4.03(3)(a) in the Massachusetts Standards and at Part Env-Ws 1705.02 in the New Hampshire regulations. Because 10 percent of the river's assimilative capacity is held for future needs in New Hampshire, in accordance with Env-Ws 1705.01, the dilution factor is multiplied by 0.90 prior to use in permit limit calculations.

For marine waters in Massachusetts, the critical hydrologic condition at which water-quality must be met is established on a case-by case basis. Existing uses are to be protected and the selected hydrologic condition is not to interfere with the attainment of designated uses (314 CMR 4.03(3)(c)). For discharges to tidal waters in New Hampshire, the low flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99 percent of the time (see Part Env-Ws 1705.02).

Dilution factors are calculated by mixing zone modeling in accordance with the NHDES Mixing Zone Policy for freshwater receiving waters. In order to satisfy Massachusetts and New Hampshire regulations, EPA uses the 7-day 10-year low flow statistic for rivers and streams to calculate dilution factors.

The dilution factor calculations for Massachusetts and New Hampshire facilities are found in Attachment B to the General Permit. For the convenience of facilities that were granted coverage under the expired NCCW General Permit, the 7Q10 estimates for those facilities are posted at <http://www.epa.gov/region1/npdes/nccwgp.html> and can be used when re-applying for coverage under this General Permit. EPA will confirm/approve/disapprove the limits submitted in the applicant's NOI in the letter of notification of coverage mailed to the applicant.

## IV. Cooling Water Intake Structure Requirements (CWIS)

### A. Background

If a facility seeking coverage under the NCCW General Permit does not withdraw surface water to use as cooling water, EPA has determined that the facility need not comply with the CWIS requirements of this permit. If any surface water withdrawn by the facility is used for cooling water, the facility needs to comply with the CWIS requirements of this General Permit.

In the absence of applicable regulations, EPA has made § 316(b) determinations on a case-by-case basis based on best professional judgment (BPJ) for both new and existing facilities with regulated CWIS. In December 2001, EPA promulgated new final § 316(b) regulations that provide specific technology-based requirements for *new* power plants and other types of *new* facilities with CWIS. 66 Fed. Reg. 65255 (Dec. 18, 2001) (Phase I rule or Phase I regulations). Facilities subject to the Phase I regulations have been excluded from coverage under this General Permit (Part 3.3.1.) and require an individual permit; the compliance standards of the Phase I rule do not apply to facilities seeking coverage under the NCCW GP.

In July 2004, EPA also published final regulations that apply § 316(b) to large, *existing* power plants (Phase II rule or Phase II regulations). EPA's final § 316(b) Phase II rule for existing facilities was published in the Federal Register on July 9, 2004, and became effective on September 7, 2004. See 69 Fed. Reg. 41576; (July 9, 2004) codified at 40 CFR Part 125, Subpart J. The compliance standards of the Phase II rule applied to an existing Phase II facility if, among other things, it has CWIS with a total design intake flow of 50 MGD or more. On January 25, 2007 the United States Court of Appeals for the Second Circuit remanded several aspects of the Phase II Rule to EPA. As a result of the remand, on July 9, 2007 EPA suspended the 2004 Phase II Rule, with the exception of 40 CFR § 125.90 (b), which provides that, "Existing facilities that are not subject to requirements under this or another subpart of this part must meet requirements under § 316(b) of the CWA determined by the Director on a case-by-case, best professional judgment (BPJ) basis." This remains the effective CWIS regulation for this General Permit.

On June 16, 2006, EPA published the Phase III Rule under § 316(b) of the Clean Water Act as the third and final part of regulations designed to minimize harmful impacts on aquatic life caused by CWISs. The Phase III rule establishes categorical requirements under § 316(b) of the Clean Water Act for new offshore oil and gas extraction facilities that have a design intake flow threshold of greater than 2 MGD and that withdraw at least 25 percent of the water exclusively for cooling purposes. These facilities are excluded from eligibility from the NCCW General Permit (Part 3.3.1.) and require an individual permit. Therefore, the compliance standards of the Phase III Rule do not apply to facilities seeking coverage under the NCCW General Permit.

In the absence of applicable compliance standards, § 316(b) permit requirements for smaller, existing facilities, such as those facilities with CWIS seeking NCCW GP coverage, continue to be established on a best professional judgment (BPJ) basis.

## B. Requirements

To satisfy the § 316(b) BTA requirements of this General Permit, a facility must meet two types of requirements:

- general requirements listed in the permit; and
- facility-specific BTA requirements which the applicant describes how the facility meets them in the NOI.

### 1. General BTA Requirements

There are four general BTA requirements and two BTA-related requirements that are applicable to all facilities with one or more CWIS.

**Cease or Reduce the intake of cooling water:** The first general BTA requirement is to cease or reduce the intake of cooling water whenever withdrawal of source water is not necessary. Depending on the facility, times when it is necessary to withdraw cooling water can include equipment testing or maintenance activities. When water is not being withdrawn into the CWIS, the resulting through-screen velocity associated with the structure is reduced to zero. This allows juvenile and adult fish to swim in the vicinity of the CWIS without the potential for impingement. Another major environmental impact of CWIS is that smaller aquatic organisms that are free floating in the water could be pulled into the intake structure. A reduction or periodic termination of the volume of water withdrawn will also reduce the number of aquatic organisms withdrawn or entrained into the CWIS.

**Return all observed live impinged fish to the source water:** The second general BTA requirement is returning all observed live fish impinged on or in the CWIS to the source water to the extent practicable in a manner that maximizes their chance of survival. The “extent practicable” is expected to depend, in part, on facility specific features and is not a requirement for a particular technology, such as a mandate for traveling screens or automated fish return systems at all CWIS.

Fish that congregate near intake screens, once impinged, can be removed from the CWIS by one of a variety of fish return means in a timely manner. Systems can be designed to transport impinged fish to open water away from the CWIS, thus reducing impingement mortality by allowing the fish to survive the initial impingement and diminishing the chances of subsequent repeated impingement. For example, at the Salem Nuclear Generating Station in Delaware Bay, an upgrade to the facility’s fish return system resulted in a 51% reduction in losses of impinged weakfish. See 65 FR 49105, § XB, footnote 68, August 10, 2000.

**Do not spray impinged fish or invertebrates with chlorinated water:** The third general BTA requirement is ensuring that no chlorinated water (including potable water) is sprayed on impinged fish or invertebrates if water is sprayed to remove impinged fish or invertebrates from the CWIS. It has been shown that chlorine in water, even at extremely low levels, can be toxic to aquatic life. Fish that are impinged and transported by well designed and operated fish return system are still subjected to stress. The exposure of these impinged organisms to chlorinated

water would further elevate the potential for stress and could lead to mortality. Using only unchlorinated water to remove impinged fish is required to maximize the survival of organisms that are removed by water spray and returned to the open water.

**Maintain a physical screen or similar exclusion technology:** The fourth general BTA requirement is to have a physical screen or other exclusion technology in order to prevent entrainment and death or injury of organisms in the source water. Alternatively, the permittee may take similarly effective steps to reduce the entrainment or impingement mortality of fish in the CWIS, such as fish return systems. The maximum through-screen velocity of the CWIS should be less than 0.5 feet per second to reduce suction force at the CWIS and lessen the potential of fish and invertebrates to be impinged on or within the CWIS.

