UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS 02114

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO.: **NH0022021**

NAME AND ADDRESS OF APPLICANT:

Bridgewater Power Company
P.O. Box 678 - Route 3
Ashland, NH 03217

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Bridgewater Power Company
Route 3
Bridgewater, NH 03222

SIC CODE: **4911** NAICS Code(s): **221112**

RECEIVING WATER: **Pemigewasset River (Hydrologic Basin Code: 01070001)**

CLASSIFICATION: **Class B**

CURRENT PERMIT ISSUED: **9-15-2000**
EXPIRED: **9-15-2005**
RE-APPLICATION: **3-08-2005**

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1.0 Type of Facility, Discharge Location and Proposed Action

Bridgewater Power Company (BPC), located in Bridgewater, New Hampshire, is a 15 megawatt (MW) wood-fired electrical generation facility (referred to hereafter as either Bridgewater Power Company (BPC), the Station or the Facility). The Station is a "base-load" facility, having an average yearly capacity utilization rate of 99%. Electricity is generated by means of one 15 MW_{net} wood- fired steam turbine unit, which began commercial operation in 1987. There is also a small Package boiler that is only used for heat.

Bridgewater Power Company's current National Pollutant Discharge Elimination System (NPDES) Permit allows the discharge of pollutants to the adjacent Pemigewasset River. BPC currently discharges stormwater through two outfall locations (stormwater runoff is from the land adjacent to the facility, roadways, vehicle parking areas and the wood chip pile). Although BPC has not discharged from its cooling pond since it began operating in 1987, the Company requests that it continues to have the option of discharging during emergencies, to perform maintenance on the pond liner, and when needed to adjust the concentration of chemicals in the cooling water. The cooling pond is used to recycle non-contact condenser cooling water but is also used to dispose of other process streams such as boiler blowdown, floor drain waste and once-through cooling water.

Under the Clean Water Act (CWA) §§ 301(a), 316 and 402, Bridgewater Power Company's pollutant discharges must receive authorization from a National Pollutant Discharge Elimination System (NPDES) permit issued by the U.S. Environmental Protection Agency (EPA). EPA may not issue a permit for BCP unless the New Hampshire Department of Environmental Services (NH DES) either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate the New Hampshire Surface Water Quality Regulations (NH-Standards) or waives its right to certify as set forth in 40 CFR §124.53. Bridgewater Power Company has in the past obtained the necessary federal permits and state certifications.[1] EPA last reissued the Station federal permit number NH0022021 on September 15, 2000. This permit expired on September 15, 2005. The permit was administratively continued, however, because the Station timely applied for permit reissuance. As a result, Bridgewater Power Company remains subject to the existing permit until EPA issues it a new one.

EPA received Bridgewater Power Company's application for reissuance of the Facility's NPDES permit on March 8, 2005. In response to a letter from EPA that delineated deficiencies in the application, supplemental information was received June 16, 2005. EPA currently intends to reissue the Facility's NPDES permit. This Draft Permit proposes to continue to authorize the discharge of storm and cooling pond water.

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[1] First NPDES permit for this facility was issued May 21, 1990 and next (current) permit was issued September 15, 2000.

2.0 Description of Discharge

Refer to Section 4.2 of this Fact Sheet for a description of the discharges associated with each outfall location. A schematic drawing of the flow of water at the facility and the various discharges from the facility is presented on Attachment C. A site location plan is presented on Attachment B.

3.0 Permit Limits and Conditions

The Draft Permit's proposed effluent discharge and cooling water intake limits, monitoring requirements, and implementation schedules may be found in Part I (Effluent Limitations and Monitoring Requirements) of the Draft Permit.

4.0 Basis of Permit Limits

4.1 Permit Limits, Generally

The Clean Water Act (CWA) prohibits the discharge of pollutants from point sources to waters of the United States without authorization from a National Pollutant Discharge Elimination System (NPDES) permit, unless the CWA specifically exempts a particular type of point source discharge from requiring a permit. The NPDES permit is the mechanism used to apply the CWA's pollution control standards and monitoring and reporting requirements directly to particular facilities. This draft NPDES permit was developed in accordance with the CWA, EPA regulations promulgated thereunder, and any other applicable federal and state legal requirements. The regulations governing the EPA NPDES permit program are generally found at 40 C.F.R. Parts 122, 124, 125, and 136.

