

3.0 Permitting History

When considering development of a new NPDES permit for BPS, it is worthwhile to understand something of the facility's permitting history. Units 1, 2 and 3 at BPS commenced commercial operation in 1963, 1964 and 1969, respectively. See "Variance Request Application and Partial Demonstration Under the Clean Water Act, Section 316(a) and (b)" dated May 24, 2001 (hereinafter, the "May 24, 2001, USGenNE Partial 316(a) and (b) Demonstration"); October 30, 1996 Fax from New England Power Company (stating operations commenced in 1962, 1963 and 1969, respectively). These units, therefore, pre-dated enactment of the CWA of 1972 and its thermal discharge and cooling water intake structure requirements. Units 1, 2 and 3 were constructed with once-through, open-cycle cooling systems and a single cooling water intake structure on the Taunton River.

After enactment of the CWA of 1972, an NPDES permit was required to authorize BPS's continued discharge of pollutants and operation of a cooling water intake structure. The first NPDES permit was issued to the facility on October 9, 1973. Id.; NPDES Permit No. 0003654 (Oct. 9, 1973) (the "1973 Permit"). Due to concerns over potential impacts to the Mount Hope Bay ecosystem, Unit 4, which was under construction, was required to be operated as a closed-cycle unit. See Fact Sheet, Draft NPDES Permit No. 0003654, p. 12 (June 11, 1993). The 1973 Permit read as follows:

The circulating water system for the Brayton Point power generating station shall be designed so that unit four shall be operated with a closed cooling cycle, except for bleed-off discharge not to exceed 6,000 gallons per minute, which shall be routed through the discharge canal for the first three units.

This permit also restricted thermal discharges to a maximum temperature of 90° F and a change in temperature from intake to discharge (Δ -T) of 20° F. Further, the permit also imposed other conditions regarding the thermal plume, such as that "the thermal plume shall not block zones of passage ..., interfere with the spawning of fishes . . . , [or] change the balanced indigenous population of Mount Hope Bay or its tributary waters." NPDES Permit No. 0003654, Conditions I.B.3, 4, 5 and 7 (Oct. 9, 1973). The maximum temperature limit of 90° F and other temperature-related limitations were based on the Massachusetts Water Quality Standards and application of the maximum critical temperature for Atlantic menhaden. See 1973 Permit; February 25, 1976, Letter from Edward J. Conley, EPA, to John F. Kaslow, NEPCO; July 21, 1976, EPA/MA Division of Water Pollution Control "Notice of Determination to Modify a Joint Federal-State Permit" (Federal No. MA0003654, MA No. 41); Fact Sheet, Draft NPDES Permit No. 0003654, p. 11 (June 11, 1993). In addition to the requirement that Unit 4 operate with closed-cycle cooling, the permit provided as follows with respect to the already existing intake structure: "the circulating water intake structure shall employ the best technology available for minimizing the

entrainment and entrapment of estuarine organisms into the cooling water system.” 1973 Permit, Condition I.A.4.

Since the original 1973 NPDES permit was issued for BPS, the permittee has pushed for a number of modifications to relax various permit requirements related to thermal discharges and cooling water intake structures. These requests have been the subject of substantial public controversy. See, e.g., July 27, 1976, Letter from Eric D. Schneider, EPA Narragansett Laboratory, to John A.S. McGlennon, EPA Region 1; July 26, 1977, Letter from Charles Corkin II, Massachusetts Office of the Attorney General, to John Scanlon, Save the Bay (attaching “Agreement for Judgment” to be entered in Suffolk County Superior Court between NEPCO, the Commonwealth, EPA, Save the Bay, and Ecology Action for Rhode Island); July 2, 1976, Memorandum from Russell A. Isaac, MA DEP, to John R. Elwood, “Subject: Brayton Point - Permit Modification Hearing at Somerset High School on June 30, 1976.” While not all of the modifications requested by the permittee have been granted, among the most significant ones that were eventually granted and that are now reflected in the current NPDES permit are the following:

- (1) in 1979, the maximum temperature limit was raised to 95° F and the Δ -T limit was raised to 22° F;¹

¹ The record shows that the permit’s maximum temperature and Δ -T limits were alternately raised and then returned to the original limits in a series of permit modifications and agreements over the years from 1976 to 1979. See, e.g., October 30, 1996, Fax from NEPCO to EPA (“Chronology of Brayton Point Station Operations” and “Circulating Water (S/N 001) - Permit Limitations”); NPDES Permit No. MA0003654, Modification No. 3, Issued to NEPCO for BPS (July 21, 1976); July 26, 1977, Letter from Charles Corkin II, Massachusetts Office of the Attorney General, to John Scanlon, Save the Bay (attaching “Agreement for Judgment” to be entered in Suffolk County Superior Court between NEPCO, the Commonwealth, EPA, Save the Bay, and Ecology Action for Rhode Island). The company argued that Atlantic menhaden and other fish would not be harmed by discharges up to *and beyond* 95° F. The permitting agencies eventually, in 1979, increased the maximum temperature limit to 95° F and the Δ -T limit to 22° F, where they remain. See, e.g., October 30, 1996, Fax from NEPCO to EPA. The permitting agencies approved the higher temperature limits under a CWA § 316(a) variance, concluding that the limitations would not interfere with the protection and propagation of a balanced indigenous population of fish, shellfish and wildlife in and on the receiving water. Fact Sheet, Draft NPDES Permit No. 0003654, p. 11 (June 11, 1993). As discussed elsewhere in this document, the predicted extent of the thermal plume that would result from the variance-based permit conditions was significantly underestimated. In the Fact Sheet issued in 1993 with the current effective NPDES permit, EPA states that the company argued that in the summer, due to high ambient water temperatures, a requirement to meet the lower 90° F temperature limit would result

