

Date: December 19, 2018

From: Mark Stein and Danielle Gaito

To: Merrimack Station NPDES Permit File

Re: Memorandum Documenting December 18, 2018 Meeting Between EPA and Granite Shore Power Concerning the Merrimack Station NPDES Permit

On December 18, 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 Danielle Gaito 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; from ORC: Mark Stein, Cayleigh Eckhardt and Michael Curley.

Representatives of GSP: Elizabeth (Lynn) Tillotson, 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:

EPA welcomed GSP and noted that the Agency was open to the company's suggestions regarding the agenda for the meeting, but that EPA was thinking that it would make sense to discuss progress made on the consideration of proposed thermal discharge limits, cooling water intake structure requirements under Section 316(b) of the Clean Water Act (CWA), and to have a brief discussion regarding limits under the Steam Electric Effluent Limitation Guidelines (ELGs) to end the meeting. Sharon DeMeo (EPA) would arrive late and Damien Houlihan (EPA) had to leave early, which dictated the order in which issues should be addressed.

EPA explained that the ground rules were the same as for the previous November 13, 2018 meeting: 1) the meeting was not confidential, 2) EPA would document the meeting for the administrative record for the Merrimack Station (Merrimack) permit, and 3) the meeting would be 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 November 13th meeting.

III. Thermal Effluent Limitations

EPA and GSP continued the discussion about thermal limits from the November 13, 2018 meeting. EPA and GSP began by re-capping a conversation about BTUs between Lynn Tillotson

of GSP and Damien Houlihan of EPA. EPA considered including a BTU limit at the plant that would ensure the protective limits at S4 are met, but it proved to be a challenge because there may not be sufficient data to define the relationship between the heat load from the plant and S4 temperatures. In addition, the environmental conditions that prevail during discharges (e.g., ambient river temperature, air temperature, river flow) are both changeable and a major influence on the S4 temperature and this increases the complexity of setting a BTU limit that protects the river while not being unnecessarily restrictive for the plant.

EPA reiterated that it continues to investigate a strategy calling for determining protective temperatures at Station S4 and that in place of BTU limits to achieve those temperatures, the plant could establish in-house options to ensure compliance with those temperatures based on environmental conditions. GSP again expressed concern that complying with ambient temperature limits in “real time” could be problematic because it might be difficult to anticipate and prevent problems in “real time.” GSP was open to investigating Standard Operating Procedures (SOPs) that would trigger action to ensure thermal limits are met. GSP reiterated that with such an approach, it would likely need a compliance schedule that would allow for some period of time after the permit goes into effect but before the final thermal limits would apply in order to allow the plant to develop these SOPs. EPA responded that it is considering various options under the regulations that might allow for such a compliance schedule. The requirements may differ based on whether or not a statutory deadline for compliance has been set. EPA also noted that it would need to determine whether there is a statutory deadline applicable for compliance with a 316(a) variance. EPA also noted the option of using a non-penalty Administrative Compliance Order under CWA § 309(a) as a vehicle to provide for an enforceable compliance schedule outside of the permit.

Next, GSP handed out and discussed data it collected for condenser temperatures, river temperatures, and MWh for the two units for May 31, 2013 [included in Record]. GSP indicated that they are focusing on days that the plant was operating at full load and found 43 such dates between May and September over the past five years. GSP indicated that it would compile this data in an electronic file and provide it to EPA. GSP and EPA again weighed the benefits of establishing a BTU limit in place of a plant operating capacity limit.

EPA presented a chart illustrating the average operating capacity between May 1 and September 30 for the years 2013-2018 both as annual 30-day rolling averages and as seasonal averages [included in Record]. The meeting participants discussed what level of capacity is representative of current operations, how a capacity factor might be included in the permit (e.g., as a limit not to be exceeded or as a trigger for additional thermal limits), and how limiting capacity factor might affect GSP’s obligations to the ISO New England. GSP indicated that it might have some air permit language that would be helpful and EPA responded that it would be interested in seeing that language. GSP and EPA brainstormed on the challenges of complying with and enforcing an operating capacity limitation and discussed whether such a limit might, at times, be too restrictive or not restrictive enough. The two parties also discussed the challenges of choosing an appropriate averaging period and what years should be included in establishing what is representative of a mode of operations that would be protective of the environment. For instance, GSP indicated that the years 2011-2012 might also be included in the analysis. GSP also indicated that it may be difficult to respond to acute limits enforced as an hourly average because of the lag time between changes in plant operations and changes in river temperatures and

indicated a preference for a 3-hour averaging period to account for this lag time. GSP noted that it appeared that EPA had included some conservative assumptions in establishing the acute temperature limits in the Draft Permit's Determination Document. EPA indicated that if acute temperature limits are included in the Final Permit, it will review the derivation of the limits proposed in the Determination Document to confirm that they are appropriately protective, but not unreasonably conservative.