When developing permit limits, EPA must apply both technology-based and water quality-based requirements. To the extent that both may apply, whichever is more stringent governs the permit limits. Criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA-promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA, are set out in 40 C.F.R. Part 125, Subpart A. Development of water quality-based permit limits is addressed in, among other provisions, CWA §§ 301(b)(1)(C) and 401, as well as 40 C.F.R. §§ 122.4, 122.44, 124.53 and 124.55.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 C.F.R. §125 Subpart A) to meet best practicable control technology currently available (BPT) for certain conventional pollutants, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. The technology-based guidelines for industrial dischargers can be found at 40 CFR Parts 400 - 471 and represent the minimum level of control that must be imposed under section 301(b) and 402

of the CWA (See 40 CFR Part 125, Subpart A). In the absence of published technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish appropriate technology-based effluent limitations (*e.g.*, BAT limits) on a case-by-case basis using best professional judgement (BPJ). [See also 40 C.F.R. § 125.3.] The effluent guidelines for steam electric power plants are specific for fossil fuel or nuclear fuel facilities but do not include wood fuel units. Therefore, the effluent guidelines which represent BPT and BAT as set forth in 40 CFR Part 423 are not applicable to these types of units. However, since the discharges from wood fuel units are similar to fossil fuel units, the Steam Electric Power Generating Guidelines may serve as guidance for establishing effluent limitations for those types of discharges. Therefore, limitations for wood fuel units may be based on BPT and BAT requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423) using EPA's BPJ authority.

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 maintain or achieve state or federal water-quality standards. See CWA §§ 301(b)(1)(C) and 401. State Water Quality Standards provide a classification for all the water bodies in the state and specify the "designated uses" and numeric and narrative water quality criteria that water bodies in each classification should be able to achieve. The New Hampshire Surface Water Quality Regulations (NH-Standards) include a narrative statement that prohibits the discharge of any pollutant or combination of pollutants in quantities that would be toxic or injurious to human health or aquatic life. In addition, the State has adopted EPA's numerical criteria for specific toxic pollutants and toxicity criteria. State Water Quality Standards also contain antidegradation requirements to ensure that once a use is attained it will not be degraded. Permit limits must then be devised so that discharges do not cause violations of these Water Quality Standards.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes, or has the "reasonable potential" to cause or contribute to, an excursion above any water-quality criterion. See C.F.R. § 122.44(d)(1). An excursion would occur if the projected or actual in-stream concentration exceeds the applicable criterion. In determining "reasonable potential," EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentrations and variability in the effluent and receiving water as determined from the permit application, the permittee's monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) the sensitivity of the species to toxicity testing; (4) the known water quality impacts of processes on wastewater; and, where appropriate, (5) the dilution of the effluent that would be provided by the receiving water.

In accordance with State regulations [N.H. Code of Administrative Rules, PART Env-Ws 1705.02], the flow used to calculate permit limits for facilities on rivers or streams is based on a known or estimated value of the annual seven (7) consecutive-day mean low flow at the 10-year recurrence interval (7Q10) for aquatic life and human health (non-carcinogens only) in the receiving water at a point just upstream of the outfall. Furthermore, 10 percent (%) of the

receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations Env-Ws 1705.01. The current set of New Hampshire Surface Water Quality Regulations were adopted on December 3, 1999, and became effective on December 10, 1999.

When using chemical-specific numeric criteria to develop permit limits, both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentrations, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 C.F.R. § 122.44(d)(1) and are implemented under 40 C.F.R. § 122.45(d). In the Draft Permit for Bridgewater Power Company, the Region has established, pursuant to 40 C.F.R. § 122.45(d)(1), maximum daily and average monthly discharge limits for specific chemical pollutants to satisfy Water Quality Standards.

Under CWA § 401, EPA may not issue a NPDES permit unless it first obtains a certification from the state confirming that all water-quality standards will be satisfied or the state waives its certification rights. If the state issues a certification with conditions, then the permit must conform to the conditions. See 40 C.F.R. §§ 124.53 and 124.55.

The Draft Permit’s effluent monitoring requirements have been established under the authority of CWA §§ 308(a) and 402(a)(2) and in accordance with 40 C.F.R. §§ 122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis which will provide continuous, representative information on the levels of regulated materials in the waste water discharge streams. The approved analytical procedures are to be found in 40 C.F.R. Part 136 unless other procedures are explicitly required in the permit.

