

Non-water quality environmental impacts for FGD wastewater treatment options

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to:

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Sharon,

On Sept 13, I sent you an email summarizing estimated costs and pollutant reductions for several technology options for treating the FGD wastewater at Merrimack Station.

In response to your question about non-water quality environmental impacts (NWQI), we reviewed the solid waste generation (i.e., treatment solids that require transport/disposal) and increased electricity demand associated with operation of the treatment technologies.

The chemical precipitation technology option is estimated to generate 1,976 tons of solids per year, and require 339,017 kW-hr of electricity. Please keep in mind that these values are based on the characteristics of the FGD purge entering the treatment system, and thus the solids removal estimate includes solids that would have been removed if Merrimack Station had installed a settling pond or other system to meet the BPT effluent limits in 40 CFR part 423 (i.e., 30 ppm TSS). For this NWQI estimate, we did not calculate the fraction of solids that would've been removed by BPT-level treatment; however, since the FGD purge contains substantially more than 30 ppm TSS, the NWQI associated with BAT-level control options (e.g., chem precip, biological, or other technology) is only a portion of the 1,976 tons/year.

The technology option of chemical precipitation in conjunction with biological treatment is estimated to generate a total of 1,986 tons of solids per year (0.5 percent more than the chemical precipitation technology), and require 354,085 kW-hr of electricity (4.4 percent increase relative to chemical precipitation).