

I. Summary

The U.S. Environmental Protection Agency's New England Region (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) are issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Brayton Point Station (BPS) power plant in Somerset, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 *et. seq.*, and the Massachusetts Clean Water Act, M.G.L. Ch. 21, §§ 26–35. The facility is owned and operated by USGen New England, Inc., a subsidiary of PG&E National Energy Group, which is, in turn, a subsidiary of PG&E Corporation (referred to hereinafter as either the “permittee” or “PG&E-NEG”).

Located on the shores of Mount Hope Bay, BPS commenced operations in the 1960s, before enactment of the CWA. Relying mostly on coal for fuel, BPS is the largest fossil fuel-burning electric power plant in New England. BPS discharges pollutants to and withdraws water from Mount Hope Bay. The bay is an interstate waterbody transected by the Massachusetts/Rhode Island state line and makes up part of the larger Narragansett Bay estuary. The facility's discharges of pollutants and cooling water withdrawals are subject to various requirements under Federal law and the laws of both States.

In accordance with the provisions of 40 CFR 124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit (No. MA0003654) issued for BPS. The responses to comments explain and support the EPA determinations that form the basis of the Final Permit. This summary briefly describes the scientific and legal bases of the Final Permit limits and the permit process, as well as a number of minor changes that have been incorporated into the Final Permit in response to comments.

EPA and the MA DEP issued BPS's last NPDES permit on June 16, 1993, and it became effective 30 days later. The permit's 5-year term expired in July 1998, but it remains in effect pending issuance of a new Final Permit. On July 22, 2002, EPA and the MA DEP jointly issued the new Draft NPDES Permit for BPS under Federal and State law. At that time, the agencies opened a 1½-month public comment period on the Draft Permit, scheduled to end on September 4, 2002. EPA regulations require that comment periods extend a minimum of 30 days. In response to a request from the permittee, the comment period was subsequently extended to 2½ months (i.e., until October 4, 2002). In addition to inviting written comments, EPA and the MA DEP held two public informational meetings, one in Somerset, Massachusetts (August 5, 2002), and one in Bristol, Rhode Island (August 6, 2002). At these meetings, the agencies made presentations, answered questions, and listened to views presented by the public, including the permittee. The agencies then held two formal public hearings to receive comments on the Draft Permit. Again, one was in Somerset (on August 26, 2002) and the other was in Bristol (on August 27, 2002).

EPA received a total of 167 sets of written comments on the Draft Permit, comprising hundreds of pages of material. EPA and the MA DEP also received oral comments from numerous individuals at the two public hearings. Some individuals provided both written and oral comments, and some commenters, including numerous representatives of the permittee, spoke at both public hearings. In addition to the permittee's comments, EPA also received comments from a number of elected officials from both Massachusetts and Rhode Island, numerous governmental entities (at the Federal, State, and local levels), private organizations (e.g., environmental organizations, fishing organizations, and business organizations), and many individual citizens. The comments presented a wide range of viewpoints. Many supported the Draft Permit as is, whereas others commented either that the permit was too stringent or that it was not stringent enough.

EPA and the MA DEP greatly appreciate the time, effort, information, and expertise that the commenters, including the permittee, have contributed to improve the development of this Final Permit. EPA has given careful consideration to the comments and information it has received. Thus, the permit has been thoroughly investigated from many perspectives. EPA's commitment to considering all the information and viewpoints presented resulted in a lengthy decision-making process for the Final Permit because of the complexity of the issues at hand and the volume of comments received. Indeed, considering and responding to certain comments required detailed analysis, as presented in EPA's responses to comments.

In addition, EPA sought review of the permit by various Federal and State government agencies in accordance with applicable law. Pursuant to CWA § 401(a)(1), the MA DEP has certified that the Final Permit's limits satisfy Massachusetts' water quality standards. Pursuant to the Coastal Zone Management (CZM) Act, the Massachusetts CZM Office has confirmed that the Final Permit limits are consistent with the Commonwealth's CZM Program. EPA has also determined that the Final Permit's limits satisfy applicable Rhode Island water quality standards. The Rhode Island Department of Environmental Management (RI DEM) has indicated that limits at least as stringent as those in the Final Permit are necessary to satisfy the State's water quality standards, and that it does not object to the permit's limits. Finally, the National Marine Fisheries Service has agreed that the permit satisfies the Essential Fish Habitat requirements of the Magnuson-Stevens Fishery Conservation and Management Act, as well as requirements of the Endangered Species Act.

