

CECO Peerless



RETROFIT DeNO_x TECHNOLOGIES AND AFTERMARKET SERVICES

**IMPROVE YOUR PLANT'S
EMISSIONS PERFORMANCE**

CECO Environmental is your partner for equipment and environmental protection. Our team eliminates nitrogen oxide (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs) 24 hours a day, 7 days a week, 365 days a year. We work with industry leaders in power generation, oil and gas and industrial manufacturing to reduce and eliminate air pollutants. We take pride in helping our customers solve complex challenges, providing a more efficient process that protects our shared environment.

OVER
150
YEAR
LEGACY

19
HERITAGE
BRANDS

30+
INDUSTRIES
SERVED

28 CORE
TECHNOLOGIES

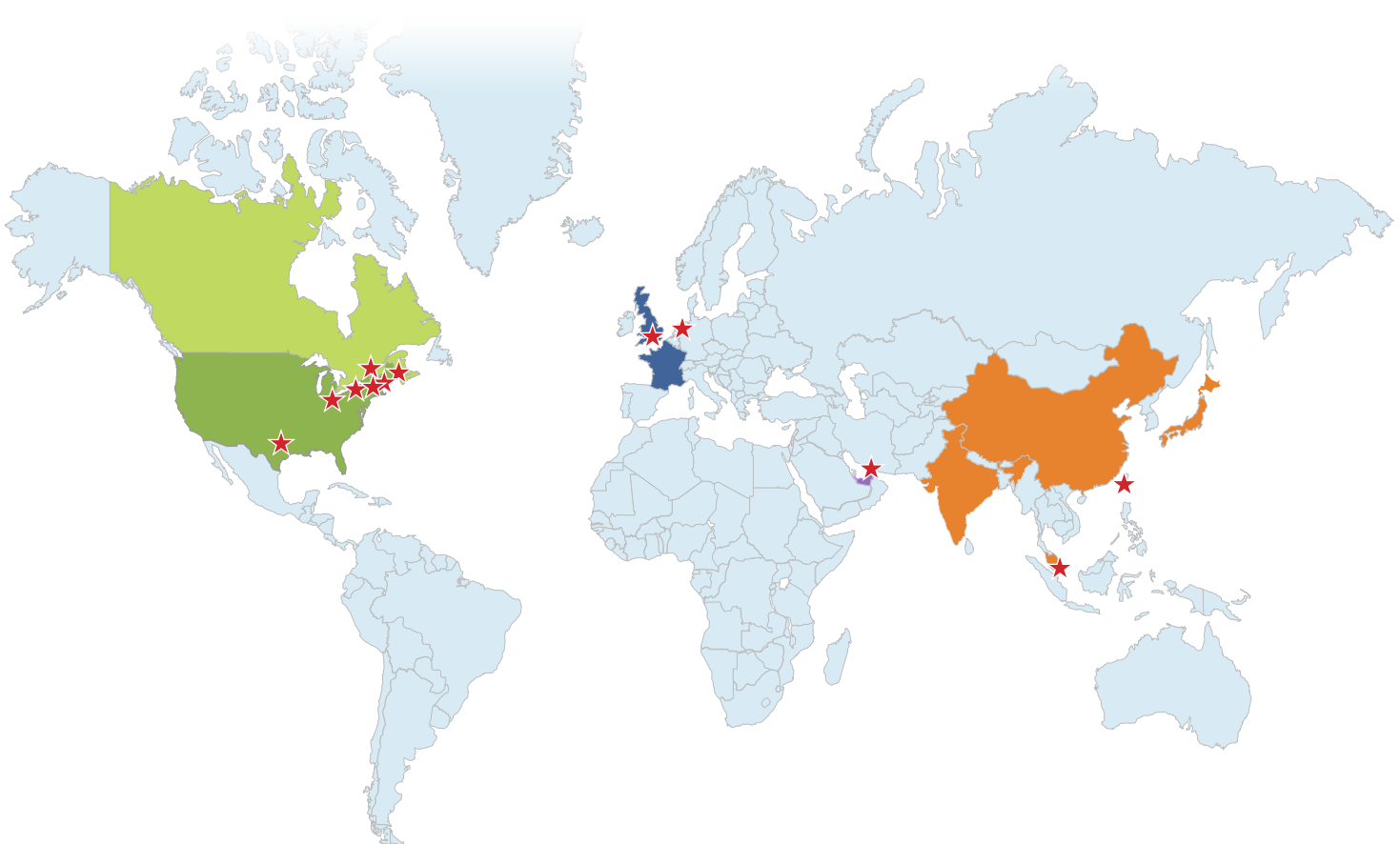
221
PRODUCTS
WORKING TO
IMPROVE THE WORLD

CECO Peerless has been protecting our shared environment and solving the most complex emissions issues for over 85 years.

A global leader in compact, engineered, high-efficiency, processing, separation, and filtration equipment, CECO Peerless primarily serves the oil and gas production, gas pipeline transportation and power generating industries around the world. Over the past 15 years alone, we've served the energy market through system installations for thousands of customers globally, resulting in the reduction of more than 6 billion pounds of NOx. **That's the equivalent of removing nearly 2 million cars and their emissions from the road.**

CECO Environmental leads a global suite of energy brands that increase plant efficiency. We manufacture an arsenal of technologies to enable equipment and environmental protection.

CECO Aarding CECO Burgess-Aarding CECO CCA CECO Effox-Flextor CECO Peerless



CECO Peerless designs turnkey solutions for power generating industries around the world.