The CWA’s anti-backsliding requirements prohibit a NPDES permit from being renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless an exception to the anti-backsliding requirements applies. See CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. §122.44(l)(1) and (2). EPA's anti-backsliding provisions found at 40 C.F.R. §122.44(l) generally prohibit the relaxation of permit limits, standards, and conditions.

In addition to technology-based and water quality-based requirements, limits for thermal discharges may potentially be based on a variance from such requirements under CWA § 316(a).

Furthermore, the permit must also satisfy the requirements of the Endangered Species Act (ESA) and the essential fish habitat (EFH) provisions of the 1996 Amendments (PL 104-297) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)). There are no endangered species located in the Pemigewasset River and EFH requirements are discussed further in Section 6 of this Fact Sheet.

4.2 Facility Information

The Station is located on the west bank of the Pemigewasset River in Bridgewater, New Hampshire. See Attachment B for a map showing the geographical location of the facility. As previously discussed, the plant uses wood chips as fuel to generate approximately 15 Megawatts of electric power. Heat resulting from incineration of the wood chips produces steam in the boiler. Steam is used to power a turbine electric generator which produces electric power for commercial sale. Fuel oil is also used at the plant as a starter fluid in the burner.

All water used at the facility is withdrawn from groundwater wells located on-site. A maximum of 290 gallons per minute (gpm) of water can be drawn from the wells and is used for cooling water make up (99 gpm), boiler feed water (6 gpm via reverse osmosis demineralizer), miscellaneous mechanical equipment cooling systems (170 gpm), potable and sanitary uses. The facility does not withdraw water directly from the Pemigewasset River. Therefore, Clean Water Act 316(b) regulations for cooling water intake structures does not apply to this facility.

The Station uses a one million gallon cooling pond equipped with spray modules to cool and recycle water through the steam generator's cooling condenser at 16,000 gpm and through the generator's hydrogen coolers at 270 gpm. The pond is lined and is approximately 350 feet long by 150 feet wide and 5 feet deep at its maximum depth. In addition, the cooling pond is used for the disposal of other process waste streams including boiler blowdown (5-6 gpm intermittently), mechanical equipment cooling systems (170 gpm) and floor drains (15 gpm of miscellaneous gland leakage and hose stations). Bridgewater estimates that approximately 240 gpm of water in the cooling pond is lost through evaporation and drift depending on the season. See Attachment C for the facility's water flow schematic. All sanitary wastewater is disposed of in on-site septic systems. Historically, the only discharge to the Pemigewasset River has been storm water.

Although, process/cooling water from the cooling pond has never been discharged to the river, the Company requests that it continues to have the option of discharging during emergencies, to perform maintenance on the pond liner, and when needed to adjust the concentration of chemicals in the cooling water. BCP estimates that the contents of the pond can be discharged over a period of two to three days. The current BCP permit requires that an annual Whole Effluent Toxicity (WET) tests, including priority pollutant scans, are performed on the pond water regardless of whether there has been a discharge to the river, to gather information about the characteristics of the water prior to discharging. See Attachment A of this Fact Sheet for a summary of these test results.

There are currently two permitted discharge sites at the Station: Outfall 001 and Outfall 002. Outfall 001 is broken down into two separate sources: 001A (process) and 001C (storm) water discharges; whereas, Outfall 002 (storm) is solely storm water discharge. In the later part of 2000, BPC elevated the Outfall 002 discharge pipe 6 inches above the rainwater catch basin to to collect and prevent storm water discharges through this location. This was done because of concerns the NHDES-WD had regarding the drift from the spray pods. When there is a heavy

rain event, however, rainwater in the swale may overflow and discharge through this location. According to Mike O'Leary, BPC's Plant Manager, no discharge has occurred since the discharge pipe was relocated. (March 24, 2006 phone conversation with Sharon Zaya, EPA) See Attachment A of this Fact Sheet for a summary of the storm water sampling test results.

4.3 Derivation of Effluent Limits

4.3.1 Limits for Conventional Pollutants

Limitations for conventional pollutants in the Draft Permit are based upon those in the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44. In addition, limits for Total Suspended Solids (TSS) and Oil & Grease (O&G) and were originally established based on Best Available Technology Economically Achievable (BAT) requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423.13) using EPA's BPJ authority.