In the end, EPA and the MA DEP believe that the extensive time and effort invested in this process have produced a Final Permit consistent with Federal and State law and supported by sound science and public policy. EPA believes that compliance with this permit will play an important role in protecting and restoring the ecosystem of Mount Hope Bay, an important public resource.

A. Ecological Considerations

EPA and the MA DEP have concluded that BPS's large thermal discharge to, and cooling water withdrawal from, the Mount Hope Bay estuary have caused or contributed to significant adverse environmental impacts, including the collapse of the bay's fish stocks. Specifically, EPA believes that BPS's discharge of waste heat—approximately 42 trillion British thermal units (TBtu) discharged annually—has adversely affected the important estuarine habitat in the bay. For example, BPS's thermal discharge alters the normal temperature profile of the bay so that water temperatures exceed preferred temperatures for various resident fish species. In addition, BPS's cooling water withdrawals of approximately 1 billion gallons per day from the bay result in the entrainment and impingement of trillions of marine organisms each year, including the eggs, larvae, juveniles, and adults of various fish species, such as winter flounder. EPA and the MA DEP have reached these conclusions based on careful consideration of data, scientific studies, and extensive comments on the Draft Permit, including contrary views presented by the permittee.

EPA has determined that the thermal discharge limits in the Final Permit, representing a 96 percent reduction over the current condition, are both necessary and sufficient to “assure the protection and propagation of a balanced, indigenous population of fish, shellfish and wildlife” in Mount Hope Bay, as required by § 316(a) of the CWA. In addition, EPA has determined that the less stringent thermal discharge limits requested by the permittee will not meet this standard. The MA DEP has concurred with EPA's § 316(a) determination.

EPA has also determined that the cooling water intake capacity limits in the Final Permit—representing a 94 percent reduction in water withdrawals from the bay—are both necessary and sufficient to ensure that the capacity of BPS's cooling water intake reflects “the Best Technology Available for minimizing adverse environmental impacts,” as required by § 316(b) of the CWA. This reduction in cooling water

withdrawal volume will achieve a like percentage (i.e., 94 percent) reduction in entrainment and impingement of marine life. EPA has also determined that the less stringent cooling water intake limits requested by the permittee will not satisfy this standard. The MA DEP has concluded that the limits in the Final Permit adequately address the entrainment and impingement impacts from BPS's cooling water intake structures and will allow for the attainment of the designated uses of Mount Hope Bay, as set forth in state water quality standards.

As with the Draft Permit, the Final Permit imposes performance standards limiting thermal discharges (measured in British thermal units and maximum temperature) and cooling water intake capacity (measured in millions of gallons per day [MGD]). The permittee may choose the method by which it will comply with these limits. EPA has concluded, however, that converting the power plant's open-cycle cooling system to a closed-cycle system using some type of wet mechanical draft cooling towers is likely the most cost-effective way for the facility to meet the proposed permit limits. This type of system would not, however, provide for completely "closed-cycle" cooling. The facility would still require water withdrawals of approximately 56 MGD for so-called "make-up water" for the cooling system, and, after losses to evaporation, a 38-MGD maximum daily discharge of thermal effluent would remain.

EPA and the MA DEP developed this permit to satisfy the requirements of the applicable Federal and State water pollution control laws. Viewed in a larger context, however, the agencies see the reduction in BPS's impact on Mount Hope Bay that will result from this permit as an important part of broader public and private efforts to restore and maintain the health of the ecosystem, including the fishery, of Mount Hope Bay and the greater Narragansett Bay estuary. Other efforts in this regard include steps to improve sewage treatment and abate CSOs from the City of Fall River and steps to improve fishery management (including implementation of fishing restrictions) in both the Massachusetts and Rhode Island portions of Mount Hope Bay. Since BPS is the largest industrial discharger affecting the habitat and fishery of Mount Hope Bay, appropriate controls on the power plant's discharges and water withdrawals will be a critical contribution to this larger effort. Moreover, by upgrading the power plant to include modern cooling technology, the new permit limits can be met while allowing the plant to continue as a major source of electricity for New England without significant effects on consumer electric rates.

