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1.0 Introduction and Chronology of Permit Conditions

This chapter of the response to comments document pertains to the many comments that were received relating to flue gas desulfurization (FGD) wastewater generated at Merrimack Station.

The regulatory landscape and the site-specific facts and information have shifted throughout this NPDES permit renewal process. While the previous owner of Merrimack Station (PSNH), on May 5, 2010, supplemented its renewal application to request authorization to discharge FGD wastewater under the NPDES program, the situation has recently changed. *See* AR-225. The current owner of Merrimack Station, Granite Shore Power (GSP), submitted a letter to EPA Region 1 on March 25, 2020, wherein the company stated:

GSP Merrimack LLC is withdrawing the pending request for authorization in the new permit to directly discharge FGD wastewater to the Merrimack River . . .

AR-1690, p. 2. The company makes clear that this decision is based on the forthcoming “revisions to the ELGs and the VIP for FGD wastewater” and significant reductions in the Station’s capacity utilization. *Id.*

EPA, therefore, is removing all conditions and limits applicable to a discharge of FGD wastewater from the Final Permit. The Final Permit does not authorize discharge of this wastestream; pursuant to CWA section 301, any direct discharge of this wastestream into the Merrimack River from Merrimack Station is not authorized by Final Permit and is unlawful. The conditions and limits removed and affected will be discussed in further detail below.

Although the current owner of Merrimack Station, Granite Shore Power (GSP) has withdrawn its request for authorization, under its NPDES permit, to discharge FGD wastewater, *see* AR-1690, EPA Region 1 provides the following overview of the draft FGD limitations and requirements proposed since the existing 1992 Permit expired and the justifications supporting those determinations.

Merrimack Station consists of two coal fired, steam electric generating units. The coal combustion process generates a variety of air pollutants that are emitted from the facility's smoke stacks. In 2006, the New Hampshire legislature enacted RSA 125-O:11-18, which required the then owners of the station, Public Service of New Hampshire (PSNH) to install and operate a wet FGD system at Merrimack Station to reduce air emissions of mercury and other pollutants. *See* RSA 125-O:11(I), (II) and (III); RSA 125-O:12(V); RSA 125-O:13(I) and (II). PSNH was required to have the FGD system fully operational by July 1, 2013 and easily met that deadline, placing the scrubber into service in September 2011. *See* AR-846, p 123.

The wet FGD system that PSNH installed is a limestone forced oxidation scrubber system, where the flue gas emitted from the boiler stacks comes into contact with a liquid spray of limestone slurry. The liquid slurry absorbs sulfur dioxide and other sulfur compounds from the flue gas, as well as other contaminants including particulates, chlorides, volatile metals (e.g., arsenic (a metalloid), mercury, selenium, boron, cadmium, and zinc), total dissolved solids (TDS), nitrogen compounds and organics. PSNH reported that the scrubber system reduces mercury emissions by approximately 95 percent and sulfur dioxide emissions by over 90 percent. *See* AR-1215, p 10. The chloride concentration and clay inert fines of the FGD slurry must be controlled through a routine wastewater purge to minimize corrosion of the absorber vessel materials.

Acknowledging that the new scrubber system would result in generation of wastewater, in May of 2009 PSNH notified EPA that it planned to install a primary wastewater treatment system (PWWTs) consisting of physical/chemical treatment (i.e., chemical precipitation) and an Enhanced Mercury and Arsenic Removal System (EMARS) to treat the FGD scrubber wastewater purge. AR-636. Nearly one year later, PSNH supplemented its NPDES permit renewal application to request authorization to discharge FGD wastewater. AR-225.

2011 Draft Permit

Region 1 issued a draft permit to Merrimack Station on September 30, 2011 (2011 Draft Permit). The 2011 Draft Permit included technology-based limitations and conditions for the wastewater discharge expected from Merrimack Station's then recently constructed wet FGD scrubber system through a newly created internal Outfall 003C. *See* Draft Permit, pp. 6-7; 2011 Fact Sheet, pp. 16-17.

Discharges of wastewater from an FGD scrubber system to a water of the United States must comply with the requirements of a NPDES permit, *see* 33 U.S.C. §§ 1311(a) and 1342(a), and must satisfy federal technology-based treatment requirements as well as any more stringent state water quality-based requirements that may apply. At the time the 2011 Draft Permit was developed, the National ELGs which set technology-based limits for the discharge of certain pollutants by facilities in the Steam Electric Power Generating Point Source Category, *see* 40 CFR Part 423, did not yet include BAT limits for certain pollutants of concern in FGD wastewater. In the absence of applicable ELGs for FGD wastewater, technology-based limits may be developed by EPA (or state permitting authorities administering the NPDES permit

program) on a BPJ, case-by-case basis. 33 U.S.C. § 1342(a)(1)(B); 40 CFR § 125.3(c) (“Where promulgated effluent limitations guidelines only apply to certain aspects of the discharger’s operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the Act.”).

For the 2011 Draft Permit, Region 1 conducted a BPJ evaluation in which it examined eleven candidate technologies to determine the BAT for treating wastewater resulting from Merrimack Station’s FGD system. *See* 40 CFR §§ 125.3(a)(2)(iv) and (v), (c)(3). Region 1 proposed, based on BPJ, that the Station’s newly installed PWWTS, coupled with biological treatment (designed to optimize the removal of selenium), was the BAT for limiting the discharge of pollutants present in FGD wastewater at Merrimack Station. *See* Region 1’s 2011 Fact Sheet, Attachment E (AR-616). Therefore, based on the proposed BAT treatment system, Region 1 included effluent limits for FGD wastewater in the 2011 Draft Permit, including specific limits for various metals (*e.g.*, mercury, arsenic, selenium), chlorides, and total dissolved solids (TDS). Because these limits differed from those applied to low volume waste and other wastes deposited into the slag settling pond, Region 1 concluded that the FGD wastewater needed to be sampled at a separate internal outfall (Outfall 003C) prior to mixing with other wastes in the settling pond. *See id.* Once discharged through internal Outfall 003C into the slag settling pond, however, the FGD wastewater was to remain subject to the limits for TSS and O&G (which are the same for all the commingled wastes in the slag settling pond) at Outfall 003A.

In addition to the technology-based limits applied to Outfall 003C, Region 1 included water quality-based limits and reporting requirements for certain pollutants at Outfall 003A (slag settling pond, which would receive bottom ash transport wastewater, storm water, boiler blow-down, treated metal cleaning waste, landfill leachate and other miscellaneous and low volume wastes). These permit requirements were informed by the 2010 NH DES Antidegradation Analysis, which accounted for the addition of FGD wastewater into the slag settling pond. *See* AR-209.

Merrimack Station's 2011 Draft Permit was placed on Public Notice from September 30, 2011 through February 28, 2012 and a Public Hearing took place on November 3, 2011. The Region received numerous comments regarding the FGD requirements of the 2011 Draft Permit from: PSNH (AR-846), Utility Water Act Group (UWAG) (AR-841), Ohio Utilities Group (AR-1131), Conservation Law Foundation (CLF) (AR-851 and AR-853, Koon Report), Duke Energy (AR-1126), Electric Power Research Institute (EPRI) (AR-844), and Environmental Groups consisting of Defenders Of Wildlife, Earthjustice, Environmental Integrity Project, National Wildlife Federation, and Sierra Club (AR-866).