The pH limits and State Permit Conditions language regarding pH in the Draft Permit remain unchanged from the existing permit. As described in the 2000 Fact Sheet, the State Permit Conditions language allows for a change in pH limit(s) under certain conditions for process wastewater flows. A change would be considered if the applicant can demonstrate to the satisfaction of the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) that the in-stream pH standard will be protected when the discharge is outside the permitted range, then the applicant or NHDES-WD may request (in writing) that the permit limits be modified by EPA to incorporate the results of the demonstration.

Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA added a provision to the existing permit, which is retained in the Draft Permit, allowing EPA to modify the pH limit(s) using a certified letter approach. (See Part I.A.8.b of the Draft Permit) This change would be allowed as long as it can be demonstrated that the revised pH limit range does not alter the naturally occurring receiving water pH. However, the pH limit range shall not be less restrictive than 6.0 - 9.0 S.U. found in the applicable National Effluent Limitation Guideline (Steam Electric Power Generating Point Source Category in 40 CFR §423) for the facility.

If the State approves results from a pH demonstration study, the permit's pH limit range can be relaxed in accordance with 40 CFR 122.44(l)(2)(i)(B), based on new information not available at the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA anticipates that the limit determined from the demonstration study, as approved by the NHDES-WD, will satisfy all effluent requirements for this discharge category and will comply with NH-Standards.

4.3.2 Limits for Nonconventional and Toxic Pollutants

Total Residual Chlorine

The maximum daily limit for Total Residual Chlorine (TRC)[2] in the Draft Permit is based upon in the existing permit limit in accordance with the antibacksliding requirements found in 40 CFR §122.44 and was originally established based on Best Available Technology Economically Achievable (BAT) requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423.13) using EPA's BPJ authority.

Metals

The metals limitations in the Draft Permit are based upon those in the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44. The iron (Fe) limit was originally established based on Best Available Technology Economically Achievable (BAT) requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423.13) using EPA's BPJ authority.

The copper (Cu) limit was determined during the last permit issuance based on the following discussion, as described in the 2000 Fact Sheet, "[t]he average monthly and maximum daily copper limits in the Draft Permit are based on the chronic and acute aquatic-life criteria, respectively, found in the current NH-Standards multiplied by the appropriate available dilution of the receiving water. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). An available dilution of 954 and 138 for the average monthly and maximum daily limits, respectively, was developed for two process flow periods from the cooling water pond (Outfall 001A). For long-term periods (average monthly), a flow of 50 gpm (0.072 million gallons per day [MGD]) was used, whereas, for short-term periods (maximum daily) 0.5 MGD was used along with an estimate of the 7Q10 low flow of 118 cubic feet per second (76.3 MGD) in the Pemigewasset River just above the facility's outfall, and a 10 % set aside or reserve (Env-Ws 1705.01). See Attachment [D] for equation to calculate available dilution.

NH-Standards for metals such as copper are in terms of dissolved metal; however, EPA is required by 40 CFR 122.45(c) to regulate the total recoverable metals. Therefore, to convert the dissolved metal acute and chronic aquatic-life criteria to total recoverable metal a default translator equal to the conversion factors found in Table 1703.2 of the NH-Standards was used for a default receiving water hardness of 25 mg/l unless the permittee can show that different translator and hardness values are more appropriate. Accordingly, the dissolved metal standard

[2] Only chlorine is used as a biocide. Bromine is no longer used at this facility. Therefore, the Draft Permit limit has been changed from Total Residual Oxidants (TRO) to Total Residual Chlorine (TRC).

found in Env-Ws 1703.21(b), Table 1703.1 is divided by the appropriate conversion factor (Table 1703.2) prior to deriving the appropriate total recoverable acute and chronic aquatic-life criteria. In this case, the conversion factor for both acute and chronic copper is 0.96 and the acute and chronic aquatic-life criteria are 3.6 and 2.7 ug/l prior to the division by the conversion factor. This is consistent with the recommendations contained in Section 1.5 of the Metals Translator Guidance cited at the end of this paragraph. If there is disagreement with the above assessment, the permittee has the option of performing additional sampling of the effluent, receiving waters and effluent/receiving water mixtures in order to develop site-specific partition coefficients for these metals using the procedures described in "The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit From A Dissolved Criterion," EPA, Office of Water, EPA 823-B-96-007, June 1996."

