

# SUPER LAW GROUP, LLC

May 22, 2020

*Via email*

Sharon DeMeo  
U.S. Environmental Protection Agency – Region 1  
5 Post Office Square, Suite 100 (OEP06-1)  
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Demeo.Sharon@epa.gov

Re: **Merrimack Station, Bow, NH; NPDES Permit No. NH0001465**  
**Thermal Discharges**

Dear Ms. DeMeo:

We are writing on behalf of Sierra Club and Conservation Law Foundation regarding the NPDES permit for the Merrimack Station in Bow, New Hampshire. On January 7, 2020, we wrote you regarding a number of thermal discharge issues in the permit renewal process. Since then, we have obtained additional information regarding the Station's thermal discharges into the Merrimack River – *including temperature and dissolved oxygen monitoring data that the Station's owners have never submitted to EPA* – which we believe EPA should consider to assess the Station's impact on the Hooksett Pool and the need for more protective limits in the permit.

The Station's existing permit requires PSNH and GSP to continuously monitor river surface temperature at monitoring stations N-10, S-0, and S-4 and dissolved oxygen content at monitoring stations N-5 and S-0.<sup>1</sup> The permit also requires the Station's owners to submit “[a]ll biological and hydrological monitoring program data” to EPA by December 31 of the following year.

Since 1992, PSNH and GSP have collected temperature and dissolved oxygen readings from those monitoring stations every 15 minutes (96 times per day) on every day, with limited exceptions due to equipment malfunction or when the permit allows certain probes to be removed from the River. But their annual reports include only statistical summaries (daily minimums, maximums, and averages). Thus, EPA has not reviewed all of the hydrological monitoring data the companies collected.

Enclosed please find the Declaration of Matthew Hodge, dated May 14, 2020, filed in *Sierra Club, et ano. v. Granite Shore Power, LLC, et al.*, No. 1:19-cv-216-JL (D.NH). Mr. Hodge is a professional water resources engineer who provides technical expertise for NPDES permitting and other hydrodynamic and water

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<sup>1</sup> N-10 and N-5 are upriver from the discharge, S-0 is at the discharge, and S-4 is downriver from the discharge.

quality studies. In his declaration, Mr. Hodge explains that review of the daily statistical summaries alone make it difficult for a regulator or other interested party to understand the effect of Merrimack Station’s thermal discharge on water quality conditions in the Merrimack River. Specifically, Mr. Hodge identified four ways in which the daily statistical summaries obscure important information that is apparent from the 15-minute data: “The daily statistical summaries do not provide the information necessary to assess [i] the duration of adverse water quality conditions, [ii] the rate of change of water quality conditions, [iii] the relative difference between upstream and downstream water quality conditions, and [iv] the causal relationship between downstream water quality and the effluent from the discharge.”

Recognizing that the Station’s statistical summaries were inadequate and often confusing, EPA has requested from PSNH and GSP a limited amount of 15-minute temperature data. But, to our knowledge, EPA has requested and received only temperature data from certain months in certain years. EPA did not request or receive the temperature data from all years, or from all months in the years requested, and did not request any dissolved oxygen data.

Provided with this letter is what we understand to be PSNH and GSP’s complete 15-minute data for temperature at N-10, S-0, and S-4 and for dissolved oxygen at N-5 and S-0 for the years 1998 through 2019. This was produced to us by PSNH/GSP during discovery in Case No. 1:19-cv-216-JL (D.NH). PSNH/GSP did not designate it confidential, nor could it have been so designated. We are therefore entitled to provide it to EPA, and EPA may make it available to other stakeholders and the general public in its administrative record.