2014 Revised Draft Permit

After the public comment period for the 2011 Draft Permit concluded, Region 1 learned that PSNH had installed and, in June of 2012, begun operating Vapor Compression Evaporation (VCE) treatment technology to treat and reduce the volume of FGD wastewater at Merrimack

Station so that direct discharge of the wastewater to the Merrimack River was not necessary. *See* AR-638; AR-303; AR-1135, p. 18. This secondary wastewater treatment system (SWWTS) consists of a falling-film evaporator (or brine concentrator), forced circulation crystallizers and an Oberlin belt press filter, which evaporate the PWWTS effluent to a solid waste stream, leaving only a small liquid residual.¹

Given this new information, Region 1 completed a new BPJ, case-by-case analysis of BAT for Merrimack Station and “determined that the Facility’s existing primary FGD wastewater treatment system (which includes physical/chemical treatment components and the EMARS absorber), combined with its [now] existing secondary FGD wastewater treatment (which includes the two-stage evaporation system which can be operated to achieve [zero liquid discharge] ZLD) are the [new proposed] BAT.” AR-1135 (Fact Sheet for 2014 Revised Draft Permit), pp. 40-41. On this basis, EPA issued the 2014 Revised Draft Permit on April 18, 2014, in which it proposed a zero-discharge limit for pollutants in FGD wastewater based on the VCE technology outlined in the Region’s BPJ determination. Under this approach, the internal outfall (Outfall 003C) created for FGD wastewater in the 2011 Draft Permit was no longer necessary and was removed from the Revised Draft Permit.

Region 1 also re-evaluated the basis of the water quality-based limits for Outfall 003A (slag settling pond) mentioned above and found that there was no reasonable potential to violate water quality standards for arsenic, mercury, and selenium, (*see* AR-1086 (data and calculations)), because PSNH was operating its wet FGD scrubber system without discharging to the slag settling pond. Therefore, the water quality-based reporting requirements and limits were removed from Outfall 003A in the 2014 Revised Draft Permit.²

The 2014 Revised Draft Permit, associated fact sheet, and administrative record was available for public review and comment beginning April 18, 2014. Consistent with 40 CFR § 124.14(a)(1), Region 1 provided a two-stage comment period for the 2014 Revised Draft Permit. AR-1137. In total, the combined comment period lasted 187 days, ending on October 22, 2014. The Region received numerous comments regarding the FGD requirements of the 2014 Draft Permit from: PSNH (AR-1215 and 1231), UWAG (AR-1222), Environmental Groups consisting of CLF, Earthjustice, Environmental Integrity Project, and Sierra Club (AR-1220), Southern Company (AR-1218), Upper Merrimack River Local Advisory Committee (AR-1224), EPRI (AR-1223), and Lowell Regional Wastewater Utility (AR-1232).

2017 Reopened Public Comment

Both the 2011 Draft Permit and the 2014 Revised Draft Permit were developed in the absence of

¹ Using VCE technology, PSNH proceeded with meeting its obligation under New Hampshire law to have the FGD wet scrubber operating no later than July 1, 2013 and was able to maximize qualification for the state law economic incentives for expedited cuts in Merrimack Station’s mercury air emissions without reliance on the issuance of a final renewed NPDES permit authorizing discharge of FGD wastewater.

² The 2014 Fact Sheet states that the conditions removed from Outfall 003A are the reporting requirements for chloride and aluminum and the effluent limits for aluminum, arsenic, mercury and selenium, which were based on water quality considerations. 2014 Fact Sheet, pp. 52-53 (AR-1135).

national BAT ELGs for FGD wastewater and, therefore, technology-based effluent limits for FGD wastewater in these draft permits were based on BPJ determinations. On November 3, 2015, however, EPA promulgated revised ELGs for the Steam Electric Power Generating Point Source Category (“2015 Final Rule” or “2015 ELGs”). *See* 80 Fed. Reg. 67838 (Nov. 3, 2015).

The new 2015 ELGs update effluent guidelines that have been in place since 1982, reflecting technology improvements in the steam electric power industry over the last three decades. The 2015 Final Rule includes requirements that reduce pollutants of concern such as mercury, arsenic, and selenium that are released into America’s waterways by coal ash, air pollution control waste (including from FGD scrubber systems), and certain other wastestreams from steam electric power plants. Under the 2015 Final Rule, new requirements for existing power plants are to be phased in between 2020³ and 2023. More specifically, the 2015 ELGs, which became effective January 3, 2016, provide BAT limitations for FGD wastewater and replace the need for site-specific BPJ assessments to develop technology-based BAT requirements for this wastestream. *See* 2017 Statement, pp. 48-52 (AR-1534) (identifying new requirements for FGD wastewater under the 2015 Rule and potentially implications for Merrimack Station).

By 2017, this rulemaking and other regulatory changes, new data, information, and arguments pertinent to certain aspects of the permit appeared to raise substantial new questions concerning the permit. On August 4, 2017, EPA Region 1 reopened the comment period to allow additional comment to address the new regulations and other new information. *See* 2017 Statement (AR-1534); 2017 Public Notice (AR-1533). The comment period was extended 74 days, ending on December 18, 2017. AR-1692. EPA received FGD-related comments from: PSNH (AR-1548), CLF (AR-1573), and EPRI (AR-1600).

Several important developments related to the 2015 Rule occurred throughout 2017, including the Agency’s decision to reconsider certain limits on FGD wastewater, the Fifth Circuit’s vacatur and remand of limits applicable to FGD legacy wastewater⁴, and the Agency’s September 2019 Proposed Revisions to the ELGs (proposed revisions to both FGD and BATW limitations). *See* Response to Comment V.1 for an overview of these legal and regulatory changes.

2020 Final Permit

As previously stated, on March 25, 2020, the current owner of Merrimack Station, Granite Shore Power (GSP), submitted a letter formally withdrawing its request for authorization to discharge wastewater generated from its FGD system. AR-1690. Therefore, the Final Permit, like the previous 1992 Permit, does not authorize the Permittee to discharge FGD wastewater directly to the Merrimack River. As a result, the description of Outfall 003A in the Final Permit no longer includes FGD wastewater.

As a result, the following conditions and limits have been removed from the Final Permit:

- The Draft Permit’s Outfall 003C and any related internal limits;

³ *See* Response to Comment Section IV.1, which outlines the rulemaking challenges and the Agency’s 2017 Rule postponing the compliance date for certain provisions of the 2015 Rule from 2018 to 2020.

⁴ *See Southwestern Elec. Power Co. v. U.S. Env’t Prot. Agency*, 920 F.3d 999, 1015 (5th Cir. 2019) (*SWEPCO*).

- The water-quality based reporting requirements for chloride, aluminum, arsenic, mercury and selenium, at Outfall 003A; and
- The water-quality based effluent limits for aluminum, arsenic, mercury and selenium, at Outfall 003A.

