

# Compressor Design Studies

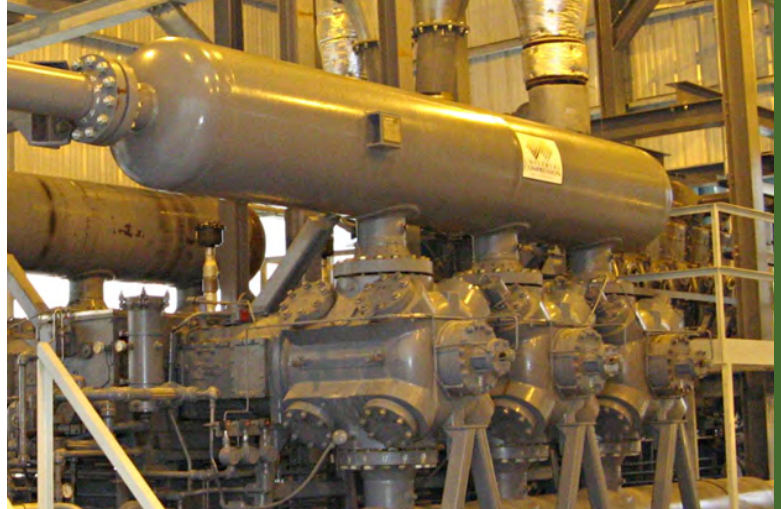
SOUTHWEST  
RESEARCH  
INSTITUTE®

Southwest Research Institute® (SwRI®) has designed and analyzed over 12,000 compressor gas stations since 1955. From pulsation control to skid finite element analysis (FEA) and from field support to transient surge analysis, SwRI's design staff has more than 300 years of combined gas compression experience.

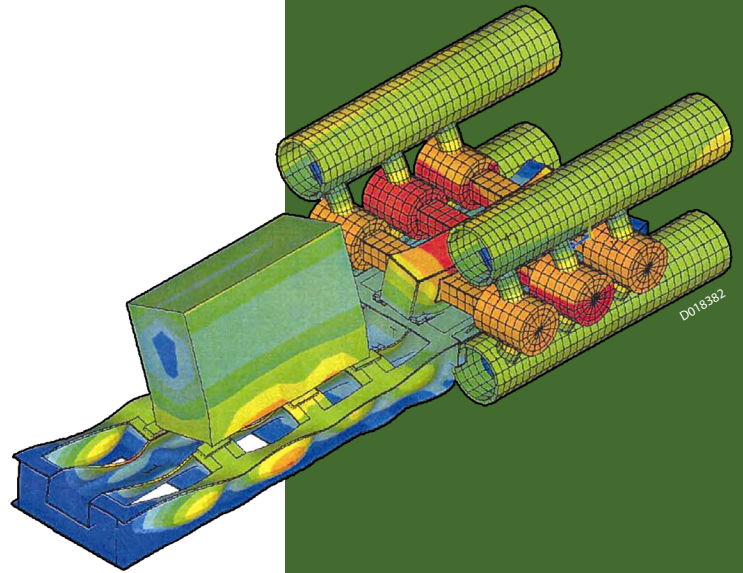
## Capabilities

Compressor design study capabilities include:

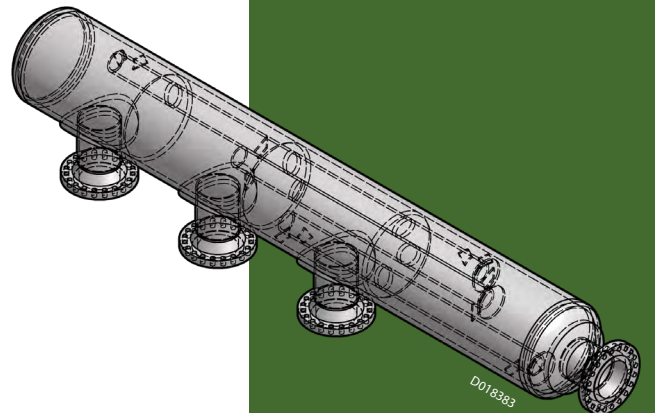
- Optimized pulsation and mechanical solutions for best performance and lowest installed cost
- Field-validated best-in-class analysis software for accurate API 618 analysis
- Advanced low-loss pulsation control technologies customized for client systems
- API 618 pulsation and mechanical analysis
- Mechanical FEA for compressor manifold design
- Mechanical piping review
- Advanced pulsation control designs
- Skid/foundation analysis
- Dynamic valve analysis
- Onsite field vibration and performance testing
- Transient surge analysis
- Large structures FEA



D018381



D018382

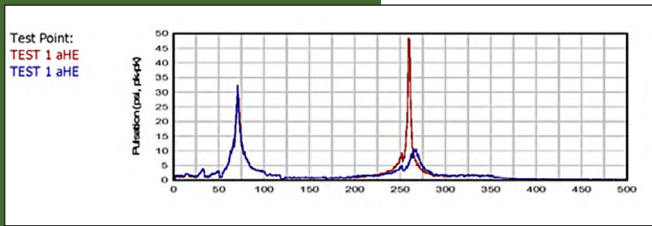
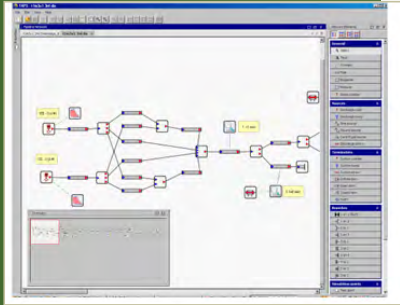
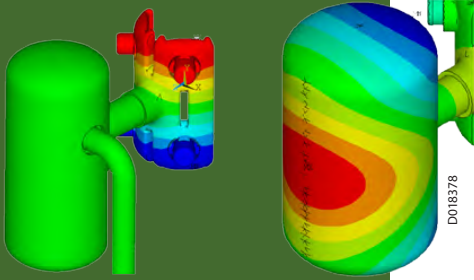


D018383

# Advanced Pulsation Transient Fluid Solver

The SwRI TAPS code is the industry-leading, time-based, non-linear code for complete pulsation solutions. Features include:

- Accuracy in both frequency response and amplitude of pressure pulsations
- Impulse response modeling for expedited bottle designs
- Avoidance of resonance throughout piping system
- New methodology for 3-D acoustic modal analysis
- Exact cylinder nozzle resonant frequency determination through calibrated 1-D gas passage representation
- Flexible designs to accommodate one-bottle and two-bottle filters
- On-skid layouts to reduce overall footprint
- Incorporation of suction scrubber volumes as secondary filter volume
- Single and dual lateral designs to suit operating company needs
- Orifice plate and bottle design optimization for low pressure drop
- Fast turnaround schedule for piping design projects



We welcome your inquiries.  
For additional information,  
please contact:



**Eugene L. "Buddy" Broerman**  
Sr. Research Engineer  
(210) 522-2555  
[eugene.broerman@swri.org](mailto:eugene.broerman@swri.org)

**Benjamin A. White**  
Sr. Research Engineer  
(210) 522-2554  
[benjamin.white@swri.org](mailto:benjamin.white@swri.org)

Fluids and Machinery Engineering Department  
Southwest Research Institute  
6220 Culebra Road • P.O. Drawer 28510  
San Antonio, Texas 78228-0510

[swri.org](http://swri.org)  
[machinery.swri.org](http://machinery.swri.org)



SOUTHWEST RESEARCH INSTITUTE

Benefiting government,  
industry and the public through  
innovative science and technology