Date: November 30, 2018

From: Mark Stein and Sharon DeMeo

To: Merrimack Station NPDES Permit File

Re: Memorandum Documenting November 13, 2018 Meeting Between EPA and Granite Shore Power Concerning the Merrimack Station NPDES Permit

On November 13, 2018, representatives of EPA Region 1 and Granite Shore Power LLC (GSP) met at EPA's offices in Boston to discuss the Merrimack Station permit. Mark Stein and Sharon DeMeo prepared this memorandum to document the meeting for the Administrative Record for the permit.

I. Meeting Attended By:

See attendance sign-in sheet (attached).

EPA staff: from OEP: Damien Houlihan, Sharon DeMeo, Danielle Gaito, Eric Nelson and John Moskal; from ORC: Mark Stein, Cayleigh Eckhardt and Michael Curley.

Representatives of GSP: Elizabeth (Lynn) Tillottson, Environmental Manager, GSP (previously in the same post with Merrimack Station's prior owner, Public Service of New Hampshire); James Andrews, President of GSP; and Tom DeLawrence and P. Stephen Gidiere, III, of GSP's outside counsel, Balch & Bingham.

II. Agenda & Meeting Ground Rules:

The meeting began with introductions. EPA passed out a proposed agenda to help guide the discussion (attached) but indicated it was open to revising the agenda as the participants saw fit.

EPA explained that the ground rules were the same as for the previous September 20, 2018 meeting: 1) the meeting was not confidential, 2) EPA will document the meeting for the administrative record for the Merrimack Station (Merrimack) permit, and 3) the meeting is considered a "brainstorming" session – meaning that participants could offer ideas and comments and still be free to change their minds or positions later on. Again, the stated goal of taking this approach was to encourage a free exchange of ideas that might be more likely to reveal mutually acceptable ways of resolving the existing disputes over the permit that have been reflected in the comments on the permit. GSP expressed its understanding of these points. This meeting was held to follow up and discuss further the ideas and information presented during the September 20th meeting.

III. Effluent Limits Under the 2015 Steam-Electric Effluent Limitation Guidelines (ELGs):

EPA began the substantive discussion by addressing two key sets of effluent limits under the 2015 Steam-Electric ELGs: the limits for **flue gas desulfurization (FGD)** wastewater and the limits for **bottom ash transport water**. EPA stated that it was bound to base the permit's limits for these wastewaters on the currently effective ELGs, including their compliance dates. EPA acknowledged both that the ELGs and their compliance dates are the subject of ongoing litigation and that EPA is currently reconsidering the ELGs, but the Agency explained that the

permit's requirements must be based on the ELGs that are in effect at the time of permit issuance.

Flue Gas Desulfurization Wastewater

Regarding the FGD wastewater, EPA explained that Public Service of New Hampshire (PSNH), the previous owners of Merrimack Station, had opted into the "voluntary incentives program" (VIP) under the 2015 ELGs. EPA indicated that it regarded GSP to have "stepped into the shoes" of PSNH and that the Agency expected to base permit limits for FGD wastewater on the VIP requirements, unless GSP indicated that it had decided to change course. GSP indicated that this seemed reasonable and was potentially willing to write a letter to that effect. The VIP program initially calls for limits only on discharges of TSS and oil and grease, but then calls for more stringent limitations beginning December 31, 2023.

During the September 20th meeting, GSP expressed concern about getting a permit now that is subject to the current ELGs when EPA may later promulgate new regulations that make the ELGs less stringent. In response, EPA explained that EPA regulations at 40 CFR 122.62 would allow EPA to modify existing permit limits to make those limits less stringent if the original limits were based on existing ELGs, those ELGs are later made less stringent, and the permittee requests such a modification.

