

# Gas Turbine Silencing Systems



Powerfully Engineered Solutions



**ATCO** *Noise Management*

*HIGGOTT-KANE Division*

# Effective Intelligent Leading Edge Designs



One of two  
150 ft tall  
exhaust stacks  
supplied by  
ATCO/HK for  
a 550 MW  
station in  
Ontario,  
Canada.



## A Sound Decision

For more than 30 years, **Higgott-Kane, a Division of ATCO Noise Management** has been providing quality GT silencing systems around the globe. Our customers recognize the **Higgott-Kane** name as the **hallmark turn-key company for combustion turbine silencing solutions**. We have the experience, knowledge and financial strength you need in a business partner.

**With results guaranteed.**

## The ATCO/Higgott-Kane Advantage

Higgott-Kane began providing combustion turbine silencing systems in 1977. In 2005, we became a division of ATCO Noise Management, the **premier provider of acoustical systems and full-service industrial noise control** in North America. This unique blending provides our customers with the **most complete range of acoustical products and services** available in the market.

We are proud to be part of the **ATCO Group of Companies**, an organization with **\$7.7 billion in assets worldwide**. We have the ability to provide Performance Bonding and Errors and Omissions Insurance resulting in customer peace of mind. For all our projects, **customer satisfaction is backed by our performance guarantee**.

## O.E.M. Experience

Higgott-Kane has enjoyed a reputation for **quality products** and **outstanding customer service** for more than three decades, and this continues as part of ATCO Noise Management today. We are **the company leading O.E.M's turn to for engineered noise control systems**, and we are proud to have worked for such industry frontrunners as:

ALSTOM



HITACHI

Solar Turbines

DRESSER-RAND

Rolls-Royce

SIEMENS

# GT Silencing Solutions

## Intake Systems

Increasingly stringent noise regulations demand *accurate, innovative* and *high-performance solutions*. With ATCO/Higgott-Kane, excellence and quality are not optional extras. Our expertise spans **hundreds of intake systems** in operation around the globe. Our scope of supply includes:

- Intake silencers
- Air filtration
- Intake anti-icing systems, including our ATCO/HK proprietary anti-icing
- All associated ducting, flexible joints, steelwork

## Exhaust Systems

We meet the challenge of designing quality exhaust silencing systems for today's most advanced engines. Our exhaust systems are used on *simple cycle, combined cycle* and *co-generation* applications for *power generation, natural gas compression* and *offshore platforms*, with installations in all key geographic markets. We provide:

- Exhaust silencers for the most stringent requirements
- Lined/unlined ducts and stacks
- By-pass diverter dampers
- Expansion joints

## Aero Derivative Package Systems

Our *extensive experience meeting the noise control needs* of the *oil and gas industry* is echoed in our repeat customer list. *Proven* silencing solutions include:

- GT Enclosures with all associated auxiliary systems such as ventilation, fire detection and suppression, and electrical components
- Compressor station buildings designed to achieve the most demanding acoustic and structural requirements
- Complete combustion air inlet systems with air filtration, ducting, standard or custom designed silencing
- Exhaust systems including silencers, stacks, expansion joints and support steel

Latest generation HK intake anti-icing system



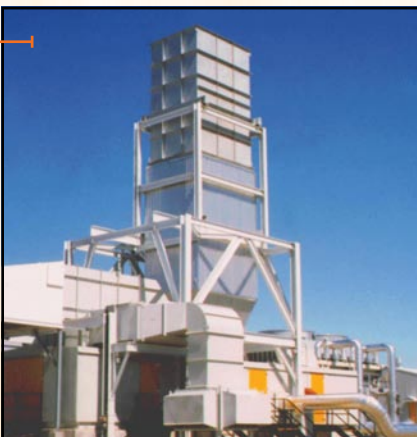
Four intake and exhaust systems for Siemens V84.2 turbines installed at SMARR Oglethorpe



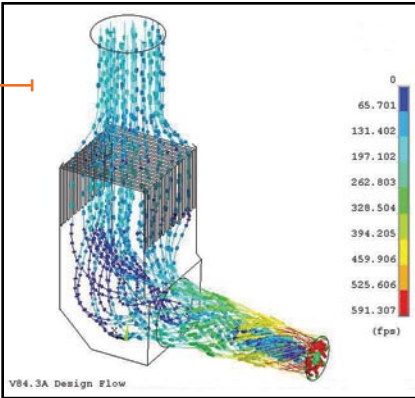
One of three 215 ft tall exhaust stacks installed at an 880 MW power plant in Ontario