B. Final Permit Limits

The Final Permit for BPS includes limits on the discharge of a number of chemicals, metals, and other pollutants, including thermal effluent, as well as limits on the capacity of the plant's cooling water intake structures (CWISs). Although EPA paid careful attention to each aspect of the permit, the limits on thermal discharge and cooling water intake capacity have been the subject of extreme public interest and have required particularly rigorous analysis because of the nature of the issues presented and the applicable legal framework.

The thermal discharge limits for BPS are based on a site-specific variance under § 316(a) of the CWA. The limits on cooling water intake capacity are based on the site-specific, best professional judgment (BPJ) application of the requirements of CWA § 316(b) and State water quality standards. Thus, these limits are based on separate, independent legal requirements, each of which must be satisfied.

Thermal Discharge Limits. NPDES permits generally must include either technology-based or water quality-based limits, with the more stringent limits governing. Section 316(a) of the CWA, however, authorizes EPA to allow less stringent thermal discharge limits based on a variance from technology-based and/or water quality-based requirements (a "CWA § 316(a) variance"). Specifically, CWA § 316(a) authorizes EPA to permit alternative, less stringent thermal discharge limits when it is demonstrated to EPA that the alternative limits "will assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on [the receiving water] ..." (referred to hereinafter as the

“balanced indigenous population” or “BIP”). While economic and technological considerations are reflected in technology-based standards, the statutory test for a CWA § 316(a) variance is based solely on the stated biological considerations. The thermal discharge limits in the Draft Permit for BPS were, in fact, based on such a CWA § 316(a) variance.

After careful consideration of public comments and updated analyses conducted in response to those comments, EPA has concluded that the thermal discharge limits included in the Draft Permit are necessary to satisfy the requirements of CWA § 316(a) and should remain unchanged in the Final Permit. Therefore, this Final Permit establishes performance standards including an annual thermal discharge limit of 1.7 trillion Btu (Tbtu), a maximum discharge temperature of 95 °F, and a delta-T limit of 22 °F. (A delta-T limit restricts the extent to which a facility may increase the temperature of the water it withdraws from a source waterbody when it is discharged to the receiving water. In other words, subtracting the influent temperature from the effluent temperature yields the delta-T.) These limits are less stringent than what would have been required by technology-based or water quality-based requirements. These limits are, however, substantially more stringent than the CWA § 316(a) variance-based thermal discharge limits requested by the permittee. EPA determined that the less stringent limitations requested by the permittee would not satisfy the statute. A detailed explanation of EPA’s CWA § 316(a) determination for the Draft Permit is set forth in Chapter 6 of EPA’s *Clean Water Act NPDES Permitting Determinations for Thermal Discharge and Cooling Water Intake from Brayton Point Station in Somerset, MA* (July 22, 2002) (“EPA’s July 22, 2002, Permit Determinations Document”). The responses to comments below address the comments EPA received on the issue of thermal discharges.

The Massachusetts DEP has certified the permit’s CWA § 316(a) variance-based thermal discharge limits under CWA § 401(a)(1). The RI DEM has indicated that it does not object to the variance-based limits under CWA § 401(a)(2). Finally, these thermal discharge limits have also been found to be consistent with the requirements of the Coastal Zone Management Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the Endangered Species Act.

While the thermal discharge limits in the permit are based on a CWA § 316(a) variance, EPA also determined what limits would have applied based on applicable technology standards (Best Available Technology [BAT]) and Massachusetts’ and Rhode Island’s water quality standards. The water quality-based limits were based largely on a mixing zone analysis by the MA DEP. The technology standards and water quality standards analyses were presented in Chapters 4 and 5, respectively, of EPA’s July 22, 2002, Permit Determinations Document. EPA received many comments related to the analyses of technology-based and water quality-based limits, and it has provided responses to these comments. Because the permit’s thermal discharge limits are based on a CWA § 316(a) variance, however, these issues are, in a sense, moot.