### **BTA Related Requirements:**

**Conduct and document a program to monitor for impinged fish and invertebrates:** Due to the variability in CWIS designs, CWIS locations, and the operations of different facilities, there is not one single program or monitoring frequency applicable to all facilities to fulfill the General Permit requirement for a program to regularly monitor for impinged fish and impinged invertebrates. Rather, each permittee covered by the General Permit must design, conduct and document an impingement monitoring program based on site-specific factors at its facility. These site specific factors include, but are not limited to, access to each CWIS; ability to observe potential impingement events; the intermittent or continuous nature of CWIS withdrawals; the timing of operational shifts; the nature of the facility's fish return systems; the facility's fish return procedures; the abundance of fish in the source water body; and the documentation of past impingement monitoring.

In cases where EPA has required an impingement monitoring program, one representative approach has been to document the number of fish and invertebrates impinged during three eight hour periods (total of 24 hours of monitoring per week) spaced over the course of a week (for example: Monday morning, Wednesday afternoon and Friday evening). This frequency may be appropriate where the permittee has reasonable access to the CWIS at these times during the operational shifts when cooling water is being withdrawn and is able to visually observe any accumulated impinged fish or invertebrates over discrete time periods during continuous operation and is able to remove and return live organisms to the surface water. As provided in Part 4.2.2. of the General Permit, EPA may require an applicant or permittee to explain in writing why its program to regularly monitor for impinged fish and impinged invertebrates is appropriate for its particular CWIS and situation.

**Report an unusual impingement event:** An unusual impingement event is defined as four or more fish on the CWIS during one viewing or four or more total fish observed on the CWIS over the course of a 24-hour period. The permittee must report an unusual impingement event to EPA by telephone within 24 hours of the event and provide a written report within five business days. The information that must be provided in the reports can be found in section 4.2.1. of the General Permit. EPA must be notified quickly of an unusual impingement event in order to assist the permittee in developing additional BTA solutions to reduce impingement of fish and other organisms in the CWIS.

## **2. Facility-Specific BTA Requirements**

In selecting, describing, and implementing facility-specific BTA components, the facility chooses a combination of design and operational measures to reduce the adverse environmental effects of the CWIS in a facility-specific BTA description. Facilities covered by this permit operate under a wide variety of environmental and operational constraints. EPA is providing flexibility in allowing each facility to propose and implement, upon EPA's authorization, the type of facility-specific BTA component or components that best satisfies the requirements of § 316(b) of the CWA.

The following features of the CWIS location can be among the components of a facility-specific BTA description:

- Locate the CWIS in, or relocate it to, an area where impingement mortality and/or entrainment will be minimized;
- Use alternative sources of cooling water to the maximum extent practical.

The following features of the CWIS design and construction can be among the components of a facility-specific BTA description;

- Ensure that fish impinged upon intake structures will be removed and transported with minimal stress and returned to the source water;
- Use low pressure spray rather than high pressure spray to remove impinged organisms from screens;
- Maintain CWIS bottom sills or dredge to minimize the influence of the intake velocity on impingement or entrainment of benthic or near benthic organisms;
- Maintain screens, nets, fabric curtains or fish exclusion devices such as louvers or other modification of the CWIS to reduce impingement and/or entrainment;
- Maintain a maximum through-screen design intake velocity at the CWIS of 0.5 feet per second or less;
- Take steps to minimize intake velocity.

The following features of the CWIS capacity can be among the components of a facility-specific BTA description:

- Operation of variable speed pumps to minimize the amount of cooling water withdrawn, to the extent practical;

- Use of a closed-cycle cooling system or withdrawing cooling water at a rate commensurate with a closed-cycle cooling system;
- Schedule maintenance or other facility activities to reduce or eliminate intake water use during expected periods of elevated impingement or entrainment potential (e.g., spring and fall spawning);
- Implement steps to minimize cooling water use when operating.

The above lists of CWIS features are not requirements, but rather suggestions that may be appropriate to the facility's CWIS. The suggestions are provided as examples of components that may be included in a facility-specific BTA description to attain BTA and EPA's authorization to discharge under the General Permit. Since facilities covered by this permit operate under a wide variety of environmental and operational constraints, EPA is providing flexibility in allowing each applicant to propose the type of facility-specific BTA component or components that best satisfies the requirements of the General Permit. The potential for a CWIS to cause adverse environmental impact and the specific technologies that would best minimize such impacts often are dependent on site-specific factors.

In addition, the following information is required in the NOI in order to characterize the CWIS and assess common indicators of the potential for impingement and entrainment and/or the effectiveness of the location, design, construction, and capacity features of the CWIS for minimizing adverse environmental impact.

a. A characterization of the source water body's fish habitat in the vicinity of each CWIS during the seasons when the CWIS may be in use.

The documented characterization of site-specific biological features of the source water body in the vicinity of the facility's CWIS during the seasons when the CWIS may be in use is necessary for EPA to evaluate the potential for and minimization of impingement mortality and entrainment based on the location, design, construction and capacity of each CWIS. In certain cases, an assessment of fish abundance, density and entrainment and impingement potential may require sampling of the source water for eggs and larvae and/or such sampling may be a condition of the NOI approval. Facilities should consult with state and local wildlife authorities to characterize biological features of the source water body. Facilities may use a previous biological characterization in the NOI if there is no new information available.

b. The design capacity of CWIS in MGD.

After location, the flow or capacity of a CWIS is the primary factor affecting the entrainment of organisms, all other factors being equal. (See 65 FR 49078, August 10, 2000.) A facility that withdraws more water is likely to have a greater potential for impingement and entrainment. Information regarding the design capacity will assist EPA in its review of the impingement and entrainment potential of a facility and the adequacy of a facility-specific BTA description. "Design capacity" is used here synonymously with "design intake flow", which is defined in Section 4.1 of the General Permit.

c. The maximum monthly average intake of the CWIS in MGD during the previous five years and the month in which this flow occurred.

This value is calculated as the sum of the daily average flows for each day of a month, divided by the number of days in that month. In many cases, a facility withdrawing water does not approach the design capacity for the CWIS under normal operation. In certain cases, the maximum monthly average intake may be a better description of the water withdrawn from the facility compared with the design capacity. Since water withdrawal is related to the potential for impingement and entrainment, this information is useful.

d. Whether the facility withdraws cooling water at a rate commensurate with a closed-cycle cooling system. If so, a demonstration of this shall be included in the NOI.

The use of a closed-cycle cooling water system will greatly decrease the volume of intake water withdrawn by a facility when compared with the same facility using a once-through cooling water system. As stated previously, a reduction in the withdrawal of water from a CWIS reduces the potential for environmental impacts related to impingement and entrainment.

e. The source water's water body type, as defined in Section 4.1 of the General Permit (estuary, freshwater river or stream, lake or reservoir, ocean, or tidal river).

The location of a CWIS can influence markedly the potential for entrainment and impingement depending on the water body type of the source water. Different water body types have different potential for adverse environmental impacts. This is seen as a primary factor when assessing the potential for adverse environmental impact from a CWIS and is an essential piece of information used by EPA when reviewing site-specific BTA. For example, estuaries and tidal rivers generally have the highest potential for adverse impact because they contain essential habitat and nursery areas for many species. In contrast, some lakes have low productive areas such as the deep water hypolimnion, which would have low potential for adverse environmental impacts. See 65 Federal Register, Volume 65, No.155, 49078, August 10, 2000.

f. The maximum through-screen design intake velocity in feet per second (fps).