GSP expressed the concern that EPA might delay its response to a modification request and asked if EPA would consider language in the permit that specified that EPA would have to act on a request for modification within a certain time (e.g., within 90 days). EPA indicated that it did not think such permit language would be appropriate but noted that the reconsidered Rule is currently targeted to be finalized in 2020 and that compliance with the more stringent limits under the current VIP would not be required until *2023*. Therefore, EPA continued, there should be plenty of time for the permittee to seek a modification, and for EPA to act on the request before the stricter limits would kick in. Moreover, Merrimack Station already has the vapor compression evaporation equipment in place. GSP then asked whether EPA could find a way to directly address the idea that permit limits based on the 2015 ELGs could be modified under 40 CFR 122.62 if EPA later makes the controlling ELGs less stringent, and EPA indicated that including such a discussion in the responses to comments (or some record document) would probably be possible. GSP indicated that it regarded EPA's approach to be reasonable.

Bottom Ash Transport Water

Turning to bottom ash transport water, EPA explained that the existing ELGS call for "zero discharge" but provide several years for facilities to attain compliance. EPA noted that PSNH had written to EPA indicating that Merrimack Station would need until December 2022 to come into compliance. Once EPA announced its intention to reconsider the ELGs, PSNH wrote to EPA to state that it would not take additional steps to comply with the ELGs because of the reconsideration process. EPA indicated that it currently was contemplating including effluent limits in the permit for bottom ash transport water based on the ELGs' zero discharge requirements, but that it was considering using the outside compliance date of December 31, 2023, based on analysis of the requisite regulatory factors. This analysis takes account of the fact that PSNH earlier indicated that December 31, 2022, was a potentially viable compliance date, but approximately a year had passed since PSNH indicated that it was discontinuing compliance efforts due to EPA's reconsideration of the Rule.

EPA also noted that PSNH had designated its February 17, 2107, letter describing the steps needed to come into compliance with the bottom ash transport water ELGs to be Confidential Business Information (CBI). EPA indicated that the CBI designation made it difficult to discuss the compliance timeline issue in the Responses to Comments and asked that GSP reconsider whether the CBI designation could be fully or partially removed from the letter. If it could be only partially removed, EPA requested a redacted version of the letter. GSP indicated that it could not waive the CBI claim made by *PSNH*, but it did not have an issue with the CBI designation being withdrawn. GSP suggested that EPA reach out to Bob Bersak, counsel for PSNH, about the issue.

EPA mentioned that as with the FGD wastewater limits, the bottom ash transport water limits could be modified based on changes to the ELGs to make them less stringent. GSP again emphasized its interest in the potential inclusion discussion of this issue in the permit or response to comments.

EPA also suggested that it might be helpful for GSP to submit a letter confirming its need for more time to comply with the bottom ash transport water limits. GSP stated that it would consider writing a letter or folding this issue into the letter discussed above that would articulate GSP's assumption of PSNH's obligations and choices.

IV. Thermal Issues

EPA explained that it has been reviewing and considering public comments and new data, including biological data, submitted with the public comments. EPA indicated that its review of this data, to date, suggests some improvement in biological conditions in the Hooksett Pool over the past several years coincident with reduced operations by the facility. Therefore, EPA indicated that it was considering whether Final Permit limits reflecting, and effectively holding the facility to, these lower operational levels might be sufficiently protective to satisfy CWA requirements. Such permit limits might, EPA suggested, potentially take the form of a two-part set of limits combining (1) some type of operational restrictions (either based on BTU limits, capacity factor (CF) limitations, or flow limits) designed to be consistent with the facility's current operational profile, and (2) more traditional thermal discharge limits (such as maximum temperature limits). EPA also indicated that, in response to public comments, it was further considering whether the temperature compliance point for certain thermal limits should be moved from Station S0 to Station S4 to reflect the mixing of the thermal discharge with the river. Furthermore, EPA indicated that it was still waiting for GSP to share certain data, including the 2017 temperature data, that GSP had promised to provide after the September 20, 2018, meeting. The Agency needs this information to work on designing possible thermal limits.