Cooling Water Intake Capacity Limits. CWA § 316(b) requires that the “location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” EPA explained the bases of its CWA § 316(b) determination for the Draft Permit in Chapter 7 of EPA’s July 22, 2002, Permit Determinations Document. After careful consideration of public comments and updated analyses conducted in response to those comments, EPA has concluded that the limits on cooling water intake capacity included in the Draft Permit are necessary and sufficient to satisfy the requirements of CWA § 316(b) and should remain substantially unchanged in the Final Permit. As a result, the Final Permit establishes a performance standard providing for an intake capacity limitation of 56 MGD, with an additional 6.847 billion gallons **per year** allowable for temporary open-cycle cooling operations. In response to comments from the State of Rhode Island and others, however, EPA has added the restriction that cooling water intake capacity reflecting once-through cooling operations is prohibited during the winter flounder spawning season (February through May) to avoid

serious adverse environmental impacts from entrainment and impingement during that time. EPA's responses to comments related to the CWA § 316(b)-based permit limits are presented below.

The intake capacity limits in the Final Permit reflect the performance achievable if BPS's cooling system is retrofitted from an open-cycle system to a closed-cycle system using some type of wet mechanical draft cooling towers for all four electrical generating units at the power plant. EPA has determined that such a cooling system upgrade constitutes the Best Technology Available (BTA) for minimizing adverse environmental effects in accordance with CWA § 316(b). As noted above, the plant will still require 56 MGD for cooling tower make-up water. Although this is still a substantial intake flow, it represents a 94 percent reduction from current operations and will achieve a like reduction in entrainment and impingement. The permit will also allow the additional 6.847 billion gallons **per year** of intake flow from once-through cooling operations noted above, but such once-through cooling is prohibited during the winter flounder spawning season (February through May). This additional flow is based on the additional amount of intake flow that would make the total flow limit correspond to flow levels associated with the thermal discharge allowed under CWA § 316(a). EPA has determined that this additional modicum of intake flow, in light of the restrictions on its use and the major reduction being required, will not prevent the intake limits from satisfying the BTA standard of CWA § 316(b).

As stated above, the permit's intake limits represent performance standards that the permittee can meet in any manner it chooses, but these limits reflect EPA's determination that the above-discussed cooling system retrofit with wet mechanical draft cooling towers constitutes the BTA for BPS. EPA has investigated a number of different ways that such a cooling tower retrofit could be accomplished at BPS and has determined that such a retrofit is technologically and economically feasible at BPS. Moreover, EPA has determined that the cost of such a retrofit, even assuming the higher cost estimates submitted by the permittee, would not be wholly disproportionate to the substantial public benefits estimated to result from making these improvements. In addition, EPA has determined that the use of cooling towers at BPS presents no significant adverse environmental effects (such as noise, water vapor plumes, traffic safety, aesthetics) that cannot be adequately managed with established, affordable technology. That being said, whether, and to what extent, any such effects might require mitigation and the optimal approach for achieving any such mitigation will not be finally determined until the State regulatory process is carried out to address noise, air emissions, and the like.

Finally, EPA has considered the regional energy implications of retrofitting the BPS cooling system with cooling towers and concluded that no significant adverse effects will result. The use of cooling towers will only slightly reduce the amount of electricity generated for sale by BPS over the long term. The region's energy supply is more than adequate and can easily accommodate this change at BPS. The new NPDES permit limits will also have no effect on the plant's ability to use coal as its major fuel. In addition, the changes at BPS were conservatively estimated (i.e., estimates were geared to overstate rather than understate the effects) to have at most only a small, insignificant effect on consumer electric rates over the long term. The long-term rate effect on the typical 500-kWh-per-month consumer household from increased production costs and slightly reduced generation as a result of the cooling system improvements is conservatively estimated to range from approximately \$0.06 per month to \$0.18 per month. EPA also found that using cooling towers will actually allow BPS to generate **more** electricity at times during the peak-demand, hot-weather periods when the plant currently has to curtail generation to stay within the permit's maximum temperature limit. This benefit could prove helpful to the region's electric supply during these hot weather periods, when the region's electric supply is most severely tested. Turning to short-term effects, EPA notes that the cooling system conversion will result in short-term, temporary generating unit outages at BPS. These outages can, however, be sequenced and managed to avoid any significant effects on the region's power supply just as the occasional outages that currently occur within the system are managed. EPA also predicts that there will be a somewhat larger short-term

consumer rate effect as a result of these unit outages, but that these effects will occur only during a small number of months and will also be insignificant. Specifically, EPA conservatively estimates that generating unit construction outages could result in a short-term rate effect of \$6.27 spread over 36 weeks (i.e., approximately \$0.70 per month for only 9 months) for the typical 500-kWh-per-month consumer household.