The velocity of water entering a cooling water intake structure exerts a direct physical force against which fish and other organisms must act to avoid impingement or entrainment. As velocity increases at a CWIS, so does the potential for impingement and entrainment. EPA considers velocity to be one of the more important factors that can be controlled to minimize adverse environmental impacts at CWIS. See 65 FR 49087, August 10, 2000. For example, in most cases a velocity threshold of 0.5 fps has been identified as protective of most species of fish. This determination is discussed at 65 FR 49088, August 10, 2000.

g. The source water's annual mean flow if the CWIS is located on a freshwater river or stream, in cubic feet per second (cfs).

This value is necessary to calculate the proportion of river water used by the facility for cooling. When United States Geological Survey (USGS) river gauge information for the source water is available, the annual mean flow calculated by USGS for all available years of record of the gauge shall be used. This information can be found in the USGS Water Resource Data, Water Year 2005 Publication, located on the USGS website at [http://web10capp.er.usgs.gov/adr\\_lookup/wdr-ma-05/](http://web10capp.er.usgs.gov/adr_lookup/wdr-ma-05/).

h. The design intake flow as a percent of the source water's annual mean flow if the CWIS is located on a freshwater river or stream.

This calculation is needed to evaluate the proportion of river water used by the facility for cooling on an annual basis. One protective measure used by EPA for new facilities limits the withdrawal of the CWIS to no more than 5 percent of the river's mean annual flow. (See 40 CFR § 125.84(b)(3)(i)). A facility that withdraws a greater percentage of a river's flow is likely to impinge or entrain a greater percentage of the river's aquatic life.

i. The source water's 7Q10 if the CWIS is located on a freshwater river or stream, in cubic feet per second (cfs).

This value is necessary to calculate the proportion of river water used by the facility for cooling under low river flow conditions. See Attachment B of the General Permit for information on how to determine the 7Q10 of the source water.

j. The design intake flow as a percent of the source water's 7Q10 if the CWIS is located on a freshwater river or stream.

This calculation is needed to evaluate the proportion of river water used by the facility for cooling under low river flow conditions. See Attachment B of the General Permit for information on how to determine the 7Q10 of the source water.

k. A discussion of the historical occurrence of impinged fish on or in the CWIS.

If impingement has been observed, the following information shall be submitted for each impingement episode in the last five (5) years, to the extent the information is available: duration of each event; the number, by species, of fish impinged; length of each impinged fish; condition of each fish (dead or alive); and actions taken (e.g. fish returned to river, fish collected, cooling water intake flow reduced.).

This information is needed to evaluate the history of the CWIS and assess the performance of impingement mortality reduction measures used by the facility in the past. It is limited to the information available for the five (5) years previous to the date of the applicant's NOI. These data can influence the components of site-specific design, operational technology and monitoring necessary in the future to satisfy a facility-specific BTA description.

### **3. Summary**

The permit requirements discussed above represent the best technology available (BTA) for reducing the environmental impact of cooling water intake structures for sources eligible for coverage under this General Permit. Thus, these requirements provide a means to comply with the provisions of § 316(b) of the CWA. Further, EPA believes that this approach provides significant flexibility for compliance under this general permit, which applies to a range of facilities and cooling water intake sources and methods.

## **V. Application Requirements and Notice of Intent**

### **A. General NOI Information Requirements**

To obtain coverage under the NCCW General Permit, owners or operators of facilities that meet the eligibility requirements in Part 3 of the permit are required to submit notices of intent (NOI) to EPA and the appropriate state at the addresses listed in Appendix 6 of the NCCW GP. An eligible facility that submits a complete and accurate NOI does not need to apply for an individual permit for a regulated discharge, unless EPA specifically notifies the owner or operator that an individual permit application must be submitted. The NOI consists of either the suggested NOI format in Appendix 5 of the NCCW GP or another form of official correspondence containing all of the information required in Appendix 4 of the NCCW GP.

### **B. NOI Timeframes**

1. *Proposed New Discharges:* Facilities that were not covered under the previous NCCW GP (which expired on July 31, 2013), and that are seeking coverage under the new NCCW GP must submit an NOI to EPA and the appropriate state, post-marked at least 60 days prior to the commencement of discharge. In the case of a proposed new discharge to New Hampshire waters, additional lead time may be necessary (contact the NHDES at the address listed in Appendix 6 of this General Permit to determine whether additional lead time is necessary).
2. *Existing Permitted Discharges:* Facilities that were covered under the administratively continued NCCW GP, (which expired on July 31, 2013), and that seek coverage under the new General Permit, must submit an NOI to EPA and the respective State within 90 days after the effective date of the new General Permit. An NOI is not required if the permittee submits a notice of termination (NOT), as set forth in Part 7.1 of the General Permit before the 90 day time frame expires.

### **C. NOI Information Requirements Related to the CWIS and BTA**

Facilities seeking coverage under the new General Permit that draw surface water for use as non-contact cooling water must submit information characterizing the CWIS at the facility and assessing the potential for impingement and entrainment of aquatic organisms on or within the CWIS. The facility-specific requirements for the NOI can be found in Section 4.2 of the draft General Permit or Section IV.B.2 of this fact sheet.

### **D. Essential Fish Habitat**

1. **Background:** Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801 et. Seq. (1996)), EPA is required to consult with the NOAA Fisheries Service (also known as the National Marine Fisheries Service, NMFS) if EPA's actions or proposed actions that it funds, permits or

undertakes, “may adversely impact any essential fish habitat.” See 16 U.S.C. § 1855(b). The amendments broadly define “essential fish habitat” (EFH) as “waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” See 16 U.S.C. § 1802(10). Adverse impact means any impact which reduces the quality and or quantity of essential fish habitat (see 50 CFR § 600.910(a)). Adverse effects may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in fecundity), site-specific, or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions.

An EFH designation is only available where a Federal Fisheries Management Plan exists (see 16 U.S.C. § 1855(b)(1)(A)). EFH designations for New England were approved by the US Department of Commerce on March 3, 1999. In a letter to EPA-New England dated October 10, 2000, NOAA Fisheries Service agreed that for NPDES permit actions, EFH notification for purposes of consultation can be accomplished in the EFH section of the permit’s Fact Sheet or Federal Register Notice.

- 2. EFH in the NCCW GP:** Part 3.3.9. of the General Permit states that discharges to designated areas under the Essential Fish Habitat Act are excluded unless the requirements specified in this General Permit are fulfilled. The General Permit includes effluent limitations and monitoring requirements for facilities that discharge into both freshwater and tidal waters of Massachusetts and New Hampshire, with the exception of those waters listed in Part 3.3 of the General Permit. Therefore, EPA’s assessment considers all 40 federally managed species with designated EFH in the coastal and inland waters of Massachusetts and New Hampshire.

EPA has identified 44 facilities as likely candidates for coverage under this General Permit. Four of these facilities discharge into ocean or estuarine water and 40 facilities discharge into fresh water. Although this General Permit is available to additional facilities, this assessment considers these 44 representative facilities, which were covered under the expired General Permit.

Marine Discharges: EPA has identified four potential applicants that would discharge into marine or estuarine waters in Massachusetts: two facilities that discharge directly into Boston Inner Harbor, one facility that discharges to Plymouth Harbor, and one facility that discharges to the lower Mystic River.