Additionally, and to be clear, removal of the authorization to discharge FGD wastewater into the Merrimack River does not affect any of the facility's practices in transporting FGD wastewater off-site to publicly owned treatment works (POTWs), nor does it affect or preclude the reuse of FGD wastewater to condition fly ash. See Section V.2 of this Response to Comments document for discussion of the facility's appropriate practice of conditioning fly ash and related landfill disposal. As confirmed by statements in GSP's March 25, 2020 letter, EPA expects that withdrawal of its request to authorize discharges under its NPDES permit, simply means that the facility will continue its current practices with regard to FGD. AR-1690, p. 2. These current management practices result in no discharges of FGD wastewater to the Merrimack River from the Station, allow for operation of VCE technology without NPDES coverage, and are in compliance with section 301 of the CWA.

As is always the case, Merrimack Station is able to request NPDES coverage for FGD discharges in the future through a permit modification or permit renewal process. Nothing in this Final Permit precludes such actions.

Finally, to the extent that the numerous comments received relate to 1) the direct discharge of FGD wastewater into the Merrimack River, 2) Region 1's development of site-specific BAT limits for FGD wastewater, or 3) the applicability of the 2015 Rule to applying limits to FGD wastewater, those comments are no longer relevant to EPA's Final Permit for Merrimack Station and therefore do not merit any response.⁵ EPA notes, however, that the Agency has benefitted from the numerous comments that provided education to both EPA and the public regarding the complexities of VCE technology and its use and effects at Merrimack Station.

2.0 Concerns about Hauling FGD Wastewater to Local Publicly Owned Treatment Works

Comment VIII.2.1	AR-866, Environmental Groups, p. 2
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Comment: PSNH is currently disposing FGD effluent off site. EPA should investigate whether this wastewater is receiving treatment commensurate with its high concentration of total dissolved solids, including soluble metals, chlorides, and sulfates.

⁵ All substantive comments related to FGD discharge are located in the following comment letters, which are also listed in EPA's discussion above:

2011 - AR-846, AR-841, AR-1131, AR-851, AR-853, AR-1126, AR-844, and AR-866.

2014 - AR-1215, AR-1231, AR-1222, AR-1220, AR-1218, AR-1224, AR-1223, and AR-1232.

2017 - AR-1548, AR-1573, and AR-1600.

Again, because EPA is no longer authorizing FGD discharge under this NPDES permit, these comments are not relevant and no longer warrant a response.

Comment VIII.2.2**AR-1218, Southern Company, pp. 5, 6, 7**

Comment: In the face of Region 1’s proposed discharge prohibition, Merrimack Station will have no choice but to continue this practice for so long as the neighboring POTW facilities will accept the purge liquor. This option presents another “catch 22” for Merrimack as the revised NELG rule may place stringent pre-treatment standards (i.e., PSES and PSNS limits) on FGD discharges that will prohibit this practice. The purge liquor is extremely concentrated due to volume reduction and may not meet the proposed rule’s arsenic, mercury, selenium, or nitrite/nitrate pre-treatment standards for acceptance by a POTW facility.

Comment VIII.2.3**AR-1220, Environmental Organizations, pp. 7-10**

Comment: *EPA Should Use Its Authority to Prevent Negative Water Quality Impacts from Merrimack Discharging Its FGD Wastewater to POTWs that are Not Equipped to Handle Such Wastewater*

EPA’s fact sheet states that PSNH could circumvent a zero-liquid discharge standard for its FGD wastewater by not operating the VCE and crystallizer system but instead sending the FGD wastewater to a local publicly owned treatment works. Fact Sheet at 49. PSNH itself acknowledges that POTWs are not designed to remove the toxic pollutants present in FGD wastewater from Merrimack, such as mercury and selenium. 2011 Draft Permit, Attachment E at 14. Moreover, EPA notes that a number of toxic pollutants including persistent, bioaccumulative toxins, are present in FGD wastewater and will not be treated effectively in a POTW. Fact Sheet at 49 (“It is unclear whether these pollutants receive any treatment at the POTWs. These constituents are generally expected to pass through a typical municipal sewage treatment plant.”). EPA has proposed to address this regulatory gap in the proposed ELG rule, but in the meantime there are currently no pretreatment standards for many of the pollutants present in the FGD wastewater from Merrimack. See 78 Fed. Reg. at 34,477 (noting that “all of the pollutants proposed for regulation under BAT/NSPS pass through,” including arsenic, mercury, and selenium).

Unfortunately, PSNH has a record of shipping its scrubber wastewater off-site to POTWs. Indeed, in its rush to qualify for economic incentives for operating its scrubber, PSNH shipped Merrimack’s scrubber wastewater off-site because it did not have a NPDES permit authorizing its discharge. Fact Sheet at 24. PSNH has continued shipping some of Merrimack’s wastewater off-site, even after the VCE and crystallizer system was built and operational. *Id.* at 24-25. Most disturbingly, as recently as February 2013, PSNH was still sending off-site wastewater that had not gone through the VCE and crystallizer system. *Id.* at 25 (noting that in February 2013, PSNH sent 186,000 gallons of wastewater from Stream A to Hooksett and 106,000 gallons to Allenstown). PSNH refused to explain to EPA why it has been sending this wastewater to POTWs, particularly wastewater not run through the VCE and crystallizer system, and instead offered an opaque statement that it was a “business decision” based on several factors.

It is inconsistent with the purpose of the Clean Water Act for PSNH to circumvent the zero-liquid discharge limit at its own outfall by sending the wastewater to a POTW that will discharge the pollutants, untreated, into a waterway. This would merely change the location of the discharge; it would not eliminate the discharge. EPA should work to discourage such a circumvention of zero-liquid discharge and take all available actions to eliminate the environmental risks associated therewith. This is especially important given that multiple downriver municipalities in New Hampshire and Massachusetts depend on the Merrimack for drinking water.

To prevent Merrimack Station from sending FGD wastewater to POTWs that cannot treat the toxic pollutants in the FGD wastewater, EPA should take actions regarding both Merrimack Station's NPDES permit and the POTWs' NPDES permits. EPA should include a clause in the final Merrimack Station NPDES permit providing that EPA will reopen the permit to include the new pretreatment standards for FGD wastewater established by the forthcoming ELG rule. EPA should then reopen and revise Merrimack Station's NPDES permit as soon as the new pretreatment standards for FGD wastewater are finalized. In addition, EPA should require PSNH to submit to EPA Region 1 a report at the end of each month providing detailed information on any FGD wastewater sent to a POTW for treatment, including the name and location of the receiving POTW, the amount and pollutant characteristics of the wastewater, and such other information as is necessary.

In addition, EPA should also take actions relating to the POTWs' NPDES permits to address this problem. First, EPA should determine whether the POTWs receiving FGD wastewater from the Merrimack Station are violating their NPDES permits by doing so (and should immediately inform the POTW operators of its intent to undertake this determination). Between 2012 and 2014, Merrimack Station sent FGD wastewater to 5 POTWs: S. Portland, Attleboro, Lowell, Hooksett, and Franklin. Fact Sheet at 24-25. As the table below indicates, it is our understanding that EPA Region 1 is the permitting authority for all of these facilities except the S. Portland POTW.

