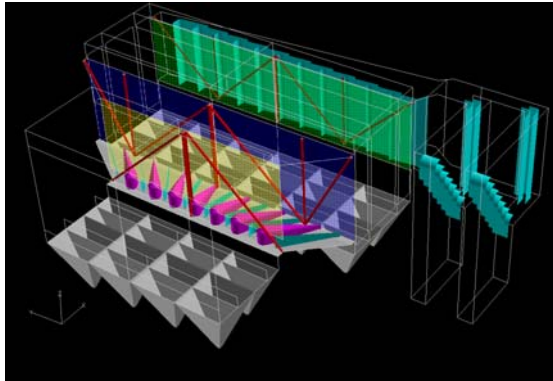


### Air Flow Through Tie-In Duct Between Two ESP Units

#### Background

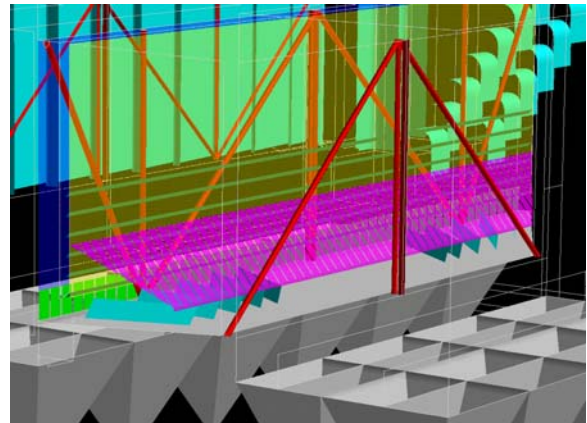
Ash deposition in the tie in duct between two ESP units required regular removal possible only when the power plant was not in operation. CFD was used to evaluate various baffle configurations which might reduce ash deposition.



PROPOSED BAFFLE SYSTEM

#### Approach

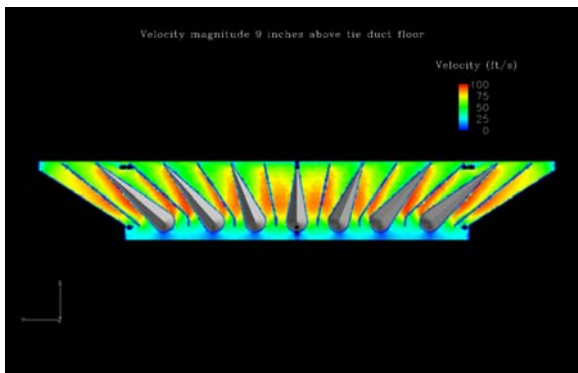
CFD models were created of the existing and proposed conditions. The existing condition model was used to validate the modeling approach and as a basis for comparison with the proposed condition. The two models contain over 3.5 million cells and resolve structural features smaller than six inches.



EXISTING BAFFLE SYSTEM

#### Objectives

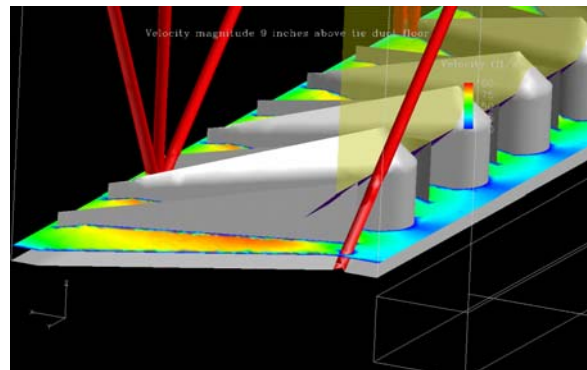
The objective of this study was to use CFD (fluent) to develop a new baffle system in the tie in duct to reduce ash deposition without adversely impact the performance of the second ESP.



PLAN VIEW SHOWING COMPUTED VELOCITIES

#### Results

Model results show that the proposed set of teardrops will increase air speed through the tie in duct and improve the velocity distribution at the second ESP unit. Additional simulations showed that adequate velocities are maintained during periods of low flow through the ESP. The proposed modifications result in only a minor increase in system wide pressure drop.



COMPUTED VELOCITIES WITH PROPOSED TEARDROP BAFFLES