Finally, EPA and GSP discussed the proposed chronic temperature limit in winter and whether 1) the proposed limit is appropriate, 2) what the compliance averaging period should be, and 3) whether it is feasible to monitor at S4 in the winter. GSP indicated that it would have to investigate the feasibility of keeping a temperature monitor at Station S4 throughout the winter, whereas it currently pulls the S4 probe in November. EPA and GSP also discussed the extent of ice cover downstream of the plant in winter and whether that has changed with the current pattern of operations. GSP indicated that they did not know but could ask staff and do more visual inspections this coming winter.

IV. 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 noted that PSNH's comments and site-specific studies present compelling new information to suggest that wedgewire screens (WWS) are an available technology to enable Merrimack Station to satisfy CWA § 316(b).

EPA presented a slide that compared potential entrainment reductions from April through September based on the estimated effectiveness of WWS from Normandeau's 2017 Merrimack River study to reductions achieved from 2013 through 2017 based on intake flow data provided by GSP. EPA suggested that, if WWS were chosen as the BTA for Merrimack Station, the permit could potentially provide two pathways for compliance: (1) install WWS screens within an appropriate compliance schedule, or (2) reduce actual intake flows to levels commensurate with the reductions that could be achieved with WWS. EPA and GSP discussed whether a flow limit would be established if they were to choose option 2, the confidence in the proposed values for the entrainment reductions achieved with WWS based on the 2017 report, and whether the permit could include time for GSP to evaluate the two options and then select and implement one. GSP asked if it were to choose option 2 (flow reductions) initially, could GSP nonetheless decide at some later date to install the screens. EPA indicated that if WWS were determined to satisfy CWA § 316(b)'s BTA standard at Merrimack Station, then it saw no reason why GSP would be prevented from installing the screens at any time during the permit term, even if it had initially chosen to satisfy the BTA standards via flow reductions.

V. Steam Electric Guidelines

GSP and EPA briefly discussed any changes in the proposed timeline for promulgation of the new Steam Electric ELGs. EPA indicated that the Agency is unlikely to meet the proposed December 2018 deadline, but continues to work towards publishing Draft Guidelines in early 2019. GSP inquired whether EPA had contacted NHDES about the water quality-based limitations in the Draft Permit because some of the flows and outfalls may change for the Final Permit. EPA responded that there may be some changes to the water quality limitations and the antidegradation/technology requirements and that it will consult with NHDES.

VI. Next Steps

GSP will provide the additional thermal data it presented electronically. We discussed the possibility of meeting again in mid-January, but no date was set.

NAME	Organization	Phone
Danielle Galto	EPA	617-918-1297
Mark Stein	EPA	617-918-1077
DAMIAN HOWLAND	EPA	617-918-1586
Michael Curley	EPA	617-918-1623
Tom DeLawrence	Balch + Bingham	205-226-3434
Lynn Tillotson	GSP	603-230-7968
JAMES ANDREWS	GSP	603-230-7975
Stephen Bidene	Balch	205-251-8100
Cayleigh Eckhardt	EPA	617-918-1044
Eric Nelson	EPA	617-918-1676

WV 1

Default	IDAS03	IDAS03	IDAS03	IDAS03	3DAS11	3DAS11	IDAS01
Start Date = 05/31/13	1407	1408	1409	1410	3031	3032	1001
Start Time = 23:59:00	PNT	PNT	PNT	PNT	PNT	PNT	PNT
Total Time = 1days							
Period = 1hrs 1in							
Page 1	AW1101 hist11	AW1101 hist11	AW1101 hist11	AW1101 hist11	AW1101 hist11	AW1101 hist11	AW1101 hist11

05/31/13 22:59:00	62.35415	61.60710	84.01808	84.74177	60.69980	84.17188	120.00000
05/31/13 21:59:00	62.35415	61.60710	83.45779	84.20485	60.54863	84.34589	118.12500
05/31/13 20:59:00	62.35415	61.60710	83.97138	84.71843	60.39746	84.34589	120.85547
05/31/13 19:59:00	61.84056	61.60710	83.97138	84.25151	60.28496	84.46015	121.08105
05/31/13 18:59:00	61.84056	61.60710	83.97138	84.25151	60.16895	84.74316	121.04297
05/31/13 17:59:00	61.84056	61.09351	83.45779	84.25151	60.02832	84.85742	121.37988
05/31/13 16:59:00	61.84056	61.09351	83.45779	84.25151	59.84375	84.98399	121.51172
05/31/13 15:59:00	61.32697	60.57992	82.94421	83.71459	59.64687	84.91367	120.46875
05/31/13 14:59:00	60.81338	60.57992	82.96758	83.73796	58.97890	82.88691	120.10254
05/31/13 13:59:00	60.81338	60.06633	82.50066	83.20100	58.59570	80.49980	120.15820
05/31/13 12:59:00	60.27646	59.55278	81.96373	82.17383	58.18613	79.77910	120.95215
05/31/13 11:59:00	59.76287	59.03919	81.45014	82.12717	57.78535	79.63672	121.52930
05/31/13 09:59:00	59.24929	58.52560	77.17805	77.97179	57.48652	79.02851	121.35059
05/31/13 08:59:00	59.24929	58.52560	76.10421	77.94843	57.20351	78.17597	97.65820
05/31/13 07:59:00	59.24929	58.52560	78.18189	77.94843	57.07695	77.95097	96.69141
05/31/13 06:59:00	59.24929	58.52560	76.10421	77.97179	57.14727	77.83672	110.13574
05/31/13 05:59:00	59.24929	58.52560	76.12754	77.97179	57.26152	77.72246	97.53223
05/31/13 04:59:00	59.24929	58.52560	76.12754	77.97179	57.37578	77.37441	97.03418
05/31/13 03:59:00	59.24929	58.52560	76.12754	77.97179	57.49004	75.81875	96.21094
05/31/13 02:59:00	59.24929	58.52560	79.76932	82.08047	57.48476	73.56699	97.48828
05/31/13 01:59:00	59.24929	58.52560	80.28291	82.59406	57.42676	71.88125	115.31836
05/31/13 00:59:00	59.24929	58.52560	77.66830	79.93275	57.30722	71.54375	120.74121
05/30/13 23:59:00	59.24929	58.52560					111.17578