Table 1. POTWs that Receive FGD Wastewater from Merrimack Station and Have NPDES Permits Issued by EPA Region 1

POTW	NPDES Permit Date	Permit Number	Expired?
Attleboro	6/9/2008	MA0100595	Yes
Franklin	6/19/2009	NH0100960	Yes
Hooksett	8/5/2013	NH0100129	No
Lowell	9/1/2005	MA0100633	Yes

As the agency that issued the NPDES permits for these facilities, EPA should determine whether receiving Merrimack Station's FGD wastewater results in a violation of any permit terms, such as terms prohibiting the pass through of pollutants and/or prohibitions on the discharge of toxic amounts of pollutants or toxic components that will result in demonstrable harm to aquatic life. EPA should also investigate whether the POTWs are complying with any reporting requirements that may be triggered by the receipt of FGD wastewater from Merrimack Station, such as

requirements to inform EPA Region 1 when new pollutants are introduced from an indirect discharger or when there is a substantial change in the pollutants introduced to the POTW.

Second, if EPA concludes that the current NPDES permits for these POTWs do not include terms that adequately address the receipt and discharge of FGD wastewater, then EPA Region 1 should modify the permits for these 4 POTWs and include new permit conditions to prohibit or adequately treat FGD wastewater from Merrimack Station. 40 C.F.R. § 122.63(a)(2) authorizes EPA to modify a NPDES permit under the following circumstances:

Information. The Director has received new information. Permits may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance.

The NPDES permits for the Attleboro, Franklin, and Lowell POTWs were issued prior to 2012, when the Merrimack scrubber came online and began generating scrubber wastewater, and when Merrimack began sending this wastewater to POTWs. All of the information in the record regarding shipments of FGD wastewater from Merrimack to these 3 POTWs constitutes information “not available at the time of permit issuance,” 40 C.F.R. § 122.63(a)(2), since the POTW permits were issued before the scrubber wastewater was generated and shipped to the POTWs. Additionally, EPA states in the Fact Sheet that it believes that limits may be needed because the POTWs are not designed to adequately treat the toxic metals in the FGD wastewater, and thus the information “would have justified the application of different permit conditions,” *id.*, namely, limits on receiving FGD wastewater.

Third, EPA should insist that each POTW that has received FGD wastewater from Merrimack Station revise its local pretreatment standards to prohibit Merrimack Station from sending FGD wastewater to the POTW. POTWs must adopt local pretreatment requirements to address local conditions and submit the plan for approval by the relevant permitting authority. See 40 C.F.R. § 403.8. The POTW is required to issue a permit, or the equivalent of a permit, to each industrial source discharging to the POTW. EPA should follow through on its suggestion, Fact Sheet at 49, of using local pretreatment standards to address the indirect discharge of FGD wastewater, which contains dangerous toxic pollutants that cannot be adequately treated by POTWs. As noted above, EPA has already found, in the proposed ELG rule, that toxic pollutants in FGD wastewater (including arsenic, mercury, and selenium) pass through POTWs in the absence of effective pretreatment, see 78 Fed. Reg. at 34,477, and EPA must not allow POTWs to continue to discharge Merrimack’s FGD wastewater without adequate treatment or in a manner that causes or contributes to a violation of state water quality standards. EPA should make it clear in the Fact Sheet for this permitting action that the measures relating to POTWs described above will apply to any POTW that has not yet received indirect discharges from Merrimack Station may receive such discharges in the future.

Finally, EPA should urge the State of Maine to take similar actions regarding the S. Portland POTW, namely: investigate whether receiving FGD wastewater from Merrimack Station violated any terms of the existing NPDES permit; revise the NPDES permit to include permit terms to prohibit receiving FGD wastewater if such terms do not exist in the current permit;

require the S. Portland POTW to revise its local pretreatment standards, and include such revised conditions in any permit or similar document that the POTW has issued to PSNH. EPA should also ensure that Maine, and other states in New England, take these actions regarding any POTWs that receive FGD wastewater from Merrimack Station in the future.

Comment VIII.2.4**AR-1232, Lowell Regional Wastewater Utility, pp. 1-3**

Comment: Lowell Regional Wastewater Utility (LRWWU) owns and operates Duck Island Wastewater Treatment Facility (WWTF), a municipal sewage treatment plant that accepts domestic, commercial, and industrial wastewaters from Lowell and its four surrounding towns. The Duck Island WWTF also accepts domestic and commercial septage, as well as industrial hauled waste, including FGD wastewater from Merrimack Station....

LRWWU's NPDES Permit Compliance

Environmental Organizations: *“EPA should determine whether the POTWs receiving FGD wastewater from the Merrimack Station are violating their NPDES permits by doing so....”*

LRWWU: LRWWU has not violated its NPDES permit as a result of accepting FGD hauled wastewater from Merrimack Station. LRWWU takes seriously its responsibility to meet NPDES permit conditions and protect water quality in the Merrimack River. We would not accept this wastewater if it jeopardized our compliance and the river's health.

LRWWU's Pretreatment Standards

Environmental Organizations: *“EPA should insist that each POTW that has received FGD wastewater from Merrimack Station revise its local pretreatment standards to prohibit Merrimack Station from sending FGD wastewater to the POTW.”*

LRWWU: LRWWU's Industrial Pretreatment Program (IPP), and EPA-approved program, monitors and regulates all significant industrial discharges to the Duck Island WWTF, including the FGD wastewater from Merrimack Station. The purpose of LRWWU's IPP is to prevent pass-through and the interference at the Duck Island WWTF. Pass-through refers to a receiving stream discharge containing constituents that violate NPDES permit conditions. Interference refers to constituents in wastewater or sludge that disrupt the wastewater treatment process or wastewater sludge disposal. Please refer to excerpts below from Part 40 of the Code of Federal Regulation (CFR) for definitions of pass-through and interference.

It is important to recognize that the **presence** of trace metallic ions in wastewater, receiving stream discharges, or wastewater sludges does not necessarily constitute “pass-through” or “interference.” In order for pass-through or interference to occur, the **“quantity or concentration”** of a particular constituent must be great enough to cause a permit violation, a process upset, or a restriction in the use of sludge. LRWWU's IPP

consistently achieves its objectives of protecting the Duck Island WWTF, the Merrimack River, and the environment from pass-through and interference.

Definitions:

“Pass-through” is defined in 40 CFR 403.3(p) as *“a discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).”*

“Interference” is defined in 40 CFR 403.3(k) as *“a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: (1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and (2) therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal...”*

Presence of Pollutants in FGD Wastewater

Environmental Organizations: *“EPA notes that a number of toxic pollutants including persistent, bioaccumulative toxins, are present in FGD wastewater....”*

LRWWU: Over the past three years, LRWWU has periodically analyzed the FGD wastewater that it has accepted from Merrimack Station. Analytical data indicated the presence of trace concentrations of dissolved metals, and nothing else of concern. The metallic concentrations are always less than one part per million (ppm), often a tiny fraction of a single ppm. Trace levels of dissolved metal are common in many liquid wastes, including domestic and commercial sewage.

