

4. SUMMARY

The existing MRY Unit 2 PM and Hg control technologies were found to not be capable of achieving the proposed emissions included in the April 24, 2023, MATS rule: filterable PM emissions limit of 0.010 lb/MMBtu and potentially 0.006 lb/MMBtu and Hg emissions limit of 1.2 lb/TBtu.

The evaluation of available PM control technologies found that an ESP rebuild would be required to achieve the proposed PM emission limit of 0.010 lb/MMBtu considering the need for adequate operating margin. However, testing to determine the baseline ESP inlet flow profile, ESP inlet and outlet emissions, and amount of PM removal occurring across the WFGD will likely be required in order for a vendor to complete a detailed qualitative study required to provide a PM emission guarantee. A baghouse will likely not provide sufficient operating margin for compliance with the more stringent 0.006 lb/MMBtu proposed emission limit; furthermore, this alternative was not considered to be economically feasible, and OEMs may not offer a PM emission guarantee with sufficient operating margin. A significant outage will be required to complete an ESP rebuild on MRY Unit 2, likely requiring the unit to be offline 12 weeks or longer as part of the retrofit. Due to current post-pandemic market delays and the limited number of experienced OEMs capable of completing an ESP rebuild, it is highly likely that the implementation of this large-scale capital project will take longer than the estimated 36-month implementation schedule.

At the time of this evaluation, no evidence or examples demonstrating that an operating lignite unit could achieve the proposed Hg emission limit of 1.2 lb/TBtu were found. As the Hg content of the lignite coal fired at MRY Unit 2 can range from as low as 4.8 lb/TBtu to as high as 17.4 lb/TBtu, a wide range of flexibility in Hg control to account for instances of firing high Hg seams of coal to consistently achieve adequate operating margin below the proposed Hg emission limit will be required. Additional testing will also be required to navigate the challenges of Hg speciation, flue gas temperature, flow profile/mixing, residence time, and coal variability for application on a lignite fired unit to establish if it is feasible to achieve a 1.2 lb/TBtu Hg emission rate with sufficient operating margin. Furthermore, PAC suppliers have indicated that testing would be required in order to obtain any guaranteed performance. Once testing is completed, recommended consumption/injection rates, required flexibility of the suite of Hg control approaches, and the subsequent costs of the modifications and/or new systems required to achieve adequate operating margin below a 1.2 lb/TBtu Hg emission limit on MRY Unit 2 can be developed.