	Temp IN South	Temp IN North	Temp out South	Temp out North	River Temp MID	River Temp SO	MW's
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2 in/out
for each
unit

hourly
average
temp

EN
Q: spray pods on?
A: not sure - tried to
water temp + would have to go
back + check NID temp v. permit

Looked at
M-Sep 2013-2017
Full load operation - what was
happening prior
43 days over 5 years
UNIT 1 - 43 dates } included in
UNIT 2 - 43 dates } electronic file

MK2

Default
Start Date = 05/31/13
Start Time = 23:59:00
Total Time = 1days
Period = 1hrs 1in
Page 1

COND inlet W	COND inlet E	COND outlet W	COND outlet E	N/O Temp?	SO Temp?	Unit MW
2DAS02 2407 PNT	2DAS02 2408 PNT	2DASA 2409 PNT	2DASA 2410 PNT	3DAS11 3031 PNT	3DAS11 3032 PNT	2DAS01 2001 PNT
AW2101 hist21	AW2101 hist21	AW2101 hist21	AW2101 hist21	AW2101 hist21	AW2101 hist21	AW2101 hist21

05/31/13 22:59:00	62.89106	62.72767	88.68703	86.00237	60.67168	84.22988	332.58789
05/31/13 21:59:00	62.89106	62.72767	85.02190	82.73412	60.52402	84.33183	290.91797
05/31/13 20:59:00	62.37748	62.72767	88.57030	86.28253	60.36758	84.33183	338.95508
05/31/13 19:59:00	62.37748	62.72767	88.57030	86.30586	60.25508	84.43203	335.51758
05/31/13 18:59:00	62.37748	62.72767	89.62081	86.84278	60.14082	84.65879	346.17188
05/31/13 17:59:00	62.37748	62.21408	89.10722	86.32919	60.03008	84.88379	346.15234
05/31/13 16:59:00	62.37748	62.21408	89.10722	86.32919	59.81562	84.98399	344.83398
05/31/13 15:59:00	61.86389	62.21408	89.15392	86.88948	59.70137	84.88379	344.24805
05/31/13 14:59:00	61.86389	61.70049	89.17725	86.88948	59.36211	84.33183	344.38477
05/31/13 13:59:00	61.32697	61.70049	87.65986	84.81180	59.03516	82.80078	344.38477
05/31/13 12:59:00	60.81338	61.18690	89.17725	86.44592	58.56582	80.50156	345.12695
05/31/13 11:59:00	60.81338	60.67332	88.66367	85.93233	58.12637	79.83360	344.27734
05/31/13 10:59:00	60.29980	60.15973	88.15012	84.90520	57.78535	79.63672	348.57422
05/31/13 09:59:00	59.78621	60.15973	82.50066	79.53590	57.46016	78.97050	263.37500
05/31/13 08:59:00	59.78621	59.64614	82.52402	79.62926	57.23340	78.17597	264.37500
05/31/13 07:59:00	59.78621	59.64614	82.01044	79.62926	57.02070	77.95097	263.68164
05/31/13 06:59:00	59.78621	59.64614	85.74557	82.78082	57.12090	77.83672	267.16797
05/31/13 05:59:00	59.78621	59.64614	82.12717	79.11567	57.12090	77.72598	279.42383
05/31/13 04:59:00	59.78621	59.64614	83.15434	80.16618	57.34766	77.50449	279.42383
05/31/13 03:59:00	59.78621	59.64614	83.15434	80.67976	57.46016	77.40253	281.65039
05/31/13 02:59:00	59.78621	59.64614	83.13097	80.67976	57.46016	75.72734	278.64258
05/31/13 01:59:00	59.78621	59.64614	83.64455	81.19335	57.46016	73.54063	200.17578
05/31/13 00:59:00	59.27262	59.64614	84.90520	81.35678	57.46016	71.78632	
05/30/13 23:59:00	59.27262	59.64614	84.08812	80.35294	57.23516	71.58418	105.27344

Time →