For Total Recoverable Copper, EPA calculated an average monthly limit of 2.68 mg/L and a maximum daily limit of 0.52 mg/l. (See Attachment D for the equation used in this calculation). Because an average monthly limit cannot be higher than a maximum daily limit, the maximum daily value of 0.52 mg/l for total recoverable copper is also being used as an average monthly limit.

Total Recoverable Zinc is required in the current permit as "Report" only (with out limits). This requirement was removed from the Draft Permit because Total Recoverable Zinc is required as part of the WET test for this discharge location.

BPC uses dry physical cleaning procedures on the boiler, condenser, air preheaters and other types of process equipment. Chemical cleaning is not performed at this facility. Waste from metal cleaning is hauled for off-site treatment and disposal. Therefore, the Draft Permit includes a provision that prohibits the discharge of metal cleaning wastes.

Based on available dilution, EPA has determined that there is no reasonable potential for other metals or toxic pollutants in the discharge to cause an exceedence of NH-Standards.

Temperature

As specified in the 2000 Fact Sheet, "[t]he temperature limit of 95 degrees Fahrenheit (°F) in the existing and Draft Permits meets the narrative temperature criteria of the NH-Standards [Env-Ws 1703.13(b)]. Performing an energy balance on this facility's discharge using the river's temperature extremes, its 7Q10 flow likely to occur during either the summer or the winter low-flow periods, and the facility's maximum discharge temperature indicates that this facility's thermal discharge causes an indiscernible rise in the ambient streamflow temperature. For example, assuming that during the summer and the winter low-flow periods instream ambient temperatures just above the outfall are 70 °F and 35 °F, respectively, and that the 7Q10 flow is 106 cfs (includes the reduction for the State's 10 percent reserve rule [Env-Ws 1705.01]) the 95 °F thermal discharge will only cause an increase in receiving water temperatures of 0.03 and 0.06 °F, respectively, over ambient conditions (See Attachment [D] for equation). Therefore, no [CWA] 316(a) variance is needed for the thermal component of this discharge as the resultant

increase in streamflow temperature is well within NH-Standards." Furthermore, EPA has determined that, for this facility, the best available technology (BAT) for thermal pollution control is the use of spray modules. Therefore, there is no need for a 316(a) variance from this technology standard. EPA is carrying forward the same temperature limit in the Draft Permit.

New Hampshire Fish and Game has expressed concern regarding the extent of the thermal plume caused by the discharge and the potential for acute impacts to the biological organisms in the vicinity of the discharge. EPA agrees that potential impacts exist and is therefore including, as a permit requirement, in-river temperature monitoring to characterize the thermal plume. In addition, EPA has included a requirement to limit the rate of discharge to no more than 448 gpm.

4.3.3 Whole Effluent Toxicity

As detailed in the 2000 Fact Sheet, "[i]n order to protect the Anadromous Fish Program by assuring that Bridgewater Power Company does not discharge an effluent of toxic nature into the Pemigewasset River, EPA-New England is continuing the existing permit's Whole Effluent Toxicity (WET) testing requirements in the [D]raft [P]ermit. EPA believes this is warranted given the discharge has reasonable potential to contain Water Treatment Chemicals (WTCs) used in the boiler water and/or cooling systems which may be toxic to aquatic organisms if released in sufficient concentrations.

New Hampshire law states that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life;...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-WS 1703.21(a)(1)). The federal NPDES regulations at 40 CFR §122.44(d)(1)(v) require whole effluent toxicity limits in a permit when a discharge has a "reasonable potential" to cause or contribute to an excursion above the State's narrative criterion for toxicity. Where EPA - New England believes toxicity testing is appropriate and necessary as described above, the type of toxicity testing (acute and/or chronic) and the effluent limitation (LC50 and/or C-NOEC) are set based upon available dilution as outlined in Attachment [D]. When WET limits are required for industrial dischargers such as this facility, EPA-New England adopts those limits from the Toxicity Strategy for Municipal Permits (Attachment [E])."

Based upon available dilution and in accordance with EPA-New England's Toxicity Policy, semiannual testing and an acute limit of LC50 equal to or greater than 50 percent effluent is continued in this Draft Permit. LC50 is defined as the concentration of toxicant, or in this case, as percentage of effluent that would be lethal to 50 % of the test organisms during a specific time period. The Acute-No Observed Effect Concentration (A-NOEC) monitoring-only requirement is continued in the Draft Permit due to the potential presences of WTCs in the discharge. Results of these toxicity tests will demonstrate compliance with the no toxic provision of the NH-Standards. This Draft Permit has maintained the WET testing requirement at two (2) tests per year for two species. The acute WET test calls for 48 hour testing using the species Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas). Results from these tests will provide the EPA, the State and the permittee with an estimate of the overall toxic content of its

discharge.