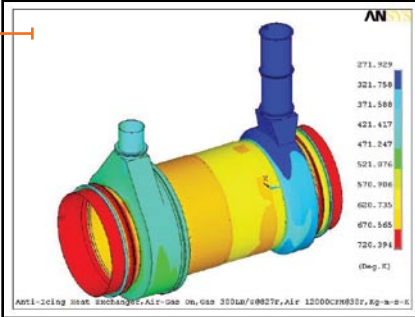
One of multiple TransCanada Pipelines package system projects including intake, exhaust, enclosure and ventilation



CFD analysis of a V84.3 exhaust system, completed by our in-house mechanical engineering department



FEA analysis of HK intake anti-ice heat exchanger



On-site Technical Field Assistance



In-house engineers test, analyze and design effective GT silencing solutions



# Full-Service Capability Expert Advice

## Turnkey and Retrofit Services

For larger noise control projects, we offer the **stability, speed, and confidence** of turn-key services and single source responsibility. We can take on your overall plant acoustic performance risk and provide the **entire acoustic EPC scope** with guaranteed compliance with regulations. From consultation to installation, ATCO/Higgott-Kane provides the **sound advice** and **guaranteed abatement results** needed to make a big project into a **big success**.

## In-depth Analysis, In-house Engineers

At ATCO/Higgott-Kane, we provide **cost-effective, high performance solutions** designed to fix **your** problems and suit **your** bottom line.

As a premier turnkey combustion turbine silencing company, our toolkit contains **everything needed** to successfully take your project from site analysis and silencer design, to fabrication and supply, and finally installation and post-construction testing. Our full-service in-house capabilities include:

### TESTING AND MODELING

- In-duct flow and noise measurement, exhaust system integrity analysis
- Low frequency analysis, vibration analysis, finite element analysis
- Computational fluid dynamics analysis
- Inventor and 3D solid models
- CADNA and in-house silencer acoustic modeling

### QUALIFIED PROFESSIONALS

- In-house acoustical, mechanical and structural engineers
- In-house design teams, estimators, Q.A. Inspectors and Project Managers
- Rigorous quality assurance program registered to ISO 9001-2000
- ISO pre-qualified global suppliers and manufacturers
- Global fabrication supervision and installation experience

This **single source responsibility** mitigates risk, improves cost control, and speeds up project completion. Our clients know, **ATCO/Higgott-Kane will be there.**

**Every stage of the way.**



GE Frame 7FA exhaust system retrofit to meet critical low-frequency noise limitations during start-up and at base load

# Global Experience Commitment to Quality

## Industry Experience

We provide our services in the global marketplace, with a worldwide installed base of over **500 combustion turbine exhaust systems** and **400 air intake systems** for equipment ranging from 1.5 MW to 278 MW.

### We can:

- Design, build and install lined or unlined ducts or stacks to suit any environment—land or sea
- Meet difficult or unusual structural requirements—our tallest stack extends 248 ft above grade
- Satisfy stringent acoustic requirements, including excessive low frequency noise;
  - 34 dBA at 560 ft
  - 70 dBC at 400 ft
- Silence GT noise with turnkey service and single source responsibility from survey to completion—anywhere in the world



HRSG exhaust silencers installed at Tenaska for GE Frame 7FA turbines



Five Dresser-Rand DR-61 package systems designed to be retrofitted within tight space restrictions on an offshore oil rig off the coast of Mexico

## Global Capabilities

ATCO/Higgott-Kane offices can be found on three continents, supported by a network of pre-qualified suppliers and construction contractors from around the world. ***No matter where you are, what type of turbine you have, or the level of silencing required, we can help.***

**It's that simple.**



## Research and Development

ATCO/Higgott-Kane ***never stops moving forward.*** We keep pace with the changing gas turbine market through our commitment to research and development, ***evaluating and refining our products to achieve optimum results.*** Our ***demand for design optimization*** is met through ***vigorous laboratory testing*** and ***post-installation site measurements,*** resulting in products that meet all acoustic and pressure drop requirements at the best possible price. We work hard to silence the noise of industry.