The presence of low concentrations of dissolved metals does not necessarily represent a threat to human health or the environment. The bio-toxicity of dissolved metals is dependent upon many factors, all of which are considered when water quality and sludge standards are developed. These conservative federal and state standards limit the amount of dissolved metals that can be accepted into the Duck Island WWTF and discharged to the Merrimack River. In all cases, LRWWU complies with these environmental standards.

Fate of Pollutants in FGD Wastewater

Environmental Organizations: *“EPA notes...that POTWs are not designed to remove the toxic pollutants present in FGD wastewater from Merrimack, such as Mercury and Selenium... These constituents are generally expected to pass through a typical municipal sewage treatment plant.”*

LRWWU: The Duck Island WWTF is not specifically designed to remove trace amounts of Mercury, Selenium, or other dissolved metallic ions that are typically found in

domestic, commercial, and industrial wastewaters. At the concentration levels found in Duck Island's waste streams, metal ions either remain dissolved in the water phase or partition into wastewater sludge (solids). Dissolved metallic ions are discharged to the Merrimack River, while those that aggregate in wastewater sludge are disposed with the sludge.

Because many of the dissolved metallic concentrations found in wastewater are near or below detection limits, the removal efficiencies often cannot be calculated. In these instances, literature values for typical removal efficiencies are utilized. The 2004 EPA Local Limits Development Guidance Appendices (Appendix R, Page 2) list median removal efficiencies for Mercury (60%) and Selenium (50%). These literature values indicate that roughly half of the trace amounts of these two metals are discharged to a receiving stream, and the other half are disposed in wastewater sludge.

Revision of LRWWU's NPDES Permit

Environmental Organizations: *"EPA should issue a final NPDES permit for Merrimack Station that ...revises that NPDES permit for each POTW receiving FGD wastewater from Merrimack, if the existing permit does not adequately address FGD wastewater."*

LRWWU: LRWWU's NPDES permit should not be revised to address FGD wastewater because LRWWU properly manages this waste stream through the implementation of its IPP. The presence of trace concentrations of dissolved metallic ions in FGD wastewater, the non-detectable or barely-detectable concentrations levels of these metallic ions in LRWWU's Duck Island WWTF influent and effluent, and LRWWU's consistent compliance with pretreatment standards indicate that LRWWU's NPDES permit adequately addresses FGD wastewater.

LRWWU's Acceptance of FGD Wastewater

Environmental Organizations: *"EPA must not allow POTWs to continue to discharge Merrimack's FGD wastewater without adequate treatment or in a manner that causes or contributes to a violation of state water quality standards."*

LRWWU: LRWWU's is meeting all of the conditions of its NPDES permit and is properly managing its IPP. Therefore, LRWWU should be allowed to continue receiving FGD wastewater from Merrimack Station.

Comment VIII.2.5	AR-1231, PSNH, p. 20
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Comment: *The ESIGs' Comments and Justifications Seeking to Compel EPA to Prohibit Continued Shipments of FGD Waste Water to POTWs as a Compliance Option for Merrimack Station are Wrong*

The [(Earthjustice, Environmental Integrity Project, Sierra Club, and the Conservation Law Foundation) (collectively, the “Environmental Special Interest Groups” or “ESIGs”)] ESIGs lack a basic understanding of POTW operations and the NPDES permits these facilities possess. The entirety of the ESIGs’ comments suggest actions that either already have been undertaken by the various POTWs accepting waste water from PSNH or are outside the scope of EPA’s regulatory authority. PSNH’s consultant, GZA GeoEnvironmental, Inc. (“GZA”), addressed and responded to each of the ESIGs’ POTW comments.¹³ GZA’s comments, along with the October 20, 2014 comments Lowell Regional Wastewater Utility (“LRWWU”) filed with EPA, invalidate each of the ESIGs’ comments on this topic and prove that the ESIGs’ comments should be disregarded by EPA in this permit renewal proceeding.

¹³ GZA’s comments, entitled “Response Comments to August 14, 2014 Letter from Conservation Law Foundation/Earthjustice/Environmental Integrity Project/Sierra Club to USEPA Region 1” (October 2014), are attached hereto as Exhibit 2. [see below]

Comment VIII.2.6	AR-1231, PSNH, Exhibit 2 from GZA - in response to ESIG (“Environmental Organizations”) comments, specifically those italicized and underlined
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Environmental Organizations: Page 7, First Paragraph

EPA Should Use Its Authority to Prevent Negative Water Quality Impacts from Merrimack Discharging Its FGD Wastewater to POTWs that are Not Equipped to Handle Such Wastewater

EPA’s fact sheet states that PSNH could circumvent a zero-liquid discharge standard for its FGD wastewater by not operating the VCE and crystallizer system but instead sending the FGD wastewater to a local publicly owned treatment works. Fact Sheet at 49. PSNH itself acknowledges that POTWs are not designed to remove the toxic pollutants present in FGD wastewater from Merrimack, such as mercury and selenium. 2011 Draft Permit, Attachment E at 14. Moreover, EPA notes that a number of toxic pollutants including persistent, bioaccumulative toxins, are present in FGD wastewater and will not be treated effectively in a POTW. Fact Sheet at 49 (“It is unclear whether these pollutants receive any treatment at the POTWs. These constituents are generally expected to pass through a typical municipal sewage treatment plant.”). EPA has proposed to address this regulatory gap in the proposed ELG rule, but in the meantime there are currently no pretreatment standards for many of the pollutants present in the FGD wastewater from Merrimack. See 78 Fed. Reg. at 34,477 (noting that “all of the pollutants proposed for regulation under BAT/NSPS pass through,” including arsenic, mercury, and selenium).

PSNH/GZA: Merrimack Station’s treated FGD wastewater contains concentrations of certain pollutants of concern (POCs) (e.g., arsenic, mercury, and selenium) at levels in the parts per billion and parts per trillion range. These levels are one and two orders of magnitude less than typical concentrations of pollutants common to treated wastewater from significant industrial

users (SIUs), such as metal finishers, medical laboratories, hospitals, textiles, electronics, industrial launderers, etc. POTWs have the ability to remove a variety of pollutants including nonconservative (e.g., BOD, TSS, oil & grease) and conservative (e.g., metals) pollutants. Common biological and physical processes employed by POTWs have the ability to remove most pollutants, in particular arsenic, mercury, and selenium. Based on published removal rates (EPA Guidance for Local Limits Development Document - July 2004), removal rates for these three metals typically range from 45% to 60% in POTWs. Biological treatment processes tend to assimilate metals in the biomass and/or convert dissolved metals to insoluble chemical forms that are subsequently removed through physical gravity settling processes inherent to all municipal treatment facilities.

These removal capabilities represent one critical input in a POTW's approach to determining the Maximum Allowable Headworks Loading (MAHL) for its particular treatment process. It is a fundamentally and universally accepted fact that all POTWs remove a significant percentage of pollutants contributed by non-domestic sources. In particular, all toxic metals of concern are removed generally in a range of 30% to 70% at POTWs.