To our knowledge, EPA has not previously seen the majority of the data we obtained from PSNH/GSP and are now providing to the Agency. EPA has stated that one of the reasons that the hydrological monitoring requirements were included in the permit was to “determine whether different, more protective thermal discharge limits are needed.” 2011 Determinations Document at viii.<sup>2</sup> EPA has also stated that it “misunderstood” statistical summaries entitled “Average Daily Maximum, Minimum, and Mean Water Temperature Measured at Monitoring Stations N-10, S-0, and S-4 . . .” submitted by PSNH, “because of confusing aspects of how it was presented,” and that “EPA decided to reassess its interpretation of the

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<sup>2</sup> Clean Water Act NPDES Permitting Determinations for the Thermal Discharge and Cooling Water Intake Structures at Merrimack Station in Bow, New Hampshire, NPDES Permit No. NH 0001465, EPA REGION 1 – NEW ENGLAND (2011) [hereinafter, 2011 Determinations Document].

data but found that it did not have sufficient data to do so.” 2017 SNQPC at 38–39.<sup>3</sup> However, EPA has not yet obtained and reviewed all of the PSNH/GSP’s monitoring data, only a limited subset of it.

This is troubling given EPA’s acknowledgement that “thermal discharges can have a profound effect on a receiving water’s quality,” that “aquatic habitat in Hooksett Pool [is] particularly vulnerable to the effects of Merrimack Station’s thermal discharge,” and that “the capacity of the plant’s thermal discharge to adversely impact the balanced, indigenous fish community of Hooksett Pool is significant.” 2011 Determinations Document at 30, 37, 118.

Among other things, EPA has recognized that, during colder seasons, thermal discharges may deprive certain species of the cold-water habitat needed to ensure proper gonadal development, and that, in winter, there is a risk of “cold shock” in which Station shutdowns cause rapid reductions in temperature, leading to physiological impairment or death of fish. *Id.* at 348-349. Yet, EPA has not reviewed the Station’s 15-minute temperature data from the winter months in *any year*.

As Matthew Hodge explains in the attached declaration, evaluating the rate of change in water quality conditions is necessary to identify harm to fish in the form of cold shock. For example, on December 14, 2018, the maximum temperature recorded at S-0 was 22.0° C and the minimum temperature was 9.0° C. It is impossible to tell from GSP’s annual reports the rate of change, *i.e.*, whether the 13.0° C drop in river temperature was gradual or rapid. The 15-minute data shows that the rate of temperature change at S-0 on that day ranged from 1.1° C per hour to 2.8 C hour between 2:00 PM and 4:15 PM. In comparison, the maximum rate of temperature change on December 16, 2018, a day when Merrimack Station was not generating electricity, was 0.7° C per hour. Thus, the rate of temperature change at S-0 was approximately four times greater on December 14, 2018 when the Station was operating and then shut down, as compared to December 16, 2018, when it was not operating at all.

This shows that when Merrimack Station stops generating electricity the temperature drops rapidly – on the order of hours. Given that Merrimack Station has been operating as a peaker in recent years, cold shock is a significant concern as the Station starts and then stops operating in winter. Closed-cycle cooling, the technology EPA determined in 2011 was the Best Available Technology (BAT) for

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<sup>3</sup> Statement of Substantial New Questions for Public Comment: Merrimack Station (NPDES Permit No. NH0001465), EPA (Aug. 2, 2017) [hereinafter, 2017 SNQPC].

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the Station's thermal discharges, would eliminate cold shock by drastically reducing the temperature of the water being discharged and thereby minimizing both increases and decreases in River temperature when the Station starts and stops operating.

Similarly, other important information in 15-minute data is critically important to EPA's permitting decisions. Because EPA cannot determine the duration of adverse water quality conditions, the relative difference between upstream and downstream water quality conditions, or the causal relationship between downstream water quality and the effluent from the discharge from the annual reports, the absence of PSNH/GSP's hydrological monitoring data leaves EPA in the dark as to the full extent of the Station's effect on water quality, habitat, and fish. We hope that the attached information will fill that data gap.

Please add this letter and its attachments to the administrative record. And please consider the enclosed data in any decisions EPA makes regarding the renewal of Merrimack Station's NPDES permit.

Sincerely,

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cc: Mark A. Stein, Esq., Office of Regional Counsel