The following is a list of the EFH species and applicable lifestage(s) for the area that includes Massachusetts, New Hampshire and the adjacent marine waters.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic Salmon ( <i>Salmo salar</i> )			X	X
Atlantic Cod ( <i>Gadus morhua</i> )	X	X	X	X
Haddock ( <i>Melanogrammus aeglefinus</i> )			X	X

Pollock ( <i>Pollachius virens</i> )	X	X	X	X
Whiting ( <i>Merluccius bilinearis</i> )	X	X	X	X
Offshore Hake ( <i>Merluccius albidus</i> )				
Red Hake ( <i>Urophycis chuss</i> )	X	X	X	X
White Hake ( <i>Urophycis tenuis</i> )	X	X	X	X
Redfish ( <i>Sebastes fasciatus</i> )	n/a	X	X	X
Witch flounder ( <i>Glyptocephalus cynoglossus</i> )				
Winter flounder ( <i>Pleuronectes americanus</i> )	X	X	X	X
Yellowtail flounder ( <i>Pleuronectes ferruginea</i> )	X	X	X	X
Windowpane flounder ( <i>Scophthalmus aquosus</i> )	X	X	X	X
American Plaice ( <i>Hippoglossoides platessoides</i> )	X	X	X	X
Ocean Pout ( <i>Macrozoarces americanus</i> )	X	X	X	X
Atlantic Halibut ( <i>Hippoglossus hippoglossus</i> )	X	X	X	X
Atlantic Sea Scallop ( <i>Placopecten magellanicus</i> )	X	X	X	X
Atlantic Herring ( <i>Clupea harengus</i> )	X	X	X	X
Monkfish ( <i>Lophius americanus</i> )	X	X		X
Bluefish ( <i>Pomatomus saltatrix</i> )				X
long finned squid ( <i>Loligo pealei</i> )	n/a	n/a	X	X
short finned squid ( <i>Illex illecebrosus</i> )	n/a	n/a	X	X
Atlantic butterfish ( <i>Peprilus triacanthus</i> )	X	X	X	X
Atlantic mackerel ( <i>Scomber scombrus</i> )	X	X	X	X
summer flounder ( <i>Paralichthys dentatus</i> )	X	X	X	X
scup ( <i>Stenotomus chrysops</i> )	n/a	n/a	X	X
black sea bass ( <i>Centropristus striata</i> )	n/a	X	X	X
surf clam ( <i>Spisula solidissima</i> )	n/a	n/a	X	X

ocean quahog ( <i>Artica islandica</i> )	n/a	n/a		
spiny dogfish ( <i>Squalus acanthias</i> )	n/a	n/a	X	X
tilefish ( <i>Lopholatilus chamaeleonticeps</i> )				
king mackerel ( <i>Scomberomorus cavalla</i> )	X	X	X	X
Spanish mackerel ( <i>Scomberomorus maculatus</i> )	X	X	X	X
cobia ( <i>Rachycentron canadum</i> )	X	X	X	X
sand tiger shark ( <i>Odontaspis taurus</i> )		X		
blue shark ( <i>Prionace glauca</i> )		X		X
dusky shark ( <i>Charcharinus obscurus</i> )			X	
shortfin mako shark ( <i>Isurus oxyrhincus</i> )			X	
sandbar shark ( <i>Charcharinus plumbeus</i> )			X	X
bluefin tuna ( <i>Thunnus thynnus</i> )				X

Source: NOAA Fisheries Service <http://www.nero.noaa.gov>

Freshwater: The Merrimack and Connecticut Rivers, and certain tributaries to these rivers, are designated EFH for the Shortnose Sturgeon. There are a number of facilities located within the Connecticut and Merrimack River basins that discharge NCCW, including four facilities covered under the expired General Permit that discharge directly into the Connecticut or Merrimack Rivers.

3. **Analysis of Effects and EPA’s Opinion of Potential Impacts:** EPA has identified three potential sources of impact to aquatic species associated with the discharge of NCCW: the cooling water intake structure; discharge of heated effluent; and effluent toxicity.

**A. Cooling Water Intake Structures (CWIS):** Cooling water may be drawn from groundwater, potable water sources or surface water sources. Intake structures are used by facilities that draw cooling water from an adjacent surface water. Adverse environmental impacts associated with the use of CWIS result from both the entrainment and the impingement of aquatic organisms. According to § 316(b) of the Clean Water Act, any point source that uses a CWIS must ensure that its location, design, construction, and capacity reflects the best technology available (BTA) to minimize these adverse environmental impacts.

Facilities with CWIS that are eligible for coverage under the proposed NCCW General Permit must comply with the permit’s general BTA requirements, facility-specific BTA requirements and suggested BTA components that address reducing impingement and

entrainment of aquatic life through a CWIS. The impacts to aquatic life from CWIS and the BTA requirements for facilities seeking coverage are described in Part 4 of the General Permit.

- B. Entrainment:** The potential to impact aquatic organisms by entrainment largely depends on the presence and abundance of organisms that are vulnerable to entrainment and the water flow required for cooling. The primary means of reducing entrainment of aquatic life through a CWIS is to reduce the volume of the water withdrawal. Under the permit's general BTA requirements, a facility must cease or reduce the intake of cooling water whenever withdrawal of source water is not necessary.

Other considerations to minimize entrainment include the location and design of the intake structure. Under the permit's facility-specific BTA requirement, each facility submits to the permitting authority a facility-specific BTA description that consists of the CWIS attributes and the design and operational measures that reduce the entrainment of shellfish and fish. The description must contain measures such as reducing the intake flow of a facility commensurate with a closed-cycle recirculating system to achieve a proportional reduction in entrainment of aquatic organisms; locating CWIS in an area where entrainment will be minimized; and/or the use of fine screen mesh or exclusion devices to reduce entrainment.

The potential exists for a number of EFH species and forage species to be present, as eggs or larvae, in proximity to the CWIS. However, for some species, including Atlantic salmon, it is unlikely that a significant numbers of eggs would be free floating in the proximity of the CWIS, given the negative buoyancy of the eggs and their demersal nature. In addition, a majority of species covered under EFH spawn and complete their lifecycle in estuarine or marine environments, while the majority of CWIS covered under this General Permit are expected to be located in freshwater. Entrainment will be further minimized by the flow limitation, flow reduction and entrainment reduction requirements included in the proposed permit. Based on the CWIS requirements of the proposed General Permit and the relatively low volumes of water withdrawn, EPA believes the threat of entrainment of EFH species and their forage species is minimal.

- C. Impingement:** Organisms that are too large to pass through intake traveling screens are still vulnerable to being impinged on these screens. CWIS intake location and design, as well as the cooling water flow requirements, are major factors in assessing impingement potential. Juvenile lifestages are particularly vulnerable to impingement, but adults of certain species are also at risk. EPA believes the impingement of EFH species and forage species at the existing facilities covered under these General Permits to be minimal due to the relatively low volumes (and flows) of water withdrawn.

The General Permit requires that all facilities comply with both the general and the facility-specific BTA requirements to reduce impingement mortality of aquatic life and to minimize the potential for impingement. The four general BTA requirements are: to cease or reduce the intake of cooling water whenever withdrawal of source water is not necessary; to return all observed live impinged fish to the source water in a manner that maximizes their chance of survival; to ensure that chlorinated water is not sprayed on impinged fish or invertebrates;

and conduct and document a program tailored to the facility's CWIS to regularly monitor for impinged fish and invertebrates and make the results of the program available to the permitting authority.

Based on the intake reduction requirements of the proposed permit and the relatively low volumes of water withdrawn, EPA believes the threat of impingement of EFH species and their forage species is minimal.

