casings, the roof, T/R sets, high voltage bs ducts, top end frames, intermediate roof beams, the top section of the inlet and outlet nozzles and all internal components of the existing ESPs will be removed, and replaced with new equipment. The flow distribution and correction devices in the inlet and outlet plenums would be replaced to optimize the flue gas and fly ash distribution to the casings. The hot and cold roofs would also be replaced as well to accommodate construction activities.

Before moving forward with rebuild, a structural integrity and thickness study should be completed on the entire structure to ensure that the steel has not thinned as a result of normal long-term option. The design of the support structure (casing, structural members, and determination of ESP loads to steel), support steel and foundation will need to be reviewed to verify if acceptable for reuse or if modifications are required for the weight change in the ESP casings as a result of the rebuild, which may result in additional reinforcement required. The existing ash handling systems would be reused without requiring any modifications for the incremental increase in the amount of ash collected. It would be assumed that the complete rebuild of the ESP casings and optimization of the flow distribution/collection devices in the inlet and outlet nozzles should be capable of achieving no net increase in the current pressure drop across the ESP and therefore would not require modifications or replacement of the existing ID fans.

The level of rebuild and repair to the existing ESP casings will require a longer construction outage , most likely requiring a twelve (12) week outage, if not longer. Limited access to the Unit 2 casings will also limit the construction sequence, and may cause delays, further extending the outage. Winter weather conditions experienced at the site could also prolong the construction process. Additional construction personnel would likely be required to complete work in multiple areas in an effort to reduce the outage duration.

With this option, the PM emissions are estimated to potentially achieve an emission rate of 0.008 lb/MMBtu. However, vendors would likely have to complete a more detailed qualitative study in order to provide a guarantee and would require baseline testing to qualify ESP inlet and outlet emissions.

2.2. OPTIONS TO REACH 0.006 LB/MMBTU

To achieve PM emissions that would allow for compliance with the more stringent proposed standard, a baghouse would be required. It should be noted that a baghouse will likely not provide sufficient operating margin to achieve the proposed 0.006 lb/MMBtu emission rate. It will likely be challenging to obtain a guarantee below 0.006 lb/MMBtu from baghouse OEMs. However, a baghouse is not considered to be economically feasible[1] and is therefore not evaluated further. The baghouse installation options that could be considered, described below, and the expected timeline for implementation of this control option, described in Table 2-2, are included for reference only.

- Conversion of ESP to Baghouse:
  - The existing ESP casings would be reused and ESP internals and all roof mounted equipment would be removed. A vertical partition wall, running in the direction of gas flow from the hopper bend line to the tube sheet, would be constructed in the center of each ESP casing.
- Polishing Baghouse (Downstream of ESP):
  - The existing ESP would continue to operate. Due to the reduced inlet ash loading, a polishing

[1] A high-level estimation of the cost effectiveness of a baghouse retrofit on MRY Unit 2 is approximately $162k/ton, based on the annualized capital and O&M costs ($/yr) divided by the annual reduction in annual emissions (ton/yr).