Toxicity sample collection will continue to be required each 2nd and 3rd calendar quarters ending June 30th and September 30th, respectively. These WET tests shall be collected and tests completed during those quarters in which there is a discharge from Outfall 001A, with the results submitted to EPA and the NHDES-WD by the 15th day of the month following the end of the quarter sampled. For example, test results for the 2nd calendar quarter beginning April 1st and ending June 30th, are due by July 15th. If toxicity violations are shown, monitoring frequency and testing requirements may be increased in addition to enforcement actions. The permit may also be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements or chemical specific limit(s).

This Draft Permit requires reporting of selected parameters determined from the chemical analysis of the WET tests 100 % effluent sample. Specifically, Ammonia Nitrogen as Nitrogen, Hardness, and Total Recoverable Cadmium, Copper, Chromium, Lead, Nickel and Zinc are to be reported on the appropriate Discharge Monitoring Report (DMR) for entry into EPA's Permit Compliance System's Data Base. EPA-New England does not consider these reporting requirements an unnecessary burden as reporting these constituents is required with the submission of each toxicity testing report. (See Draft Permit, Attachment A, page A-7.) The permittee may use the metals results from the copper, lead and zinc analysis from the WET tests in partial fulfillment of those metal limits/monitoring-only requirements in the Draft Permit.

4.3.4 Water Treatment Chemicals (WTCs) and Quality of Cooling Pond Water

This facility operates its spray modules to cool the pond water thus allowing for constant water recycling to condense steam after its passage through the turbines. This combination of spray modules along with a continuous flow of make-up water from wells allows this facility to operate as a closed-loop system resulting in no discharge to the receiving water. Water is sprayed into the atmosphere above the pond’s surface to cool; however, not all that spray evaporates or falls back onto the pond’s surface. Some falls directly onto areas subject to washoff by precipitation events (i.e.: capture by storm water runoff).

Bridgewater Power Company may discharge through Outfall 001A during emergencies, to perform maintenance on the pond liner, and when needed to adjust the concentration of chemicals in the cooling water. An example of an emergency discharge is if there is a prolonged shut-down during the winter and the water in the pond started to freeze causing damage to its containment structure and the spray module equipment.

Given the nature of the possibly sudden and infrequent discharge, EPA-New England is concerned about the potential build-up of toxic substances in the pond. As previously discussed, pond water is continuously recycled and WTCs are added to both the cooling water and the boiler water, which is also discharged to the pond as boiler blowdown. Thus, monitoring water in the pond would lend insight into whether or not there is potential for the discharge of toxic substances from the pond through Outfall 001A (process wastewater) and the carryover of these

toxic substances into storm water runoff through Outfalls 001C and 002 (storm water).

Consequently, EPA has required that every July, the permittee must collect a representative sample of water from the cooling pond and perform, on that sample, a: (1) priority pollutant scan for all the pollutants shown in 40 CFR Part 423, Appendix A; and (2) 48-Hour static acute WET test using two species, Daphnid (Ceriodaphnia dubia) and the Fathead Minnow (Pimephales promelas).

As described in the 2000 Fact Sheet, "EPA-New England believes this approach is necessary to monitor for the potential build up, if any, of toxic substances in the cooling water lagoon due to the facility's method of operation in order to prevent future exceedances in permitted limits and/or in-stream NH-Standards should the lagoon need to be suddenly drained and/or from storm water runoff. Furthermore, when emergency drainage situations occur there will be little or no opportunity to evaluate this discharge's ability to meet permitted limits and/or in stream NH-Standards. Therefore, EPA-New England decided to take the proactive stance outlined above to be prepared for the onset of an "emergency discharge" situation if and when it occurs. Results of these analyses are considered "New Information" and could result in additional limits and/or monitoring requirements for Outfall 001A (process wastewater) and Outfall's 001C and 002A (storm water)."