Although the intake capacity limits in the Final Permit are based on the BTA technology standard from CWA § 316(b), EPA also has to include any more stringent limits needed to ensure compliance with State water quality standards. EPA has reviewed the application of both Massachusetts and Rhode Island water quality standards, consistent with CWA §§ 301(b)(1)(C) and 401(a)(1) and (2), and concluded that although the permit limits are adequate to satisfy the States' standards, these limits could not be made significantly less stringent without violating those standards. Thus, although the permit limits are based on CWA § 316(b), they are bolstered by the requirements of State water quality standards. Again, the MA DEP has issued a certification pursuant to CWA § 401(a)(1) indicating that the Final Permit's intake requirements will allow attainment of the designated uses of Mount Hope Bay set forth in Massachusetts' water quality standards. The RI DEM (representing "the downstream affected State") has confirmed that limits at least as stringent as those in the Final Permit are needed to satisfy the State's water quality standards and that it does not object to the limits in the permit. Finally, these intake capacity limits have also been found to be consistent with the requirements of the Coastal Zone Management Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the Endangered Species Act.

Other Permit Limits. The permit also includes limits on the discharge of pollutants other than heat. Such limits include restrictions on the amount of chlorine and various chemicals and metals (e.g., copper, zinc) that can be discharged by the power plant. The basis of these permit limits is presented in the "Fact Sheet" issued with the Draft Permit. Comments on these permit limits are responded to below.

Monitoring Requirements. The permit contains a variety of types of monitoring requirements to enable the regulatory agencies to track compliance with various limits in the permit. Comments on the permit's monitoring requirements are responded to below.

Compliance Schedule. It is obvious that BPS will need a certain amount of time to install the cooling system upgrades to enable it to comply with the new permit limits. The CWA, however, prohibits a compliance schedule from being included in the permit under the present circumstances. Therefore, the permit is written to require immediate compliance, but EPA expects to impose a reasonable compliance schedule in an Administrative Compliance Order issued pursuant to CWA § 309(a). It is important that compliance be attained expeditiously because of the environmental damage the plant's cooling system is causing and will continue to cause until the permit's limits are complied with. EPA and the MA DEP expect to discuss this compliance schedule further with the permittee. The Agency notes that the permittee has estimated a 47-month schedule to install the needed equipment, whereas EPA has estimated a 39-month schedule.

C. Changes Made in Final Permit

The Final Permit is substantially identical to the Draft Permit that was available for public comment. Although EPA's decision-making process has benefited from the various comments and additional information submitted by commenters, the information and arguments presented did not raise any substantial new questions concerning the permit. Many of the concerns raised by commenters had already been addressed in EPA's original Fact Sheet and Permit Determinations Document. EPA did, however, improve certain analyses in response to comments. These improvements are detailed in this document and continue to support EPA's determinations.

The changes made in the Final Permit are listed below. The analyses underlying these changes are explained in the responses to individual comments that follow.