In October 2010, PSNH provided comments to EPA setting out a BAT analysis for the treatment of FGD wastewaters at Merrimack Station. A comment suggesting that publicly owned treatment works (POTWs) are not designed to remove toxic pollutants present in FGD wastewater from Merrimack Station was included in the record. This assertion was included to highlight the fact that the primary wastewater treatment system designed specifically for the treatment of FGD wastewaters would achieve better pollutant removals than POTWs. POTWs do provide incremental removal of already very low levels of metals. Merrimack Station's primary treatment system provides a higher removal rate of pollutants, but PSNH acknowledges that additional treatment is provided through the POTW treatment process despite the fact that the effluent from the primary wastewater treatment system already complies with water quality standards in the Merrimack River at Merrimack Station.

Environmental Organizations: Page 8, First Paragraph

To prevent Merrimack Station from sending FGD wastewater to POTWs that cannot treat the toxic pollutants in the FGD wastewater, EPA should take actions regarding both Merrimack Station's NPDES permit and the POTWs' NPDES permits. EPA should include a clause in the final Merrimack Station NPDES permit providing that EPA will reopen the permit to include the new pretreatment standards for FGD wastewater established by the forthcoming ELG rule. EPA should then reopen and revise Merrimack Station's NPDES permit as soon as the new pretreatment standards for FGD wastewater are finalized. In addition, EPA should require PSNH to submit to EPA Region 1 a report at the end of each month providing detailed information on any FGD wastewater sent to a POTW for treatment, including the name and location of the receiving POTW, the amount and pollutant characteristics of the wastewater, and such other information as is necessary.

PSNH/GZA: Action on the part of EPA, such as amending the NPDES permits of Merrimack Station and/or the various POTWs, to prevent treated FGD wastewater from being managed at

local POTWs is unwarranted and would lead to further incongruent standards for the steam electric generating industry compared to other industrial dischargers. The concentrations and mass of POCs in Merrimack Station's treated FGD wastewater are extremely miniscule and insignificant. A comparison of wastewaters received from other typical, non-domestic and domestic sources further illustrates this fact. For example, the average concentration of common metals in domestic septage is similar or greater than treated FGD wastewater generated at Merrimack Station. The average concentration of arsenic is typically in the range of 0.17 mg/l in septage¹ compared to values typically below 0.03 mg/l in treated FGD wastewater. Considering the removal efficiencies typically achieved at POTWs, the resulting mass of pollutants in the POTW's effluent attributable to Merrimack Station's treated discharge is insignificant.

The following sections address and disprove the purported "actions" the Environmental Organizations assert EPA should carry out to further regulate PSNH's FGD waste stream.

Environmental Organizations: Page 8, First Paragraph

Environmental Organizations: Page 8, Second Paragraph

In addition, EPA should also take actions relating to the POTWs' NPDES permits to address this problem. *First, EPA should determine whether the POTWs receiving FGD wastewater from the Merrimack Station are violating their NPDES permits by doing so (and should immediately inform the POTW operators of its intent to undertake this determination). Between 2012 and 2014, Merrimack Station sent FGD wastewater to 5 POTWs: S. Portland, Attleboro, Lowell, Hooksett, and Franklin.* Fact Sheet at 24-25. As the table below indicates, it is our understanding that EPA Region 1 is the permitting authority for all of these facilities except the S. Portland POTW.

Table 1. POTWs that Receive FGD Wastewater from Merrimack Station and Have NPDES Permits Issued by EPA Region 1

POTW	NPDES Permit Date	Permit Number	Expired?
Attleboro	6/9/2008	MA0100595	Yes
Franklin	6/19/2009	NH0100960	Yes
Hooksett	8/5/2013	NH0100129	No
Lowell	9/1/2005	MA0100633	Yes

As the agency that issued the NPDES permits for these facilities, EPA should determine whether receiving Merrimack Station's FGD wastewater results in a violation of any permit terms, such as terms prohibiting the pass through of pollutants and/or prohibitions on the discharge of toxic amounts of pollutants or toxic components that will result in demonstrable harm to aquatic life. EPA should also investigate whether the POTWs are complying with any reporting requirements that may be triggered by the receipt of FGD wastewater from Merrimack Station, such as requirements to inform EPA Region 1 when new pollutants are introduced from an indirect discharger or when there is a substantial change in the pollutants introduced to the POTW.

PSNH/GZA: Contrary to the tone of, and requests for action within, the Environmental Organizations' comments, PSNH did not carelessly decide to transport FGD wastewater to POTWs, nor did the POTWs unsystematically accept the wastewater from Merrimack Station. Instead, PSNH and the various POTWs accepting FGD wastewater from Merrimack Station collaborated extensively to determine the best and most reasonable concept of transporting and managing treated FGD wastewater to ensure that no environmental criteria was being or would be exceeded. This analysis specifically included evaluations to verify that pass-through, inhibition, and/or interference violations would not likely occur. There is no legitimate challenge that can be advanced with respect to this issue.

It is not customary, nor is it necessary, for EPA to determine whether POTWs receiving treated FGD wastewater are violating their permits. NPDES permits issued by POTWs include a general condition that requires POTWs to determine what types and quantities of pollutants they can accept without causing environmental impact (i.e., pass-through, inhibition, and interference). POTWs with SIUs are required to develop scientifically-derived and legally defensive local limits using EPA-approved protocols (i.e., modeling pollutant impacts to a variety of performance, sludge management, and pass-through criteria). The fundamental principle associated with this approach dictates that the local limits derived from this process ensure that the POTW's discharge has no significant impact on the environment. The process for establishing local limits is described with greater specificity in the next section.

Environmental Organizations: Page 9, First Paragraph

Second, if EPA concludes that the current NPDES permits for these POTWs do not include terms that adequately address the receipt and discharge of FGD wastewater, then EPA Region 1 should modify the permits for these 4 POTWs and include new permit conditions to prohibit or adequately treat FGD wastewater from Merrimack Station. 40 C.F.R. § 122.63(a)(2) authorizes EPA to modify a NPDES permit under the following circumstances:

PSNH/GZA: No such action on the part of EPA is necessary. All NPDES permits (individual and general) issued to the POTWs contain conditions that ensure that each POTW evaluate its ability to control all sources of wastewater contributed to their system. There is a prescribed and uniform methodology for POTWs to follow to determine the need and extent of controls for non-domestic (i.e., industrial) wastewater sources. The approach involves the development of an Industrial Pretreatment Program, including local limits. The permits issued to POTWs do not include specific terms that address the receipt of certain non-domestic wastewater sources. Rather, the NPDES permits mandate that the POTW assess their ability to accept non-domestic wastewater based on a prescribed methodology, as generally described below:

- EPA recommends that POTWs base their local limits on the maximum allowable headworks loading (MAHL)² calculated for each POC. A pollutant's MAHL is determined by first calculating its allowable headworks loading (AHL)³ for each environmental criterion; the most stringent AHL would be the MAHL.