Should BPC discharge the contents of the cooling pond, the flow rate shall not exceed 0.5 MGD as required by the Draft Permit. At this flow rate, there is only a 0.7 percent increase at 7Q10 flow levels after accounting for the State's 10 percent reserve rule. Monitoring for all outfall parameters including performing a WET test is required during any discharge. At 0.5 MGD discharge rate, it will take approximately two (2) days to completely empty the pond of its 1 million gallon contents.

4.3.5 Storm Water

Effluent Limitations

Since EPA has not promulgated any guidelines for storm water discharge from wood burning power plants, EPA is continuing with a three pronged approach in this Draft Permit. That is: (1) continue the existing permit's storm water limitations in the Draft Permit in accordance with the antibacksliding requirements found in 40 CFR §122.44; (2) continue to require TSS monitoring in order to assess compliance with the narrative requirement in Part I.A.7.d. of the Draft Permit which requires the permittee to prevent wood chips, sawdust, waste ash, and other related debris from becoming part of storm water runoff; and (3) require the permittee to annually update its Storm Water Pollution Prevention Plan (SWPPP) for its storm water discharges.

Storm Water Pollution Prevention Plan

Pursuant to Section 304(e) of the CWA and 40 C.F.R. §125.103(b), Best Management Practices (BMP) may be expressly incorporated into a permit on a case-by-case basis where necessary to

carry out Section 402(a)(1) of the CWA. This facility engages in activities which could result in the discharge of toxic and hazardous pollutants to waters of the United States either directly or indirectly through storm water runoff. These operations include at least one of the following from which there is or could be site runoff: material storage, in-facility transfer, material processing, material handling, or loading and unloading. The permit requires this facility to update its SWPPP which includes Best Management Practices appropriate for this specific facility to control storm water discharges from these and other activities which could contribute pollutants to waters of the United States, potentially violating the State's Water Quality Standards. Specifically, at this facility, waste ash and wood chip storage areas are examples of material storage, processing and handling operations that shall continue to be included in the SWPPP.

The goal of the SWPPP is to eliminate or reduce the potential for the discharge of pollutants through the storm water system. In the event the potential cannot be eliminated, the permittee should select BMPs to reduce, to the maximum extent possible, the pollutant loading to the receiving water. The SWPPP requirements direct the permittee to review the physical equipment, the operational procedures, and the operator training at the facility. The objective of this review is to protect waters of the United States by eliminating or minimizing the potential discharge of any pollutants.

The SWPPP requirements in the Draft Permit are intended to facilitate a process whereby the permittee thoroughly evaluates potential pollution sources at the power plant, and following that, selects and implements appropriate measures necessary to prevent or control the discharge of those potential pollutants in storm water runoff.

This process involves the following four main steps: (1) forming a team of qualified facility personnel who will be responsible for updating the SWPPP and assisting the plant manager in its implementation; (2) reassessing the potential storm water pollution sources; (3) selecting and implementing appropriate management practices and controls for these potential pollution sources; and (4) reevaluating, periodically, the effectiveness of the SWPPP in preventing storm water contamination and in complying with the various terms and conditions of the Draft Permit.

The Draft Permit requires the permittee to update and submit the SWPPP no later than 60 days after the permit's effective date and continue to implement the plan throughout the duration of the permit. The SWPPP is a supporting element to any numerical effluent limitation by minimizing the discharge of pollutants through proper operation of the facility. Consequently, the SWPPP is as equally enforceable as the numerical limits on the storm water discharges. EPA has developed multisector general permits for the Steam Electric Power Generating Point Source Category and the Timber Products Facilities, that while not directly applicable to this facility, have components in their individual SWPPP that are potentially applicable to this facility. For example, in the Steam Electric Category runoff from coal piles is akin to runoff from waste ash piles; while, in the Timber Products Category runoff from log storage and handling areas is akin to runoff from wood chip storage areas. Therefore, the permittee is encouraged to review both SWPPP plans which can be found in the Federal Register, Vol. 60.,

No. 189, Friday, September 29, 1995, Part XI.A.6. pgs. 50834-50846 for Timber Products and Part XI.O.3. pgs. 51197-51203 for Steam Electric Facilities while updating the facility's SWPPP.

Although EPA has determined that there is, currently, the presence of "existing exposure," the Draft Permit includes a provision for BPC to opt out of the permit's storm water requirements by certifying "no exposure."