(2) in 1982, Unit 4 was allowed to convert to open cycle operations with a new cooling water intake structure located on the Lee River and fitted with angled traveling screens intended to minimize fish impingement;²

(3) in 1982, the maximum flow limitation in the permit was increased from 915.8 million gallons per day (MGD) in the 1973 permit to 1009 MGD; and

(4) in 1984, the maximum flow limitation was increased again to the current limit of 1452.5 MGD.³

It should be noted that when the flow limit was increased to accommodate the conversion of Unit 4 from closed-cycle to open-cycle cooling, this also allowed BPS to discharge more heat (in BTUs) to Mount Hope Bay despite the maximum temperature and Δ -T limitations remaining constant. In addition, the current permit condition related to the requirements of CWA § 316(b) states, in pertinent part, that “[i]t has been determined, based on engineering judgment that the circulating water intake structures presently employ the best technology available for minimizing adverse environmental impact.” NPDES Permit No. MA0003654, Condition I.A.1.e (June 16, 1993) (emphasis added).

In late 1996, controversy erupted again over thermal discharges and cooling water intake operations at BPS. This controversy arose out of scientific analyses by Mark Gibson, a fisheries

in “costly reduction in power generation and jeopardize those persons on life support equipment in the power distribution area.” *Id.* at p. 11. While the former point was likely true, the basis for the latter point is not fully explained and, in any event, it is highly unlikely that the latter point would remain true today given current energy supplies and markets.

² The permittee pressed for permission to switch Unit 4 to open-cycle cooling because, among other reasons, it was having substantial operational problems with the “spray pod” system it had installed at BPS. *See* EPA “Determination Regarding Modification of NPDES Permit No. MA0003654 for Brayton Point Station, Somerset, Massachusetts” (October 1982) (the “October 1982 Modification Determination”), pp. 19-20. The company also argued that operation of its proposed alternative cooling water intake system would satisfy the requirements of CWA § 316(b). The regulatory agencies approved this request in the December 1982 permit reissuance, *id.*, and Unit 4 began operating on a once-through cooling basis in July 1984. *See, e.g.*, October 30, 1996 Fax from New England Power Company.

³ The maximum flow limit of 1452 MGD in the current permit represents the maximum flow that can be put through the plant. BPS has never reported actually using the full 1452 MGD of cooling water on an average basis, though it may do so intermittently on an instantaneous basis.

biologist working for the State of Rhode Island, that indicated a dramatic decline in the health of Mount Hope Bay fish populations coinciding with the conversion of BPS Unit 4 to open-cycle cooling, with the associated increase in thermal discharges and cooling water use by the plant. This paper is discussed above in Section II (“Ecological Setting”). In a letter dated October 22, 1996, the Rhode Island Department of Environmental Management (RI DEM) wrote to EPA and asked that the Agency “expedite such permitting actions as are necessary in order to ensure that operational changes necessary to reverse unprecedented declines in Mount Hope Bay fisheries stocks are underway before the spawning season next spring.” October 22, 1996, Letter from Timothy Keeney, RI DEM, to John DeVillars, U.S. EPA. RI DEM argued that sufficient grounds existed to support either modification or revocation and reissuance of the permit. Id.

This controversy led to intensive negotiations between the regulatory agencies, the permittee, and a number of interested environmental organizations. While the parties ended up agreeing that there appeared to have been a decline in the health of the Mount Hope Bay fishery, the parties could not agree on the role, if any, that BPS operations played in that decline. In an effort to avoid litigation over possible permit modifications or enforcement actions, on February 6, 1997, EPA, the Massachusetts Department of Environmental Protection (MA DEP), the Massachusetts Executive Office of Environmental Affairs (MA EOEA), RI DEM, and the permittee, which at the time was the New England Power Company (NEPCO), entered a voluntary short-term Memorandum of Agreement (MOA I), which was later replaced by a long-term Memorandum of Agreement in early April 1997 (MOA II).

MOA II provides that BPS will abide by a new set of thermal discharge and cooling water volume restrictions. These limitations provide for various monthly and seasonal flow and thermal discharge restrictions that are more stringent than the limitations in the 1993 NPDES permit, which remains in effect. These limits are set forth in the text of MOA II, a copy of which is attached hereto as Appendix C. The limitations in MOA II represent a compromise among the parties intended to avoid litigation and represent an interim step for reducing or limiting the adverse environmental effects of BPS on the Mount Hope Bay ecosystem while careful evaluation proceeded for development of the next reissued permit. MOA II also proposed a plan of research to support development of the new NPDES permit following the scheduled July 1998 expiration of the 1993 Permit. Although the 1993 Permit technically expired in July 1998, it remains in effect until a new permit is issued due to the timely application for permit reissuance filed by the permittee. See 40 C.F.R. § 122.6. Finally, MOA II provided that it would also remain in effect until a new NPDES permit is issued and that any successor in interest to NEPCO at BPS would be required to abide by MOA II. Discharge monitoring reports filed by the permittee indicate that USGenNE has been complying with MOA II since it took over ownership and operations at the plant.

Thus, although Units 1, 2 and 3 have been in operation for nearly 40 years, and Unit 4 has been in operation for more than 25 years, there have been no substantial reductions in thermal discharge

or cooling water intake system impacts over that time. Indeed, the company has petitioned for, and been granted, permit changes that have allowed major increases in thermal discharge and cooling water withdrawals during that time. (Of course, MOA II has provided some reductions in the peak levels of thermal discharge and cooling water use allowed by the 1993 Permit.) The permitting agencies now must review this permit in the context of the most recent information to determine the conditions that should be included in the new permit.