**D. Discharge of Heated Effluent:** Thermal impacts associated with the discharge are affected by the dilution capacity of the receiving water, the flow rate of discharge, and the difference in temperature of the effluent compared to the ambient water. The discharge of heated effluent is common to all facilities covered under the General Permit. Each State has developed thermal limits for various water bodies that are designed to be protective of the aquatic environment of that water body. The effluent limits for temperature in the permit remain unchanged from the expired permit. Massachusetts and New Hampshire will continue to use the same thermal limits for designated cold (68°F/20°C) and warm water (83°F/28.3°C) fisheries (see discussion in section II.C. of this fact sheet). Massachusetts further distinguishes between fresh and salt water sources, and limits temperatures in SA and SB waters to 85°F/29.4°C. Massachusetts also limits the  $\Delta T$  (change in the temperature of the receiving water body as a result of the discharge) depending on the classification of the water body and its predominant fishery. (See General Permit Attachment A). The monitoring requirements for facilities located in both States require that temperature samples be taken from the effluent stream before it is commingled with other discharges or the receiving water.

In addition, facilities are permitted to discharge up to 1 MGD of non-contact cooling water. Because many facilities' discharges are well under this limit, the thermal impacts of the discharges on the receiving water are often low due to high dilution factors.

Because the discharges are limited and are required to attain thermal water quality standards, which will protect the fishery designations of the receiving water bodies, EPA believes that the heated effluent will continue to have minimal impacts on aquatic resources, including EFH species and EFH forage species. This evaluation is based on the thermal limitations in the General Permit, the flow limitations in the General Permit and the requirement that the temperatures must meet state water quality standards.

**E. Effluent Toxicity:** Non-contact cooling water does not come into contact with any raw material, intermediate product, waste product, or finished product. NCCW discharges from facilities seeking coverage under the General permit are not expected to contain pollutants in toxic amounts. For facilities that use potable water as their cooling water source water, the permit establishes Total Residual Chlorine (TRC) limits that are adequate to protect aquatic-life criteria for chlorine based on the States' water quality standards. The General Permit prohibits the addition of toxic materials or chemicals to NCCW and prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. It also prohibits any discharge that violates State or Federal water quality standards. Further, EPA may require that a facility conduct toxicity testing where needed to verify that the discharge is not having toxic impacts

on sensitive species. Because the permit prohibits the addition of toxic materials to the NCCW discharge, limits the TRC concentration in the discharge where necessary, and establishes that EPA can request toxicity testing of the discharge if necessary, the discharges covered under this permit are not expected to have toxic effects on receiving water aquatic life, including EFH species and forage species.

**4. EPA's Opinion of all Potential Impacts:** EPA believes that the discharges authorized under the General Permit will have minimal adverse effects to EFH for a number of reasons, including:

- The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat;
- This is a re-issuance of an existing permit. The design flow of the facilities is low for most receiving waters;
- The proposed limits in the permit are sufficiently stringent to ensure that state water quality standards will be met and the permit prohibits violation of these standards; and,
- The permit includes technology based limits for cooling water intake structures that are protective of aquatic organisms.
- The permit limits the discharge flow rate of NCCW from a facility, and most facilities discharge relatively small amounts of NCCW; therefore, any potential effects of the discharges on receiving waters are expected to be proportionately small.

EPA concludes that the effluent limitations, conditions, and monitoring requirements contained in the proposed General Permit minimize adverse effects to aquatic organisms, including EFH species, as well as their habitat and forage species. With this draft permit, EPA is contacting NOAA Fisheries under § 305(b)(2) of the Magnuson-Stevens Act regarding this assessment and requests any additional recommendations that NMFS may have to protect EFH.

**5. Proposed Mitigation:** Mitigation for unavoidable impacts associated with re-issuance of the permit is not warranted at this time because it is EPA's opinion that impacts will be negligible if permit conditions are followed. If adverse impacts to EFH do occur, either as a result of non-compliance or from unanticipated effects from this activity, authorization to discharge under the General Permit can be revoked. Additionally, if such an incident occurs, or if new information becomes available that changes the basis of EPA's determination, then consultation with NMFS under the appropriate statute(s) will be reinitiated.

## **E. Endangered Species**

The Endangered Species Act (ESA) of 1973 requires federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS) and NOAA's National Marine Fisheries Service (NMFS), also known collectively as "the Services", that any actions authorized, funded, or carried out by the EPA (e.g., EPA issued NPDES permits authorizing discharges to waters of the United States) are not likely to jeopardize the continued existence of any Federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species (see 16 U.S.C. 1536(a)(2), 50 CFR § 402 and 40 CFR § 122.49(c)).

Section 7 of the ESA provides for formal and informal consultation with the Services. For NPDES permits issued in Massachusetts and New Hampshire where EPA is the permit issuing agency, draft NPDES permits and Fact Sheets are routinely submitted to the Services for informal consultation prior to issuance. EPA will initiate an informal consultation with the Services during the General Permit's public comment period. Based on EPA's working experience with the Services on numerous prior permits and identification of certain endangered species, general geographic areas of concern in the States and the potentially affected waters, including critical habitats, EPA has prepared this draft General Permit to ensure adequate protection under the ESA.

Non-contact cooling water (NCCW) is water used for cooling that does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. The General Permit specifically excludes coverage to facilities whose discharge(s) are likely to jeopardize the continued existence of listed threatened or endangered species or the critical habitat of such species. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat. Further, facilities that add water treatment chemicals to the NCCW (besides certain non-toxic pH adjustment and dechlorination chemicals) are not eligible for coverage under this permit. The requirements in this General Permit are consistent with information previously provided by the Services to EPA during the development of other recently issued general permits. Therefore, EPA New England finds that adoption of this General Permit is not likely to adversely affect any threatened or endangered species or its critical habitat.

The following are ESA species of concern in Massachusetts and New Hampshire

Massachusetts (13)	New Hampshire (10)
Dwarf wedgemussel ( <i>Alasmidonta heterodon</i> )	Dwarf wedgemussel ( <i>Alasmidonta heterodon</i> )
Northeastern bulrush ( <i>Scirpus ancistrochaetus</i> ) Sandplain	Northeastern bulrush ( <i>Scirpus ancistrochaetus</i> )
gerardia ( <i>Agalinis acuta</i> )	Jesup's milk-vetch ( <i>Astragalus robbinsii</i> var. <i>jesupii</i> )
Piping Plover ( <i>Charadrius melodus</i> )	Piping Plover ( <i>Charadrius melodus</i> )
Roseate Tern ( <i>Sterna dougallii</i> )	Roseate Tern ( <i>Sterna dougallii</i> )
Northern Red-bellied cooter ( <i>Pseudemys rubriventris</i> )	Karner Blue Butterfly ( <i>Lycaeides melissa samuelis</i> )
Bog Turtle ( <i>Glyptemys mühlenbergii</i> )	Canada Lynx ( <i>Lynx Canadensis</i> )
Small whorled Pogonia ( <i>Isotria medeoloides</i> )	Small whorled Pogonia ( <i>Isotria medeoloides</i> )
Puritan tiger beetle ( <i>Cicindela puritana</i> )	Atlantic Sturgeon ( <i>Acipenser oxyrinchus</i> )*
American burying beetle ( <i>Nicrophorus americanus</i> )	Shortnose Sturgeon ( <i>Acipenser brevirostrum</i> )*
Northeastern beach tiger beetle ( <i>Cicindela dorsalis</i> )	
Atlantic Sturgeon ( <i>Acipenser oxyrinchus</i> ) *	
Shortnose Sturgeon ( <i>Acipenser brevirostrum</i> )*	

\*These species are listed under the jurisdiction of NMFS, all others are listed under the jurisdiction of USFWS.

