

April 29, 2024

115kV line. A new relay panel for 115kV line and transformer protection in the existing unit 4 scrubber building was accounted for in the estimate basis. A new 4.16kV ESP switchgear was accounted for in the unit 4 ESP power distribution centers (PDC) to distribute power to 4.16kV/480V station service transformers for the unit 3 and 4 ESP units. Each unit then has local 480V switchgear, motor control centers (MCCs), panelboards, and local uninterruptable power supply (UPS)/direct current (DC) as required to support the ESP unit electrical loads.

For the fabric filter it was assumed the existing 3 and 4 scrubber auxiliary electric system has electrical loading capacity to support the new fabric filter electrical loading. New power feeds were accounted for from the scrubber units power distribution centers (PDC) to distribute power to 4.16kV/480V station service transformers for the unit 3 and 4 fabric filter units. It was assumed the existing scrubber 4.16kV switchgears had spare breakers that would need to be replaced or retrofitted due to relaying and arc flash requirements. For the new air compressors low voltage variable frequency drives (VFDs) would be required provided by the compressor vendor for motor starting. Each fabric filter unit PDC then has local 480V MCCs, panelboards, and local UPS/DC as required to support the fabric filter unit electrical loads.

For both fabric filter and ESP options the following estimate basis was used. That construction power would be available from the existing auxiliary power system. A local ground grid would be created for the ESP and fabric filter that would tie into the plant's existing ground grid. A spare 4.16kV/480V station service transformer was included. Unit 3 and 4 electrical systems were electrically separated at the 480V level and below. It was the plant has existing paging system, telecom, fire protection alarm systems that would be extended to the area. For estimating purposes the ESP or fabric filter vendor supplied all the wiring, raceway, lighting local from the ESP/fabric filter back to the PDCs.

5.1.2.2 Controls

For the ESP option, included in this rough estimate are the management, engineering, equipment, shipping, and field support costs to commission remote input / output (IO) cabinets into the existing distributed control system (DCS). This estimate assumes that existing DCS vendor on record is GE. This estimate includes the engineering and procurement of quantity four remote IO cabinets to be brought back into the existing DCS system. The four remote IO cabinets will contain a total of 845 system hardwired points (20% spares included) and datalink interface to supervisory system. Included in this estimate are spares and startup replacements that the field support may require while commissioning the system. estimate includes time for field support to power check, establish communication to existing system, and startup.