1. EPA has eliminated the permit requirement that BPS inspect the discharge canal every other day from April to November for dead or dying fish. EPA removed this requirement because it believes the substantial reduction in thermal discharge allowed by the permit should significantly decrease the potential for fish kills in the discharge canal. In addition, the fact that divers are inspecting the nets in the discharge canal three or four times a week and can observe fish kills at that time satisfies the need to monitor fish mortality in the canal.
2. The inconsistency in the Draft Permit (pp. 19–20) regarding whether the discharge temperature needs to be reduced to 90 °F or 95 °F in response to a fish kill was corrected. In the Final Permit, the permittee is required to reduce the discharge temperature to 90 °F in this situation.
3. EPA has removed the permit’s damages provision for discharge-related fish kills. This permit condition is not federally enforceable and simply repeats certain provisions found in the Massachusetts General Laws, which apply regardless of whether they are included in the permit.
4. EPA has changed the value for the heat capacity of water used in the calculation of the heat load from 0.94 Btu/(lb × °F) to a fixed value of 1.0 Btu/(lb × °F). EPA has also changed the value of the specific gravity of water used in the calculation of heat load from 8.55 lb/gallon (seawater) to 8.344 lb/gallon (pure water).
5. EPA has changed the method of calculating the heat load from the plant. In response to comments on the values for heat capacity and specific gravity used in the calculation of heat load, and also in response to the comment regarding separate blowdown streams, EPA reviewed the calculation method for heat load in the Draft Permit. EPA identified that the Draft Permit used the blowdown stream flow rate (outfall 003), but required that the delta-T be calculated using the discharge temperature from outfall 001 (delta-T = discharge temperature – intake temperature). EPA has realized, however, that this approach was problematic because the temperature at outfall 001 could be influenced by other waste streams, such as internal outfall 004. This could lead to slight underreporting of the heat load to the bay. EPA has corrected this and now requires that the temperature of the blowdown streams (outfalls 003A, 003B, and 003C) be monitored and used to calculate the heat load. The individual heat loads from the three cooling tower blowdown streams will be summed to determine the total heat load from the facility. When the facility switches to once-through cooling, the heat load for once-through cooling will be calculated using the discharge temperature and flow at outfall 001. Once-through cooling heat load will be summed with the heat loads from the blowdown streams to derive the total heat load.
6. EPA has changed permitted outfall 003 (cooling tower blowdown for all units) to break it down into three permitted internal outfalls (003A–units 1 and 2; 003B–unit 3; and 003C–unit 4). Limits have been applied at these internal outfalls, including added temperature monitoring and reporting requirements.
7. EPA has added a requirement for four ambient water temperature monitoring stations in Mount Hope Bay using continuous temperature monitoring equipment.
8. EPA has added requirements for monitoring and reporting intake flow.
9. To mitigate environmental impacts, EPA has limited the period during which the 122 hours of once-through cooling may be used. The Final Permit does not allow the use of once-through cooling during the winter flounder spawning season (February through May). EPA has included a

- requirement that the permittee include the reason for any bypass with its notification of such bypass.
10. EPA has allowed the screen-wash frequency for the unit 4 intake to be reduced from continuous to three times daily after installation of the closed-cycle cooling system for the entire station.
 11. EPA has allowed the use of outfall 005 for “nonthermal” backwash but has required that any such use be counted as part of the facility’s annual 122 hours of once-through cooling allotment.
 12. EPA has required the facility to report the number of hours (and flow rate) when the screen backwash system for units 1, 2, and 3 is tested.
 13. EPA has modified the pH limit to account for possible variations in the pH of the inlet water source. The permit specifies that the pH must be neither less than 6.5 standard units nor greater than 8.5 standard units, or if outside that range the pH must be no more than 0.2 standard unit from the naturally occurring range. This is consistent with Massachusetts’ water quality standards.
 14. EPA has removed the pH monitoring requirement from internal outfalls. Compliance with pH will be determined at outfall 001.
 15. EPA has clarified the reporting of average monthly values for total suspended solids (TSS) and oil and grease to be consistent with Discharge Monitoring Report (DMR) requirements.
 16. EPA has clarified that the method of total residual oxidant (TRO) and free available chlorine analysis should be the amperometric method as found in 40 CFR Part 136, Table 1B. EPA has changed the type of sampling for compliance purposes from “continuous” to “grab.” As a “report-only” requirement, however, EPA is also requiring that the facility report the results of continuous monitoring of TROs and free available chlorine.
 17. EPA has changed the ML for TRO from 0.05 mg/l to 0.02 mg/l.
 18. EPA has clarified that the permittee shall use a value of “zero” for daily samples that are below the ML in averaging the monthly TRO value.
 19. EPA has modified the permit’s iron and copper limits. For iron, the daily maximum limit is 1.0 mg/l and the average monthly limit is 1.0 mg/l. The iron limits, which are technology-based, apply after treatment at outfall 004. For copper, the daily maximum limit is 0.0289 mg/l and the monthly average limit is 0.0185 mg/l. The copper limits, which are water quality-based, apply at the end of the pipe. The limits for both iron and copper were set on a concentration (or effluent) basis rather than a mass basis after EPA determined that concentration-based limits for these two metals were more appropriate.
 20. EPA has changed footnote 1 in parts A.6 and A.7 of the permit to footnote 3. In addition, the language has been changed to specify only the minimum detection level (ML) for iron.
 21. EPA has corrected a typographical error in the Draft Permit to make clear that the permit contains **monthly** average limits (rather than **daily** average limits) for priority pollutants, chromium, and zinc for outfalls 003A, 003B, and 003C (cooling tower blowdown streams).
 22. EPA has changed the sampling schedule of the wastewater treatment system to require collection of daily samples when metal cleaning wastes are being discharged and weekly samples during “normal” operations when no metal cleaning wastes are being discharged.