Discharges that are located in areas in which listed endangered or threatened species may be present are not automatically covered under this General Permit. Appendix 2 of the General Permit details how applicants may determine the listed species or critical habitat located near their proposed NCCW discharge. Applicants whose discharges may affect listed species or critical habitat may need to contact the Services to determine whether or not additional consultation is needed. In order to be eligible for coverage under the NCCW General Permits,

applicants must certify that they meet one of three FWS Eligibility Criteria (A, B, and C) related to listed species and critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service.

For facilities that must meet FWS Eligibility Criteria B in Appendix 2 (i.e., they cannot meet Criteria A or C); or for facilities that cannot meet any of the FWS ESA Eligibility Criteria in Appendix 2, coverage under the General Permit is available **only if the applicant contacts FWS** under § 7 of the Endangered Species Act, and it is confirmed that the applicant's discharges are not likely to affect listed species, or the communication results in a written concurrence by the Service(s) on a finding that the applicant's discharges are not likely to adversely affect listed species.

For facilities that meet Criteria C, EPA has determined that five endangered species and their critical habitat are not likely to be adversely affected by actions authorized under the permit because they are terrestrial animals or plants that are not likely to have significant interaction with the permitted activities (waterbody discharges and/or intakes). These species are: Canada Lynx, Sandplain gerardia, Small whorled Pogonia, Karner Blue butterfly, and American burying beetle.

In addition to the informal consultation process entered into by EPA for the issuance of this General Permit, an optional type of informal consultation involves the designation of a non-Federal representative (NFR) to determine whether a Federal action is likely to have an adverse impact on listed species or critical habitat. The ESA regulations provide for permit applicants, where designated, to carry out informal consultations as an NFR, which enables them to work directly with the Services (See 50 CFR § 402.08). EPA is hereby designating applicants for this general discharge permit as NFRs for the purposes of carrying out informal consultation. Therefore, EPA expects that the applicants will contact the Services to determine whether additional consultation is needed, as determined in Appendix 2.

Applicants with discharges that would occur along or into the waterways subject to ESA requirements must initiate contact with the Services as a non-Federal representative and must notify both EPA-New England and the appropriate state office of the determination in writing. The applicant must indicate in under which criterion the permittee will certify eligibility with regards to endangered species in the space provided on the NOI. If the applicant has communications with the Services, applicants must submit a copy of any communication from the Services with the NOI as directed. Applicants who cannot certify compliance with the ESA requirements on the NOI form must contact EPA to determine if eligibility for an individual NPDES permit is possible or to discuss other possible options for the proposed discharge.

Similarly, NMFS has requested that it review and comment on all discharges that may adversely affect the federally-listed endangered shortnose sturgeon (*Acipenser brevirostrum*). Discharges to certain sections of the Merrimack and Connecticut Rivers in Massachusetts have the potential to affect the federally-listed endangered shortnose sturgeon, including: the Merrimack River, from the Essex Dam in Lawrence, Massachusetts to the mouth of the Merrimack River (Essex County); and the Connecticut River, from the Massachusetts border with Connecticut to Turners Falls, Massachusetts (Hampshire, Hampden, and Franklin Counties). The NMFS also requested review and comment on discharges that affect the Atlantic Sturgeon (*Acipenser oxyrinchus*). The

Atlantic Sturgeon distinct population segment located in the Gulf of Maine is listed as a threatened species. The only known spawning river for this species is the Kennebec River; the Penobscot River is another possible spawning river. This General Permit only authorizes discharges in Massachusetts and New Hampshire; the Kennebec and Penobscot River watersheds are located entirely in Maine, so discharges are not expected to affect spawning areas for the Atlantic Sturgeon.

For facilities covered under the expired General Permit, EPA will initiate consultation with NMFS during the public comment period of the draft General Permit to ensure that listed species are not affected by the discharges expected to be covered under the NCCW General Permit. For facilities not previously covered under the General Permit, EPA will consult (formally or informally) with NMFS if necessary to ensure that the listed species under their jurisdiction are not affected by the proposed discharge.

#### *Services Contact Information*

US Fish and Wildlife Service  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5087  
*Phone: (603) 223-2541*

National Marine Fisheries Service  
Northeast Regional Office  
Protected Resources Division  
55 Great Republic Drive  
Gloucester, MA 01930-2298  
*Phone: (978) 281-9300 x6505*

#### **F. Historic Preservation**

Facilities which adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966 (NHPA), 16 USC §§ 470 et seq. are **not** authorized to discharge under this permit. Applicants must determine whether the discharge, and any related activities (including NCCW intake), authorized under this General Permit, has the potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places. The applicant must certify the criterion used to determine permit eligibility and indicate it in the space provided on the NOI. Electronic listings of National and State Registers of Historic Places are maintained by the National Park Service ([www.cr.nps.gov/nr](http://www.cr.nps.gov/nr)), the Massachusetts Historical Commission (<http://www.sec.state.ma.us/mhc/mhcnat/natidx.htm>) and the New Hampshire Historical Commission ([http://www.nh.gov/nhdhr/programs/national\\_register.html](http://www.nh.gov/nhdhr/programs/national_register.html)). For additional information regarding the requirements pertaining to historic places, see Appendix 3 of the General Permit.

Applicants also must comply with applicable State, Tribal and local laws concerning the protection of historic properties and places and applicants are required to coordinate with the State Historic Preservation Officer (SHPO) and others regarding effects of any discharges covered by this permit on historic properties.

MA SHPO address:

MA State Historic Preservation Officer  
MA Historical Commission  
220 Morrissey Blvd.  
Boston, MA 02125  
Tel No. (617) 727-8470  
Fax No. (617) 727-5128;

NH SHPO address:

State Historic Preservation Officer  
NH Division of Historic Resources  
P.O. Box 2043  
Concord, NH 03302-2043  
Tel. No. (603) 271-6435  
Fax No. (603) 271-3433

## **G. Requiring Coverage under an Individual Permit or Other General Permit**

### **1. When the Director May Require Application for an Individual NPDES Permit**

The NCCW GP provides that, for any applicant, EPA may require an individual permit or recommend coverage under a separate general permit according to 40 CFR § 122.28(b)(3). These regulations also provide that any interested party may petition EPA to take such an action. The issuance of the individual permit or other general permit would be in accordance with 40 CFR Part 124 and would provide for public comment and appeal of any final permit decision. Circumstances under which the Director may require an individual permit are described in 40 CFR § 122.28(b)(3)(i)(A-G).

The Director may require any person authorized by this permit to apply for and obtain an individual NPDES permit. Instances where an individual permit may be required include the following:

- a. A determination under 40 CFR § 122.28(b)(3);
- b. The discharge(s) is a significant contributor of pollution or is in violation of State Water Quality Standards for the receiving water;
- c. The discharger is not in compliance with the conditions of this General Permit;
- d. A change has occurred in the availability of the demonstrated technology or practices for the control or abatement of pollutants applicable to the point source(s);
- e. Effluent limitation guidelines are promulgated for the point source(s) covered by this General Permit;
- f. A Water Quality Management Plan or Total Maximum Daily Load containing requirements applicable to such point source(s) is approved and inconsistent with the General Permit or with the conditions of EPA's authorization to discharge;

- g. The point source(s) covered by this General Permit no longer:
  - i. Involves the same or substantially similar types of operations;
  - ii. Discharges the same types of wastes;
  - iii. Requires the same effluent limitations or operating conditions;
  - iv. Requires the same or similar monitoring; and/or,
- h. In the opinion of the Director, the discharge is more appropriately controlled under an individual or alternate general permit.

