

Piping and Supports Engineering

Qualifications and Experience

Vision and Values

To create a partnership between Fauske and Associates LLC (“Fauske”), the power generation industry, and the industrial processes industry to be able to promptly and effectively fulfill piping and supports design and analysis needs. Fauske, working with its parent company, and affiliates will provide solutions for piping and supports needs, for existing and new facilities around the world, while focusing on its key values:

- Customer Focus & Innovation
- Speed & Passion to Win
- Teamwork & Accountability

Locations

The team consists of experienced engineers located in offices around the globe. These include Cranberry Woods, PA (HQ); Madison, PA; Dedham, MA; Windsor, CT; Charlotte, NC; Rock Hill, SC; and Madrid, Spain.

Our team also can re-locate resources for short-term and long-term on-site support depending on customer needs.

Qualifications

- Professional Engineer (PE) licenses in various states including KS, MA, MI, MO, NC, PA, PR, SC, and VA; other state licenses can be obtained as needed.
- Engineers experienced with a variety of piping and supports software
- Engineers experienced with nuclear power plants, fossil plants, and industrial facilities, including Standard Design Process (SDP).
- Experienced with and eligible to obtain unescorted access to nuclear power plants
- Power plant systems, design, and programs experience

SME and Experience Areas

The team includes experts and experienced engineers in the areas of

- aging management,
- ASME III (class 1 and 2/3) and B31.1 power piping design and analysis,
- ASME III NF pipe support design and analysis including snubbers and ASME O&M in-service testing,
- ASME NB-3200 advanced finite analysis, element analysis piping, and components,
- ASME Section XI piping degradation evaluation,
- ASME welding materials,
- B31.3 process piping analysis,
- buried piping design and analysis (including specifications and materials),
- closed loop cooling system design,
- erosion/ corrosion,
- fatigue analysis,
- flow accelerated corrosion (FAC),
- fluid network analysis,
- HDPE piping,
- pipe support fabrication and construction,
- piping time histories analysis,
- and thermal expansion dynamic effects and vibration, among others.

Operating Plants Projects

Below is a list of previous work performed for the operating plant fleet by the team:

Piping Analyses

- Buried Piping Analyses (metallic, plastic, and polyethylene)
- Carbon Fiber-Reinforced Polymer Piping Repairs using ASME Section XI Code Cases N-871
- Fatigue Analysis (NB-3200 and NB-3600 Analysis Methods)
- Flow Accelerated Corrosion Evaluations
- Fossil Plant Assessments
- Hydrodynamic Time-History Blowdown Force Analyses
- Loss of Coolant Analyses
- Pipe Break Analyses
- Piping Degradation Evaluations using ASME Section XI Code Cases N-513, N-597, N-806, and N-869
- Seismic Analyses (Response Spectrum, N411 Damping, Time-History Methods)
- Static (Deadweight, Thermal, and Pressure) Analyses
- Thermal Stratification Analyses (Surge Line)
- Water Hammer and Vibration Analyses

Piping Projects

- Aging Management or Life Extension Projects
- Auxiliary Line Piping Snubber Reduction Projects
- Design Basis Reanalysis or Update Projects
- Evaluations for Thermowell and RTD (i.e., resistance temperature detector) Replacements / Repairs
- Extended Coastdown Operation Projects
- Extended Leak-Before-Break Projects
- Flexible Power Operation Projects

- Fuel Transition / RTSR (i.e., Reload Transition Safety Report) Projects
- Loose Parts Evaluations
- Minimum Wall Evaluations
- MSIP (i.e., Mechanical Stress Improvement Process) Applications
- Piping Design or Piping Layout Modification Projects
- Piping or Valve Leak Repair Analysis
- Piping System Vibration Analysis
- Reactor Vessel Baffle Plate Upflow Conversion Projects
- Replacement Steam Generator Projects
- Steam Generator Snubber Elimination/Reduction Projects
- Support Displacement, Binding, or Interference Issues
- Support Gap Evaluations / Missing, Damaged, or Nonconforming Shim Issues
- Support Snubber Failure Evaluations
- SWOL (i.e., Structural Weld Overlay) Applications
- Temporary or Permanent Lead Shielding Evaluations
- Uprate Projects
- Valve Replacements

Examples of Successful Projects

- Emergent analyses of piping components worn by flow accelerated corrosion. The evaluations enabled postponement of piping replacement allowing the customer to avoid unexpected outage extension and proactively plan the most cost-effective solution.
- Evaluation of a feedwater system piping change that involved re-routed and replacement piping installation and the addition of a heavier and fast-acting containment isolation valve in a large bore feedwater piping system for a power uprate modification. Piping stresses and

pipe support loads were successfully assessed for increased seismic effects from the re-routed piping and heavier valve and for fluid transient increased loads due to the fast-acting valve.

- Analysis and installation of several hundred feet of HDPE (thick wall plastic) piping and associated pipe supports as part of a cooling service water temporary jumper. New large bore piping and pipe supports were analyzed and qualified in a non-safety related turbine building application.
- Evaluation of the secondary side steam generator re-route, and replacement piping attached to steam generators in support of a Steam Generator Replacement project. Affected systems included large bore main steam, feedwater and steam generator blowdown piping and pipe supports.
- Evaluation of extensive piping re-routes and piping replacement for a plant modification to:
 - Replace safety related primary component cooling water heat exchangers – Large bore piping and pipe support configurations that were designed and analyzed included tube side service water piping and shell side primary component cooling water piping.
 - Replace feedwater heaters – Large bore turbine building piping and pipe support configurations that were designed and replaced included tube side feedwater and condensate piping and shell side heater drain and extraction steam piping.
 - Replace the main feedwater pumps – Large bore piping and pipe support configurations that were designed and replaced included suction side condensate piping and discharge side feedwater piping.