EPA suggested that that Merrimack Station can generally meet weekly average thermal limits based on water quality standards during the winter and shoulder months (i.e., spring and fall). EPA again mentioned, however, that it was considering whether the thermal discharge might provide a refuge for invasive Asian clams during cold weather.

EPA suggested that during the spring months, when Merrimack Station rarely operates, weekly average and daily mean thermal discharge limits might be appropriate unless ambient water temperatures already exceed thermal levels set to avoid chronic impacts, in which case the ambient levels would need to be considered. GSP indicated that this could possibly be an approach that it could live with in the winter and shoulder seasons.

EPA suggested that if it can conclude that reduced operations seem compatible with biological improvement, then it might be able to conclude that permit limits that match those operational levels would be protective of the balanced indigenous population of fish in the river (BIP). EPA discussed how the permit could potentially be crafted with limits on facility operations (possibly utilizing CF limits, though there is more precedent for using BTU limits) and temperature limits at the downstream sampling location S4.

GSP asked why BTU's might be a preferable metric, as compared to CF. EPA explained that determining the CF might be more complicated and variable as it depends on the time window. For example, a 50% CF may be indicative of operating either at full power for 12 hours per day or at ½ power for 24 hours per day, which might have a different effect. Therefore, there may be additional complexity to such a limit. EPA understands that Merrimack Station now operates in the summer on an irregular, unpredictable, and intermittent basis. Therefore, EPA is considering permit limits that would allow the facility flexibility about when it operates while controlling the level of thermal discharge to parallel current levels.

EPA indicated that another component of the permit would be some type of acute temperature limit to ensure protection of organisms in the river when the power plant is operating. The current Draft Permit's sampling location at S0 (end of discharge canal) doesn't provide for any dilution. EPA explained that it was looking at the downstream S4 location as an option for the compliance point and was considering not just the actual temperature but also the time of exposure.

GSP expressed concern that complying with ambient temperature limits in "real time" could be problematic because it wants to comply with its permit limits and it might be difficult to anticipate and prevent problems in "real time." EPA indicated that technology exists where data can be downloaded in 15-minute intervals and that the limits could be based on an average of several data points. GSP still expressed concern stating that the lag between monitoring results at S4 and the power plant control room being able to take action to prevent problems was significant and, recognizing that lag, they feared that the limits might set them up for non-compliance (further, shutting off the Unit wouldn't help). GSP requested that EPA allow for a compliance schedule so that the operators at the plant would have some time to figure out how best to react to changing temperatures at S4. GSP suggested at least one season to develop operating procedures so that when future problems were identified, they would be able to prevent them by reducing output within a reasonable amount of time given the lag previously described. EPA indicated that it would consider this idea.

Since the ISO might call upon Merrimack Station during the summer and it's an older plant, it perhaps takes an hour and not minutes to "cycle-down" or "step-down" operations. EPA indicated that if the facility exceeded operating limits, then EPA could consider reverting to chronic limits to ensure protection of the BIP from chronic effects – meaning weekly average levels during summer months.

EPA indicated that it continues to want to further study how Asian clams are affected by the operations since they would theoretically benefit from the thermal discharge and the greatest concentration of clams have been seen around the discharge canal. EPA explained that the presence of an invasive species might be considered a negative impact to the BIP. EPA

expressed the desire to have more information for the next permit term about these issues and is considering requiring new monitoring and study requirements related to these issues.

GSP agreed that the next step for EPA would be to write down some monitoring requirements that would either go into the Final Permit or for the next permit application.

GSP asked if EPA considered including an emergency provision in the Final Permit as discussed during the September 20th meeting. EPA explained that it did consider the issue, including reviewing the language GSP provided from the New Jersey state permit for the Oyster Creek Nuclear facility. EPA indicated that it did not think this would be appropriate for the Merrimack Station permit because the CWA does not provide for an emergency exception to compliance and it would be hard or impossible to determine that an unknown emergency scenario would result in discharge conditions consistent with CWA § 316(a) and state water quality standards. In addition, EPA stated that it had not seen this in any EPA permit.