If the Director requires an individual permit, the permittee will be notified in writing that an individual permit is required, and will be given a brief explanation of the reasons for this decision. When an individual NPDES permit is issued to an operator otherwise subject to the NCCW GP, the applicability of the General Permit to that owner or operator is automatically terminated on the effective date of the individual permit (see 40 CFR §122.28(b)(3)(iv)).

## **2. When an Individual NPDES Permit may be Requested**

Any owner or operator of a facility covered by this General Permit may request to be excluded from coverage under the General Permit by applying for an individual permit. This request may be made by submitting a NPDES permit application along with the reasons for requesting coverage under an individual permit to EPA-New England and the appropriate state agency.

As provided in 314 CMR 3.06(8), in lieu of requiring a discharger covered under a general permit to obtain an individual permit, MassDEP may direct such discharger to undertake additional control measures, best management practices (BMPs), or other actions to ensure compliance with the General Permit, water quality standards, and/or to protect public health and the environment. MassDEP may exercise its authority to require the discharger to take these actions by imposing a condition in the General Permit to that effect, or by taking an enforcement action against the discharger, or by any other means.

## **H. EPA Determination of Coverage**

Any applicant may request coverage under the General Permit but the final authority for determination of coverage rests with the EPA. Coverage under the NCCW GP will not be effective until EPA and the appropriate State have reviewed the NOI, made a determination that coverage under the NCCW GP is authorized, and provided the operator with written notification of authorization. The effective date of coverage will be the date of signature of the authorization letter by the EPA. Any applicant who is denied coverage or who fails to submit to EPA and the appropriate State an NOI and/or fails to receive written notification of permit coverage from EPA is not authorized to discharge to receiving waters under the NCCW GP.

## VI. Monitoring, Recordkeeping, and Reporting Requirements

### A. NetDMR

#### 1. Introduction:

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR can be found at the EPA Region 1 NetDMR website at <http://www.epa.gov/region1/npdes/netdmr/index.html>.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to using NetDMR. To learn more about upcoming trainings, please visit the EPA Region 1 NetDMR website at <http://www.epa.gov/region1/npdes/netdmr/index.html>.

#### 2. Permit Conditions

The Draft Permit includes new provisions related to DMR submittal through NetDMR. The Draft Permit requires that, no later than six months after the date of the permittee's EPA authorization to discharge under the permit, the permittee submit all monitoring data required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs ("opt-out request"). Once permittees begin submitting reports using NetDMR, they are no longer required to submit hard copies of DMRs or other reports to EPA and the State agencies. The exception to the NetDMR reporting requirement is that **permittees in Massachusetts must send hard copies of toxicity reports to MassDEP**.

In the interim (until six months from the permittee's authorization date), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

Hard copies of DMRs and other reports required by the General permit (including copies of all toxicity tests and other notifications required by the NCCW GP) shall be submitted to EPA-New England and the appropriate State Agency as discussed below. DMRs shall have an original signature and date.

#### 3. Opt Out Request

Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR.

Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA, the permittee must submit DMRs and reports to EPA using NetDMR upon expiration of the opt-out. Opt-out requests should be sent to the following address:

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

Facilities with an approved opt-out request must submit hard copy DMRs to EPA on a monthly basis to the address listed in Section 6.1.3 or Appendix 6 of the General Permit.

### **B. Massachusetts Reporting Requirements**

Facilities approved to submit hard copy DMRs must also submit hard copy DMRs to MassDEP at the address listed in Appendix 6 on a monthly basis. Monitoring results obtained during the previous month must be summarized for each month and reported on separate DMRs, postmarked no later than the 15th day of the month following the completed reporting period. Facilities that discharge intermittently and do not discharge during a calendar month must submit a DMR form to EPA and the MassDEP indicating no discharge for that month. See section 6.3 of the General Permit for details.

### **C. New Hampshire Reporting Requirements**

Facilities approved to submit hard copy DMRs must also submit hard copy DMRs to NHDES at the address listed in Appendix 6 on a monthly basis. Monitoring results obtained during the previous month must be summarized for each month and reported on separate DMRs, postmarked no later than the 15th day of the month following the completed reporting period. Facilities that discharge intermittently and do not discharge during a calendar month must submit a DMR form to EPA and the NHDES indicating no discharge for that month. See section 6.2 of the General Permit for details.

## **VII. Administrative Requirements**

### **A. Termination of Coverage**

Permittees shall notify EPA and the appropriate State agency in writing of the termination of the discharge(s) authorized under this General Permit. The Notice of Termination (NOT) may be completed using either the suggested format provided by EPA (found in Appendix 7 of the NCCW GP), or any other form of official written correspondence that incorporates all of the information required in Appendix 4. NOT information and attachments must be submitted to EPA and the appropriate State agency at the addresses listed in Appendix 6. The NOT must include:

- 1) The name of the facility and street address of the facility for which the notification is submitted;
- 2) The name, address and telephone number of the operator addressed by the NOT;
- 3) The NPDES permit number assigned;
- 4) The basis for submission of the NOT, including: an indication that the discharge has been permanently terminated and the reason for the termination; and
- 5) A certification statement signed and dated by an authorized representative according to 40 CFR § 122.22.

The NOT must be completed and submitted within 30 days of the permanent cessation of the discharge(s) authorized under the NCCW GP.

### **B. Continuation of the Expired General Permit**

If the Non-contact Cooling Water General Permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act (5 U.S.C. 558(c)) and 40 CFR § 122.6 and remain in force and effect for discharges that were covered prior to expiration. After the expiration date of the General Permit, EPA cannot provide written authorization of coverage for new projects who submit an NOI to EPA until a replacement permit is issued. Any permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earliest of:

- a. Authorization for coverage under a reissued permit or a replacement of this permit following the timely and appropriate submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
- b. Submittal of a Notice of Termination; or
- c. Issuance or denial of an individual permit for the facility's discharges; or
- d. A formal permit decision by EPA not to reissue this General Permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease at the end of this time period.

## **VIII. Other Legal Requirements**

### **A. Section 401 Certifications**

Section 401 of the CWA provides that no federal license or permit, including NPDES permits, to conduct any activity that may result in any discharge into navigable waters shall be granted until the state in which the discharge originates certifies that the discharge will comply with the applicable provisions of §§ 301, 302, 303, 306, and 307. The § 401 certification process is being implemented in Massachusetts and New Hampshire. EPA expects both states to certify this General Permit. In addition, EPA and the Commonwealth of Massachusetts jointly issue the final permit.

### **B. The Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 et seq., and its implementing regulations (15 CFR Part 930) require a determination that any federally licensed activity affecting the coastal zone with an approved Coastal Zone Management Program (CZMP) is consistent with the CZMA. In the case of general permits, EPA has the responsibility for making the consistency certification and submitting it to the state for concurrence. EPA will request that both the Executive Office of Environmental Affairs, MA CZM, Project Review Coordinator, 251 Causeway Street, Suite 800, Boston, MA 02114; and the Federal Consistency Officer, New Hampshire Coastal Program, 222 International Drive, Suite 175, Portsmouth, NH 03801, provide a consistency concurrence that the proposed General Permit is consistent with the MA and NH Coastal Zone Management Programs.

