

IFGR DUCT DESIGN FOR A POWER GENERATION PLANT

PURPOSE: Review stress and deflections due to wind and seismic combined with maximum operating temperature

HLA was responsible for the structural analysis and design of an IFGR (Induced Flue Gas Recirculation) duct. A finite element model was created to accurately review the stress and deflections due to the wind and seismic loads. Wind loads governed over seismic. A buckling analysis was also performed for reach wind direction to ensure that no local plate buckling would occur. Snow and ice loads, along with live loads, were also included. The base plate thickness and anchor bolts were sized based on reactions from the FEA model. After the analysis and design were executed, a complete set of fabrication drawings were generated for the duct.

- Wind loads per ASCE-7
- Linear elastic stress analysis
- Buckling analysis
- Base plate design
- Anchor bolt sizing
- Bolt reactions
- Fabrication drawings