**With ATCO/Higgott-Kane, the future sounds good.**



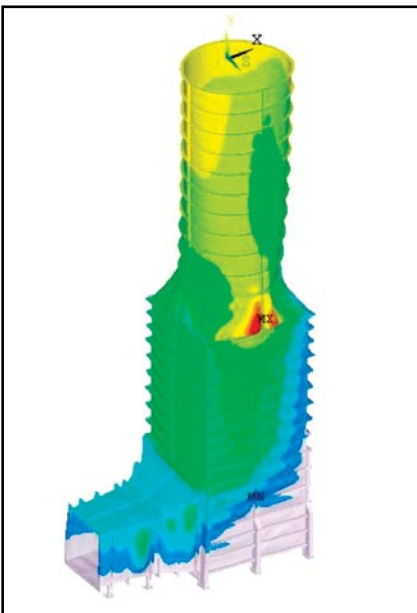
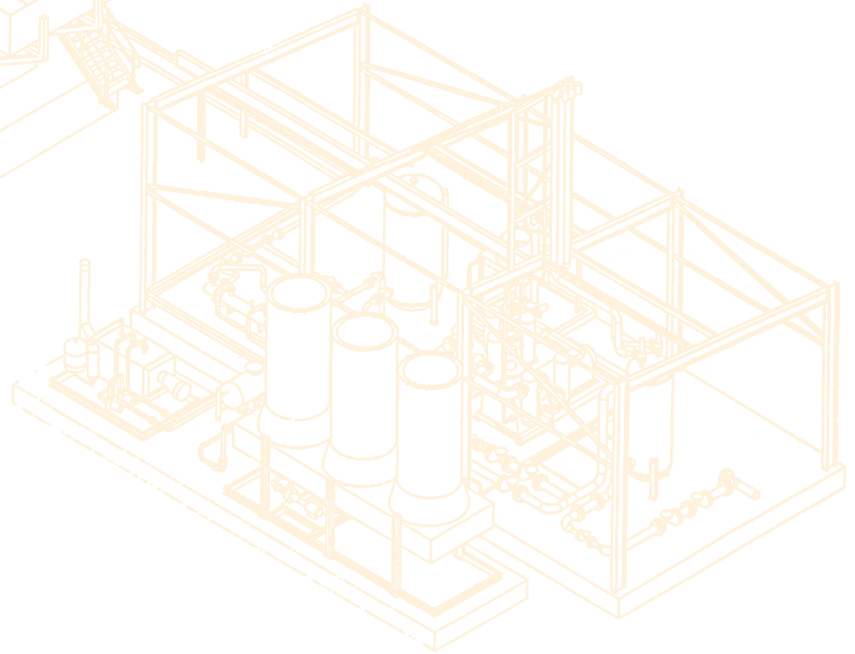
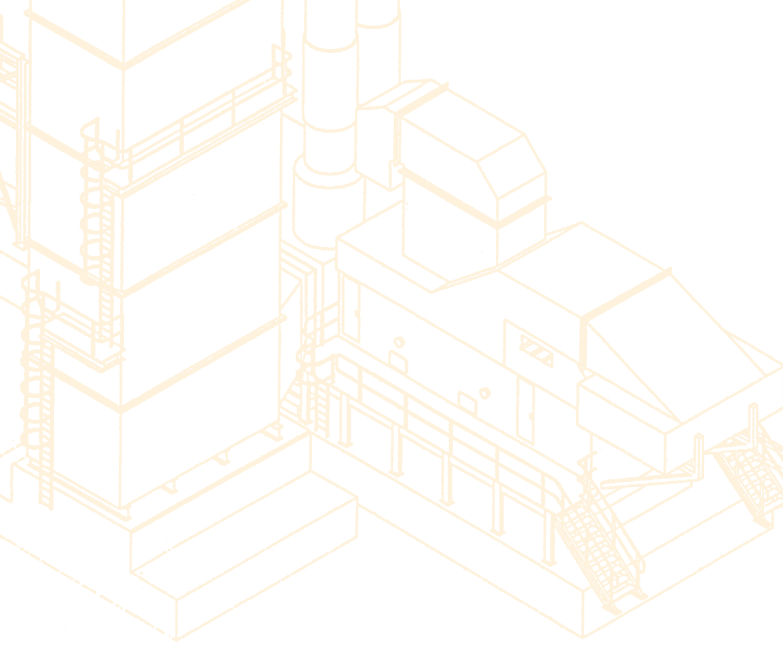
Exhaust system installation for a Siemens 501FD turbine in Venezuela

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**Succeed in silence**

Call toll free 1-866-580-0600, or visit our website at [www.higg-kane-atco.com](http://www.higg-kane-atco.com) today.

**Powerfully Engineered Solutions**

