

Apri 29, 2024

For the fabric filter option, included in this rough estimate are the management, engineering, equipment, shipping, and field support costs to commission remote IO cabinets into the existing 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 825 system hardwired points (20% spares included). Included in this estimate are spares and startup replacements that the field support may require while commissioning the system. The estimate includes time for field support to power check, establish communication to existing system, and startup.

5.1.2.3 Structural

The conceptual design, layout, and material quantities for the ESP structure are developed per the plan and elevation views of the component provided within the vendor (SEI-Group) quote. The proposed structural layout plan and elevation views for the ESP structure are shown in drawings SKS003 and SKS004 respectively. The ESPs are located in the available space towards the South of the units. It is assumed that inlet branch lines are added to the existing flue duct at the elbows upstream of the stack for each unit at the existing elevations. The outlet from the ESP's would branch into the existing flue gas ducts just upstream of the reducers and prior to the main lines entering the stack.

The structural estimate includes the material quantities for the gas flue ductwork, duct support steel, ESP building steel, foundation concrete, and concrete reinforcement. The ESP building steel quantities are developed based on information regarding steel densities for a similar size plant. The ductwork quantities are developed based on the lengths calculated in the conceptual layout and the perimeter for the assumed duct cross section. The calculated surface area is then multiplied by an estimated weight per square footage value which is a proprietary metric developed based on experiential data from multiple past projects to develop the total tonnage of gas flue duct steel. The ductwork is assumed to be supported by support steel frames that are approximately 75' in height. The total length of the ductwork is multiplied by an estimated weight per cubic foot value which is a proprietary metric developed based on experiential data from multiple past projects to develop the total tonnage of support steel below the ductwork. The foundation is assumed to be constructed using reinforced concrete spread footings on piles. The ESP building foundation is assumed to consist of spread footings on piles. Each spread footing consists of a pedestal and pile cap with five (5) piles per footing. The piles are estimated to be of 18" diameter concrete extending approximately 60' below grade. The foundation for the duct supports is estimated to be a 5'