For facilities located in New Hampshire covered under this permit, the following is a listing of NH Coastal Zone Management Enforceable Policies. EPA has addressed policies identified as applicable by NH CZM to the issuance of this permit. Policies that were not applicable to EPA's action (reissuance of this permit) are noted with "NA".

#### Protection of Coastal Resources:

1. Protect and preserve and, where appropriate, restore the water and related land resources of the coastal and estuarine environments. The resources of primary concern are coastal and estuarine waters, tidal and freshwater, wetlands, beaches, sand dunes, and rocky shores.

The NCCW General Permit is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause or contribute to a violation of water quality standards. Discharges under the permit are limited to non-contact cooling water; the most notable pollutant expected in the discharges is heat. Additionally, pH and total residual chlorine standards must be met for certain NCCW sources. The draft permit requires facilities to meet discharge limits for temperature and pH based on water quality standards, as well as total residual chlorine for municipal water discharges. Discharge limits for the state of New Hampshire may be found in part 2 of the General Permit.

2. Manage, conserve and where appropriate, undertake measures to maintain, restore, and enhance the fish and wildlife resources of the state.

The NCCW General Permit is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause, or contribute to a violation of water quality standards. The draft permit requires permittees to meet water quality –based effluent limitations for New Hampshire in Part 2 of the draft General Permit. For facilities that draw surface water for non-contact cooling, section 4.2 of the General Permit contains Best Technology available (BTA) requirements for cooling water intake structures (CWIS). These requirements, when properly implemented, are designed to maintain and conserve fish and wildlife resources by minimizing the entrainment and impingement of aquatic organisms on or within the CWIS.

3. Regulate the mining of sand and gravel resources in offshore and onshore locations so as to ensure protection of submerged lands, and marine and estuarine life. Ensure adherence to minimum standards for restoring natural resources impacted from onshore sand and gravel operations. - **NA**
4. Undertake oil spill prevention measures, safe oil handling procedures and when necessary, expedite the cleanup of oil spillage that will contaminate public waters. Institute legal action to collect damages from liable parties in accordance with state law. – **NA**
5. Encourage investigations of the distribution, habitat needs, and limiting factors of rare and endangered animal species and undertake conservation programs to ensure their continued perpetuation.

The NCCW General Permit is consistent to the maximum extent practicable with this enforceable policy by allowing coverage under this permit only if the non-contact cooling water discharges and discharge-related activities are not likely to adversely affect any species that are federally listed as endangered or threatened under the ESA or result in the adverse modification or destruction of habitat that is federally designated as critical under ESA. Facilities must determine eligibility prior to submission of a Notice of Intent for coverage and must maintain eligibility throughout the entire term of the permit. The draft General Permit provides eligibility criteria (see Appendix 2 ).

6. Identify, designate, and preserve unique and rare plant and animal species and geologic formations which constitute the natural heritage of the state. Encourage measures, including acquisition strategies, to ensure their protection.

See answer to 5, above.

Recreation and Public Access:

7. Provide a wide range of outdoor recreational opportunities including public access in the seacoast through the maintenance and improvement of the existing public facilities and the acquisition and development of new recreational areas and public access. - **NA**

#### Managing Coastal Development:

8. Preserve the rural character and scenic beauty of the Great Bay estuary by limiting public investment in infrastructure within the coastal zone in order to limit development to a mixture of low and moderate density. - **NA**
9. Reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to preserve the natural and beneficial value of floodplains, through the implementation of the National Flood Insurance Program and applicable state laws and regulations, and local building codes and zoning ordinances. – **NA**
10. Maintain the air resources in the coastal area by ensuring that the ambient air pollution level, established by the New Hampshire State Implementation Plan pursuant to the Clean Air Act, as amended, is not exceeded. - **NA**
11. Protect and preserve the chemical, physical, and biological integrity of coastal water resources, both surface and groundwater.

The NCCW General Permit is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause or contribute to a violation of applicable water quality standards and by setting discharge limits on temperature, pH, and total residual chlorine (where applicable, see Part 2 of the permit). These requirements are designed to protect the waters of the coastal and estuarine environment. The permit does not authorize discharges other than non-contact cooling water to surface waters. Discharges covered under the NCCW General Permit are limited to 1 MGD and the facilities currently covered under the permit that use groundwater for non-contact cooling discharge relatively small amounts of non-contact cooling water. Therefore, EPA does not expect the intake of groundwater from facilities covered under this permit to adversely affect groundwater resources.

12. Ensure that the siting of any proposed energy facility in the coast will consider the national interest and will not unduly interfere with the orderly development of the region and will not have an unreasonable adverse impact on aesthetics, historic sites, coastal and estuarine waters, air and water quality, the natural environment and the public health and safety. - **NA**

#### Coastal Dependent Uses:

13. Allow only water dependent uses and structures on state properties in Portsmouth, Little Harbor, Rye Harbor, and Hampton, Seabrook Harbor, at state port and fish pier facilities and state beaches (except those uses or structures which directly support the public

recreation purpose). For new development, allow only water dependent uses and structures over waters and wetlands of the state. Allow repair of existing overwater structures within guidelines. Encourage the siting of water dependent uses adjacent to public waters. - **NA**

14. Preserve and protect coastal and tidal waters and fish and wildlife resources from adverse effects of dredging and dredge disposal, while ensuring the availability of navigable waters to coastal-dependent uses. Encourage beach re-nourishment and wildlife habitat restoration as a means of dredge disposal whenever compatible. - **NA**

#### Preservation of Historic and Cultural Resources:

15. Support the preservation, management, and interpretation of historic and culturally significant structures, sites and districts along the Atlantic coast and in the Great Bay area.

The NCCW General Permit is consistent to the maximum extent practicable with this enforceable policy by requiring that prior to submitting a Notice of Intent and obtaining permit coverage, the permittee must certify eligibility with regard to protection of historic properties listed or eligible for listing in the National Registry of Historic Places (see section 3.4 and Appendix 3 of the permit).

#### Marine and Estuarine Research and Education:

16. Promote and support marine and estuarine research and education that will directly benefit coastal resource management. - **NA**

## **IX. Public Participation**

All persons who believe any condition of the draft General Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to: Suzanne Warner, Stormwater and Construction Permits Section, Water Permits Branch, Office of Ecosystem Protection, U.S. Environmental Protection Agency, 5 Post Office Square- Suite 100 (OEP06-4), Boston, Massachusetts 02109. Any person, prior to such date, may submit a written request to EPA-New England for a public hearing to consider the draft General Permit. Such requests shall state the nature of the issue proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days following the public notice or whenever the Regional Administrator finds that response to this notice indicates significant public interest. Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will respond to all significant comments made on the draft General Permit and will make the response to comments available to the public at EPA's Boston Office and available on the NCCW General Permit website, <http://www.epa.gov/region1/npdes/nccwgp.html> . The Regional Administrator will issue a final decision and publish the notice of the final permit decision in the Federal Register and forward a copy of the final decision to each person who has submitted written comments or requested a copy of the final General Permit.

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**Ken Moraff, Director**  
**Office of Ecosystem Protection**  
**U.S. Environmental Protection Agency**