EPA listed items that it was still waiting for namely temperature and flow data for 2017, flow data for September through October 2016, as well as BTU's and condenser outlet temperatures. GSP stated that it preferred not to generate condenser temperature outlet data because there are a lot of challenges with this data, without it adding any value. GSP indicated that it was not quality data and that a proxy could possibly be used. EPA agreed that BTU data would be more helpful, and that condenser outlet temperature data are no longer needed.

EPA advised that justifying the variance from technology limits may also lead to a variance from State Water Quality Standards (if meets 316(a)). Another issue may be if there is lethality in the mixing zone - EPA will consult with New Hampshire.

V. Cooling Water Intake Structure Discussion:

EPA noted that it has been working to review and consider public comments submitted during the various comment periods held in connection with the Merrimack Station permit. Specifically, EPA also noted that PSNH's comments urged the Agency to reconsider whether wedgewire screens (WWS), with a revised design, would be an available technology to enable Merrimack Station to satisfy CWA § 316(b). EPA also indicated that PSNH included along with its comments a site-specific study seeking to demonstrate that WWS would be highly effective at Merrimack Station. EPA indicated that it was carefully considering this information, as well as other information and comments.

EPA reiterated its request for 2017 intake flow data, noting that it was especially interested in this data given the relationship with the thermal component of the permit.

EPA explained that entrainment impacts are primarily of concern in April through July and that flow limits could potentially be developed for that period that would be comparable to the estimated reduction in entrainment that could potentially be achieved at Merrimack Station by using WWS. EPA surmised that a weekly flow limit might work since entrainment peaks on a weekly basis. EPA indicated that the three most recent years of available data provide a good picture of how reduced operations might affect entrainment, including during the end of May and the beginning of June, when densities of entrainable organisms in the river are highest, but when the Station is often not operating.

Unlike entrainment, EPA explained that impingement is a year-round concern. EPA noted that PSNH had expressed a willingness to upgrade the power plant's fish return system. GSP indicated that it was likely amenable to that as well.

EPA also wanted information on through-screen velocity and what the 2 MGD intake water was used for as seen in past flow data when the facility was not generating electricity. GSP speculated that the 2 MGD was possibly for in plant uses.

EPA inquired about the CBI designation for the 2017 ENERCON report. GSP said it was comfortable waiving the CBI claim, but again referred EPA to Bob Bersak of PSNH, since the document was originally developed for PSNH.

VI. Next Steps

EPA to call Bob Bersak, PSNH regarding CBI issues;

GSP to provide data still needed by EPA;

Letter (maybe) from GSP regarding bottom ash transport;

EPA to use thermal data to further consider potential thermal discharge limits and evaluate which metric (BTU's, CF, or flow) is preferable;

316(b): GSP to determine the use of the 2 MGD and calculate through-screen velocity

11/13/18 Meeting of EPA Region 1 & Granite Shore Power Re: Merrimack Station NPDES Permit

AGENDA

1) INTRODUCTIONS

2) Ground Rules:

   a) Meeting is not confidential
   b) Once again, this will be a Brainstorming session:
      i) no one will be held to ideas/comments in this discussion
      ii) our goal is to facilitate an open, creative discussion
      iii) We want to get ideas out & discuss them & advance our thinking

Major Issues

3) Steam-Electric ELG-related issues:

   Can we identify our intention (commimtment?) to modify the permit if the regs get modified to be less stringent? Regs allow modification, but can GSP rely on that?

   - What can we do?

   b) Bottom-Ash Transport Water

   Same modifications issue. They're ok with our timing approach.

4) Thermal Discharge Requirements

   Can we get 2017 data? BTUs?

Shoulder seasons: weekly average
Winter:

5) Cooling Water Intake Structure Requirements

MERRIMACK STATION MEETING - GSP AND EPA 11/13/18

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