- The MAHL approach enables POTW s to calculate local limits taking into account the portion of the MAHL that is readily controllable (i.e., from industrial users (IUs)) and the portion that is not as easy to control (i.e., from domestic sources and background concentrations). The maximum allowable industrial loading (MAIL) is the portion of the MAHL available to IUs. It is based on sampling data from the collection system and at the POTW. Local limits are based on the allocation of MAILs as uniform concentrations that apply to all IUs, as mass allocations provided individually to each IU, or some combination of the two options.
- Calculating MAHLs is not the appropriate method to evaluate all pollutants. Pollutants may create collection system conditions that can be harmful to workers such as fires, explosions, corrosion, flow obstructions, high temperature, and toxic fumes. To address these issues, EPA recommends that POTWs consider various options. Developing and implementing local limits with the MAHL approach requires the following five basic steps:

1. Determine the POCs⁴
2. Collect and analyze data
3. Calculate MAHLs for each POC
4. Designate and implement the local limits
5. Address collection system concerns

It is evident from some comments that there is a poor understanding of the Industrial Pretreatment Program mechanics. The local limits established by the POTW based on system specific criteria apply to all discharges. That is, separate local limits cannot be established for individual users.

The POTWs that have evaluated the acceptance of treated FGD wastewater have completed analysis that demonstrates compliance with all environmental criteria including protection of water quality standards.

Environmental Organizations: Page 9, Third Paragraph

The NPDES permits for the Attleboro, Franklin, and Lowell POTWs were issued prior to 2012, when the Merrimack scrubber came online and began generating scrubber wastewater, and when Merrimack began sending this wastewater to POTWs. All of the information in the record regarding shipments of FGD wastewater from Merrimack to these 3 POTWs constitutes information “not available at the time of permit issuance,” 40 C.F.R. § 122.63(a)(2), since the POTW permits were issued before the scrubber wastewater was generated and shipped to the POTWs. Additionally, EPA states in the Fact Sheet that it believes that limits may be needed because the POTWs are not designed to adequately treat the toxic metals in the FGD wastewater, and thus the information “would have justified the application of different permit conditions,” id., namely, limits on receiving FGD wastewater.

PSNH/GZA: Treated FGD wastewater from Merrimack Station contains extremely low levels of POCs, specifically arsenic, mercury, and selenium. Typical industrial users contribute POCs in the milligram per liter (parts per million) range while treated Merrimack Station FGD

wastewater typically exhibits pollutants in the microgram per liter (parts per billion) and nanograms per liter (parts per trillion) range. POCs at these concentrations and associated low masses (pounds per day) contribute insignificantly to the MAIL of a typical POTW.

For example, Merrimack Station has an agreement in place with the Lowell Regional Wastewater Utility (LRWWU) to accept treated FGD wastewater. Working cooperatively with LRWWU, PSNH determined (i.e., self-certified) that the POCs in its hauled waste stream did include arsenic and mercury.⁵ Lowell conducts extensive monitoring to determine all of its POCs and its ability to accept the maximum quantities of these pollutants on a daily basis. These monitoring data are then input into a model that calculates MAHLs and MAILs. Subtracting out the "uncontrolled" domestic contribution, it results in an allowable loading rate for all other nondomestic wastewater source. To illustrate the relatively low levels of POCs contributed by PSNH's treated waste stream, contributions to the LRWWU of hauled waste from Merrimack Station was generally less than 1% of capacity for arsenic and mercury. Specifically, arsenic and mercury have been less than 0.6% and 0.08% of the MAIL, respectively, as conservatively calculated for these two POCs. Merrimack Station's impact to the LRWWU is insignificant with respect to the facility's capacity and ability to manage treated FGD wastewater and ensure that pass-through, inhibition, and interference does not occur.

Persons knowledgeable with the Industrial Pretreatment Program process recognize that introducing a different waste stream does not constitute "new knowledge," but simply requires a revised assessment to determine impacts (if any) to the system and to determine if revised local limits are necessary. To complete this assessment, Lowell has established a comprehensive internal monitoring program that has produced a representative and statistically valid database that determines the significance or insignificance of industrial wastewater contributions. In the case of Merrimack Station and its FGD wastewater, impacts to POTW operations and local limits were determined to be negligible.

Environmental Organizations: Page 9, Fourth Paragraph

Third, EPA should insist that each POTW that has received FGD wastewater from Merrimack Station revise its local pretreatment standards to prohibit Merrimack Station from sending FGD wastewater to the POTW. POTWs must adopt local pretreatment requirements to address local conditions and submit the plan for approval by the relevant permitting authority. See 40 C.F.R. § 403.8. The POTW is required to issue a permit, or the equivalent of a permit, to each industrial source discharging to the POTW. EPA should follow through on its suggestion, Fact Sheet at 49, of using local pretreatment standards to address the indirect discharge of FGD wastewater, which contains dangerous toxic pollutants that cannot be adequately treated by POTWs. As noted above, EPA has already found, in the proposed ELG rule, that toxic pollutants in FGD wastewater (including arsenic, mercury, and selenium) pass through POTWs in the absence of effective pretreatment, see 78 Fed. Reg. at 34,477, and EPA must not allow POTWs to continue to discharge Merrimack's FGD wastewater without adequate treatment or in a manner that causes or contributes to a violation of state water quality standards. EPA should make it clear in the Fact Sheet for this permitting action that the measures relating to POTWs

PSNH/GZA: Based upon the determinations and analyses described above, there is definitely no legal requirement, nor is there any material reason, for any POTW to revise its Industrial Pretreatment Program to accommodate treated industrial wastewater from Merrimack Station, or for that matter, from another IU. As requested by the Environmental Organizations, and in accordance with applicable regulations and the requirements of their respective NPDES permits, each POTW has already: (1) established any local limits necessary for POCs; (2) issued a permit (or equivalent) to Merrimack Station after evaluating its proposed FGD waste stream; and (3) determined the quality of the treated wastewater from Merrimack Station to be in full compliance with all applicable rules and regulations.

From 40 CFR 403.03, “(T)he term Pass Through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).” Analyses performed by the POTWs demonstrate that the concentrations and mass of pollutants in treated FGD wastewater will not result in pass through where permits have been issued referencing EPA's definition and standard practices.

Environmental Organizations: Page 10, First Paragraph

Finally, EPA should urge the State of Maine to take similar actions regarding the S. Portland POTW, namely: investigate whether receiving FGD wastewater from Merrimack Station violated any terms of the existing NPDES permit; revise the NPDES permit to include permit terms to prohibit receiving FGD wastewater if such terms do not exist in the current permit; require the S. Portland POTW to revise its local pretreatment standards, and include such revised conditions in any permit or similar document that the POTW has issued to PSNH. EPA should also ensure that Maine, and other states in New England, take these actions regarding any POTWs that receive FGD wastewater from Merrimack Station in the future.

PSNH/GZA: Similar to the State of New Hampshire and Commonwealth of Massachusetts, EPA and the State of Maine likely see no reasonable basis for deviating from EPA's established guidance regarding the development of an Industrial Pretreatment Program and Local Limits for the reasons stated herein. As explained above, the agency's guidance and regulations already require POTWs to evaluate their ability to control all sources of wastewater contributed to their system through the calculation and utilization of MAHLs and MAILs. The actions proposed by the Environmental Organizations are superfluous.