However, for facilities that do not opt out, Section 402(p) of the Clean Water Act requires that EPA issue permits for storm water discharges associated with industrial activity. BPC discharges storm water associated with industrial activity within the meaning of 40 CFR Section 122.26(b)(14)(vii), and is therefore required to have a storm water permit. The storm water discharges from these activities must satisfy the Best Conventional Technology (BCT) and Best Available Technology (BAT) standards and must comply with any more stringent water quality standards if BCT and BAT are inadequate.

5.0 Antidegradation

The Draft Permit is being reissued with identical parameter limits and coverage, and no change in outfall location. Therefore, EPA expects the State of New Hampshire to indicate that there will be no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted.

6.0 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 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. 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Merrimack River and its tributaries, including the Pemigewasset River in the vicinity of Ashland, are designated essential fish habitat (EFH) for Atlantic salmon (*Salmo salar*). According to the New Hampshire Fish and Game Department, there is an extensive stocking program in the Pemigewasset River above its confluence with the Squam River. The stretch of the Pemigewasset River where it meets the Squam River is used by smolts during their spring

migration to the sea.

While this is a power generating facility, the source water for cooling comes exclusively from groundwater wells which precludes the need for a cooling water intake structure. Additionally, the heated effluent is cooled in a man-made pond, and as such, no discharge to the Pemigewasset River occurs. Were the plant to discharge into the river, the effluent would be rapidly diluted so as to raise the ambient temperature by no more than a one tenth of one degree Fahrenheit.

Based on the permit requirements identified in this Fact Sheet that are designed to be protective of aquatic species including Atlantic salmon and other anadromous species, EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge is not likely to adversely effect Atlantic salmon EFH. If adverse effects to EFH do occur as a result of this permit action, or if new information becomes available that changes the basis for this determination, then NMFS will be notified and consultation will be promptly initiated.

7.0 Monitoring Frequency

Compliance monitoring frequencies for Outfall 001A (process) were established for Flow, TSS, Metals (copper, lead, and iron), TRC, and pH in accordance with the EPA/NHDES-WD Effluent Monitoring Guidance mutually agreed upon and first implemented in March 1993 and last revised on July 19, 1999. The monitoring frequency for O&G was carried forward from the existing permit. The monitoring frequency for Temperature was changed to “Continuous” to better characterize the effluent. WET test monitoring requirements are based on EPA-New England’s Municipal Toxicity Policy. The sample type in the Draft Permit for TSS, metals, and WET testing remains as “Grab” in accordance with the EPA/NHDES-WD Effluent Monitoring Guidance.

Required sampling parameters and compliance monitoring frequencies for Outfalls 001C and 002 (storm water) have remained unchanged from those in the existing permit and include: Flow, O&G, TSS, Chemical Oxygen Demand (COD), TSS and pH.

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA as required by 40 C.F.R. 122.41 (j), 122.41 (j)(4), (5), 122.44 and 122.48.

8.0 State Certification Requirements

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate the State's Surface Water Quality Regulations (NH-Standards) or waives its right to certify as set forth in 40 CFR §124.53.

Upon public noticing of the Draft Permit, EPA is formally requesting that the State's certifying

authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The NHDES-WD is the certifying authority. EPA expects that the Draft Permit will be certified. Regulations governing state certification are set forth in 40 CFR §§124.53 and 124.55.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the CWA, Sections 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law. In addition, the State should provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since certification is provided prior to permit issuance, failure to provide this statement for any condition waives the right to certify or object to any less stringent condition which may be established by EPA during the permit issuance process following public noticing as a result of information received during that noticing. If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA or State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The sludge conditions implementing section 405(d) of the CWA are not subject to the 401 certification requirements.

Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

9.0 General Conditions and Definitions

The remaining general and special conditions of the permit are based on the NPDES regulations, 40 C.F.R. Parts 122 through 125, and consist primarily of management requirements common to all permits.

10.0 Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft 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 Sharon Zaya, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch (CIP), 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

11.0 EPA Contact

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 A.M. and 5:00 P.M., Monday through Friday, excluding holidays from:

Ms. Sharon Zaya, Environmental Engineer
U.S. Environmental Protection Agency
Office of Ecosystem Protection
1 Congress Street, Suite 1100 (CIP)
Boston, Massachusetts 02114-2023
Telephone: (617) 918-1995 / FAX No.: (617) 918-0995

_____ **Linda M. Murphy, Director**
Date: **Office of Ecosystem Protection**
U.S. Environmental Protection Agency