23. EPA has eliminated the reporting of the influent metal cleaning waste stream volume. This requirement originally appeared in footnote 2 in Sections A.6 and A.7 of the permit.
24. EPA has changed the permitted maximum daily and average monthly flow limits for internal outfall 004 (wastewater treatment system) to 4.0 MGD and 2.0 MGD, respectively.
25. For clarification, EPA has separated outfall 004 into two separate designations, outfall 004A and outfall 004B. Outfall 004A will be used until the anticipated new air pollution control equipment begins producing wastewater discharges. It will then be replaced by outfall 004B after air pollution control waste streams begin discharging to the wastewater treatment facility. EPA will require that the permittee inform EPA by letter of the expected date of discharge from air pollution control equipment.
26. EPA has added a monitoring and reporting requirement for vanadium at outfall 004A (prior to the initiation of wastewater discharge from air pollution control equipment).
27. EPA has included GE Benz's AP412 Methyl Orange Method as the analytical method for determining compliance with the Spectrus CT1300 permit limit of 0.2 ppm. has added requirements for monitoring and reporting intake flow.
28. EPA has included a provision to allow BPS to seek an alternative sampling scheme for whole effluent toxicity (WET) testing in certain situations. A written request and EPA approval, with concurrence from MA DEP, are required.
29. EPA has corrected a number of typographical errors in the Draft Permit and slightly modified some permit language to make it clearer. These revisions do not change any substantive requirements from the Draft Permit.

D. Organization of Responses and Availability of Administrative Record

Organizing these responses to comments in a "user-friendly" manner has been a difficult challenge for a number of reasons. First, the Agency received a very large number of comments, some of which were voluminous. Second, these comments addressed a wide variety of complex issues related to the permit. Third, while some comments clearly addressed specific permit conditions, others addressed issues related to the permit without specifying which specific permit conditions they pertained to. In still other cases comments addressed general issues that may have relevance to more than one specific permit condition. An example of the latter type of comment would be one concerning the general health (or lack thereof) of the Mount Hope Bay fishery, which could potentially be relevant to permit conditions under both CWA § 316(a) and § 316(b).

In light of the above issues, EPA has taken the following approach to organizing the responses to comments: (a) responses are generally categorized according to the provision of the CWA or permit limit that the comment relates to (e.g., § 316(a) or § 316(b)); (b) comments regarding permit limits or issues other than thermal discharges or cooling water withdrawals have been combined and categorized as "Other Permit Limits"; and (c) comments that are general in nature and do not clearly relate to a particular permit limit have been grouped together under the topics "Ecological Setting" or "Miscellaneous Comments," as appropriate. Specifically, this responses to comments document is organized in the following order: (1) "Summary"; (2) "Ecological Setting"; (3) "CWA § 316(a) Variance-Based Thermal Discharge Limits"; (4) "CWA § 316(b)-Based Cooling Water Intake Limits"; (5) "State Water Quality Standards-Related Issues"; (6) "Other Permit Limits"; (7) "Miscellaneous Comments;" and (8) "Best

Available Technology Standard-Based Thermal Discharge Limits” (supplanted by CWA § 316(a) variance-based limits). Finally, it should also be noted that, consistent with legal requirements, EPA has combined and consolidated many similar individual comments to try to help reasonably streamline the responses to comments. EPA worked with several expert consultants on the development of this response to comments. These consultants produced a number of technical reports for this project. EPA has independently considered each of these reports and has adopted and incorporated them by reference into this document as Appendices A-X.

All documents cited in these responses to comments are included in the Administrative Record for the Final Permit decision. All public comments on the Draft Permit, including transcripts from the public hearings, are also included in the Administrative Record. Furthermore, certain new materials submitted to EPA regarding the permit after close of the public comment period, or gathered or developed by EPA in responding to comments, are also included in the Administrative Record. The Administrative Record is available for review at the offices of EPA-New England at One Congress Street in Boston, Massachusetts. EPA has also posted copies of the Final Permit and the response to comment document on the EPA Region 1 Web site (www.epa.gov/region1/).