¹ Septage data from Allentown NH POTW (9/24/13) provided by NHDES

² A MAHL is the estimated maximum loading of a pollutant that can be received at a POTW's headworks without causing pass through or interference. It is the most protective (lowest) of AHLs (see definition) estimated for an individual pollutant.

³ An AHL is the estimated maximum loading of a pollutant that can be received at a POTW's headworks that should not cause a POTW to violate a particular treatment plant or environmental criterion. AHLs are developed to prevent interference or pass through.

⁴ A POC is any pollutant that might reasonably be expected to be discharged to the POTW in sufficient amounts to pass through or interfere with the works, contaminate its sludge, cause problems in its collection system, or jeopardize its workers.

⁵ Selenium is not a POC in the LRWWU wastewater system because selenium is not introduced to the Lowell POTW in a mass quantity (or concentration) that meets the criteria of a POC. Selenium is typically measured at below detection limits at various points at the POTW including the headworks. Receipt of FGD wastewaters from Merrimack Station has not impacted this reality.

EPA's Response to Section VIII.2:

As explained in Section 1 of Chapter VIII above, the New Hampshire legislature enacted RSA 125-0:11-18 in 2006, which required PSNH to install and operate a wet flue gas desulfurization (FGD) system at Merrimack Station to reduce air emissions of mercury and other pollutants. The scrubber was installed and placed into service in September 2011. The former owner of Merrimack Station, PSNH, reported that the scrubber system reduces mercury emissions by approximately 95 percent. *See* AR-1215, p. 10. However, by operating the FGD scrubber to remove pollutants from the flue gas, it also generates wastewater containing the pollutants removed from those emissions. PSNH installed a two-step treatment process to remove those pollutants.

The first step occurs within the Station's primary treatment system where chemicals are added to bind much of the material waste and the resultant solids are physically removed. The wastewater is then passed through an Enhanced Mercury and Arsenic Removal System (EMARS), a proprietary technology designed to reduce mercury and arsenic levels beyond concentrations typically achieved with traditional physical/chemical treatment. Second, a vapor compression evaporation system (VCE) system consisting of a falling-film evaporator (or brine concentrator) and forced circulation crystallizers is used to remove the remaining liquid, resulting in solid waste that requires disposal. The system currently operates as a zero liquid discharge system; however, at times, the Station has needed to transport treated FGD wastewater to local publicly owned treatment works (POTWs) for disposal. PSNH has sent wastewater from its primary and secondary treatment systems to various POTWs in New Hampshire, Massachusetts and Maine. *See* 2014 Fact Sheet, pp. 23- 26. The Station has never directly discharged FGD wastewater into the Merrimack River, the discharge canal, or the slag settling pond, because it is not authorized to discharge FGD wastewater under its previous NPDES permit.

On March 25, 2020, the current owner of Merrimack Station, Granite Shore Power (GSP), submitted a letter formally withdrawing its request for authorization to discharge wastewater generated from its flue gas desulfurization (FGD) system. *See* AR-1690. *See* Chapter VIII.1 above for a complete discussion of this issue. Ultimately, the Final Permit, like the previous permit, does *not* authorize the Permittee to discharge FGD wastewater directly to the Merrimack River. GSP has indicated, however, that they have sent several shipments of FGD wastewater to the Lowell Regional Wastewater Utility—a municipal POTW in Lowell, Massachusetts, and the Allenstown Wastewater Treatment Facility in New Hampshire—over a period of several days in November 2018. Since GSP took ownership of the Station in late 2017, there have been no other FGD wastewater hauling events. While GSP explained that it does not intend to use this method of disposal on a routine basis, EPA acknowledges that it has the flexibility to do so in the future,

so long as the facility meets any applicable pretreatment requirements. March 6, 2020 phone conversation notes between EPA and GSP (AR-1708).⁶

In the comments identified above (Comments VIII.2.1-.4), commenters expressed concern about potential adverse environmental impacts resulting from such shipment of FGD waste to nearby POTWs.⁷ As a primary note, many of the issues raised in these comments were submitted prior to promulgation of the 2015 ELGs and are premised on the lack of national pretreatment standards for FGD wastewater. Since these comments were submitted, the 2015 Rule was finalized and included new pretreatment standards applicable to FGD wastewater. The presence of these new standards renders several of the issues not relevant.

With regard to comments related to the Lowell Regional Wastewater Utility (LRWWU, “Lowell POTW” or “the Utility”), this Utility presents a prime example of how the pretreatment program within the NPDES program functions and ensures that indirect discharges to POTWs are adequately managed. The NPDES permit for the LRWWU, issued September 25, 2019, requires the Utility to “implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee’s approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR § 403” and that they “must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR § 405 et seq.” Part 403, cited in the Lowell Final Permit, also requires that national categorical pretreatment standards be met, 40 CFR § 403.6, which would include the pretreatment standards for the Steam Electric Category promulgated as part of EPA’s 2015 National Rulemaking. *See* 40 CFR § 423.16 (includes standards for FGD wastewater, among other wastestreams). As EPA stated in the 2015 Final Rule, “Pretreatment standards are self-implementing, meaning they apply directly, without the need for a permit. In this rule, the pretreatment standards for existing sources must be met by November 1, [2020].” 80 Fed. Reg. 67838, 67882 (Nov. 3, 2015); *see also* 40 CFR § 423.16(e).

Therefore, all POTW’s that receive indirect discharges from a categorical industrial user like Merrimack Station, including the LRWWU, must assure that all wastewater meets the applicable National Categorical Pretreatment Standards. This means that the FGD wastewater trucked to the Lowell or other POTWs must meet the requirements of 40 CFR § 423.16(e) for existing sources, including limits on arsenic, mercury, selenium, and nitrate/nitrite as nitrogen beginning November 1, 2020. *Id.* And as EPA noted in its 2014 Fact Sheet,

[p]rior to the applicability of the new categorical pretreatment standards, FGD wastewater delivered to a municipal sewage treatment plant would be subject to

⁶ EPA also notes that with respect to hauling treated FGD wastewater to local POTWs in the State of New Hampshire, Merrimack Station was authorized by NHDES to take such actions via a series of Industrial Wastewater Indirect Discharge Request Approvals in August of 2011. *See* AR-946.

⁷ Other comments received indirectly related to Merrimack Station’s practice of occasionally hauling FGD wastewater to local POTWs. *See, e.g.,* Comments from PSNH and UWAG. These other comments are either 1) adequately addressed through EPA’s response herein or 2) no longer relevant because they focused on the issue of whether FGD discharges would be authorized under the NPDES permit and the associated BAT limits. To the extent that the other comments relate primarily to the authorization of FGD discharges, they are no longer relevant to this permit proceeding. *See* Chapter VIII.1 above.

local pretreatment program requirements, including any local limits developed to prevent pass through of, and/or interference with, the treatment plant. *See* 40 C.F.R. § 403.5(c); 78 Fed. Reg. 34460, 34543.

2014 Fact Sheet, p. 49 n.37 (AR-1135). Of course, all POTWs that discharge into a surface water are required to meet all state and federal requirements, including satisfying water-quality standards.