- Over 85 years of experience
- Thousands of successful installations and millions of hours of engineering excellence
- Expertise from concept through commissioning stages
- Experienced in technology, process engineering and turnkey solutions
- Worldwide delivery capability and vast network of local/regional/global partners
- Global presence, multi-cultural teams with localized approach to attain clean, safe, efficient and sustainable solutions within budget and schedule

AMMONIA INJECTION GRIDS UPGRADE TO EDGE® AIG FOR GREATER EFFICIENCY AND LOWER NO_x

When you see high ammonia slip and problematic NO_x performance, your first thought might be to replace the catalyst. Upgrading your ammonia injection grid (AIG) may be a more profitable answer.

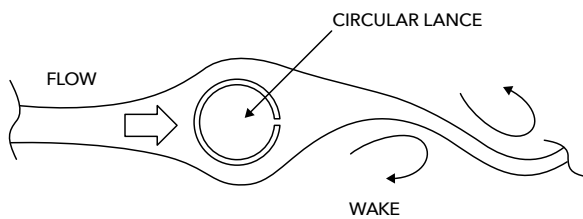
Our patented Peerless EDGE® AIG lance design improves ammonia distribution and is inherently less susceptible to plugging, which lets you:

- Maximize NO_x reduction
- Minimize NH₃ slip
- Reduce ammonia consumption by 20%-40%
- Extend catalyst life by 1-2 years
- Reduce time spent cleaning plugged AIG holes
- Reduce overall system footprint—better performance in half the distance
- Operate for a longer period of time on your current regulatory permit

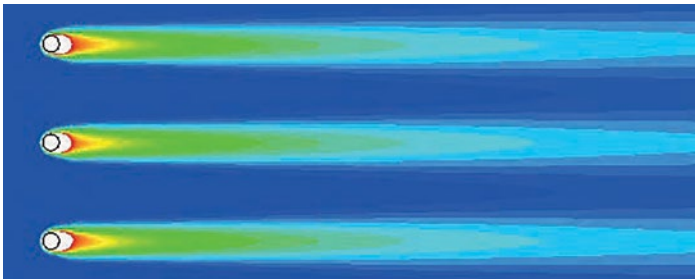
AMMONIA OPTIMIZATION SERVICES

- › Peerless EDGE® AIG retrofit
- › AIG tuning
- › Ammonia system cleaning, services and maintenance
- › Ammonia testing

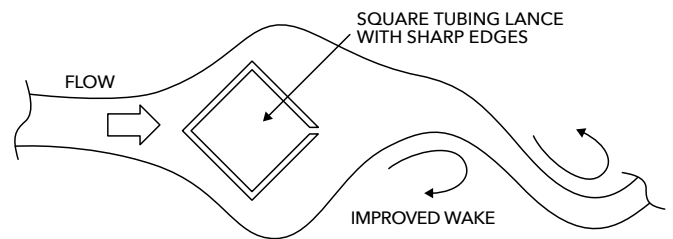
INCOMPLETE NH₃ DISTRIBUTION WITH CIRCULAR LANCE



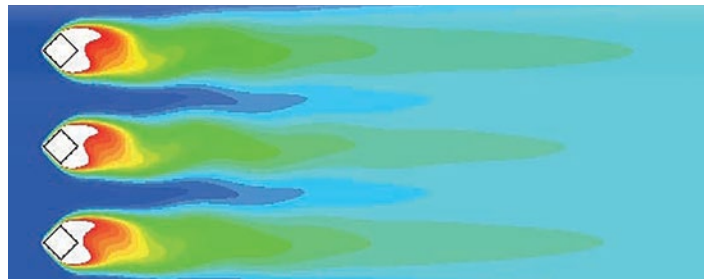
INCOMPLETE MIXING



COMPLETE AMMONIA DISTRIBUTION WITH EDGE® AIG



COMPLETE MIXING





MAXIMIZE YOUR CATALYST

Catalyst maintenance is critical for optimizing SCR system performance. CECO Peerless provides a full range of services to maximize your catalyst, including performance testing, cleaning, replacement, and storage. Our SCR engineers help you analyze the remaining potential of your catalyst and forecast performance.



CATALYST SERVICES

- › Turnkey catalyst replacement
- › Catalyst management and storage
- › Catalyst cleaning
- › Catalyst testing

Turnkey Engineering and Installation

CECO Peerless delivers comprehensive DeNOx system solutions, including design, supply, installation supervision, and start-up services for SCR systems. Our dedicated in-house computational fluid dynamics (CFD) department draws upon 30 years of experience to engineer the best solution for your plant. Through complete integration of AFCU, catalyst, and system processes, CECO Peerless provides a single-source performance warranty.





AMMONIA FLOW CONTROL UNIT SKIDS

UPGRADE YOUR AMMONIA VAPORIZATION CAPABILITY

If your plant's ammonia vaporization and storage equipment controls are aging, your AFCU skid may need attention. CECO Peerless can upgrade, repair or replace your ammonia vaporizer skid.

Often rebuilding the vaporizer to prevent liquid carry over and tripping problems can breath new life into an aging ammonia system.

We also offer upgraded control logic and methodologies to maximize control and improve ammonia slip.

VAPORIZER PERFORMANCE SERVICES

- › Controls upgrades
- › Skid repairs, upgrades, and replacements
- › Vaporizer rebuilds
- › Reagent conversion
- › Direct injection retrofit

HIGH QUALITY FILTERS

PROTECT YOUR TURBINE ASSETS

Clean, dry gas is critical for protecting your gas turbines. With our roots in high efficiency separation of gas to remove both solid and liquid contaminants, CECO Peerless is your trusted source for high-quality filters with high separation efficiency.

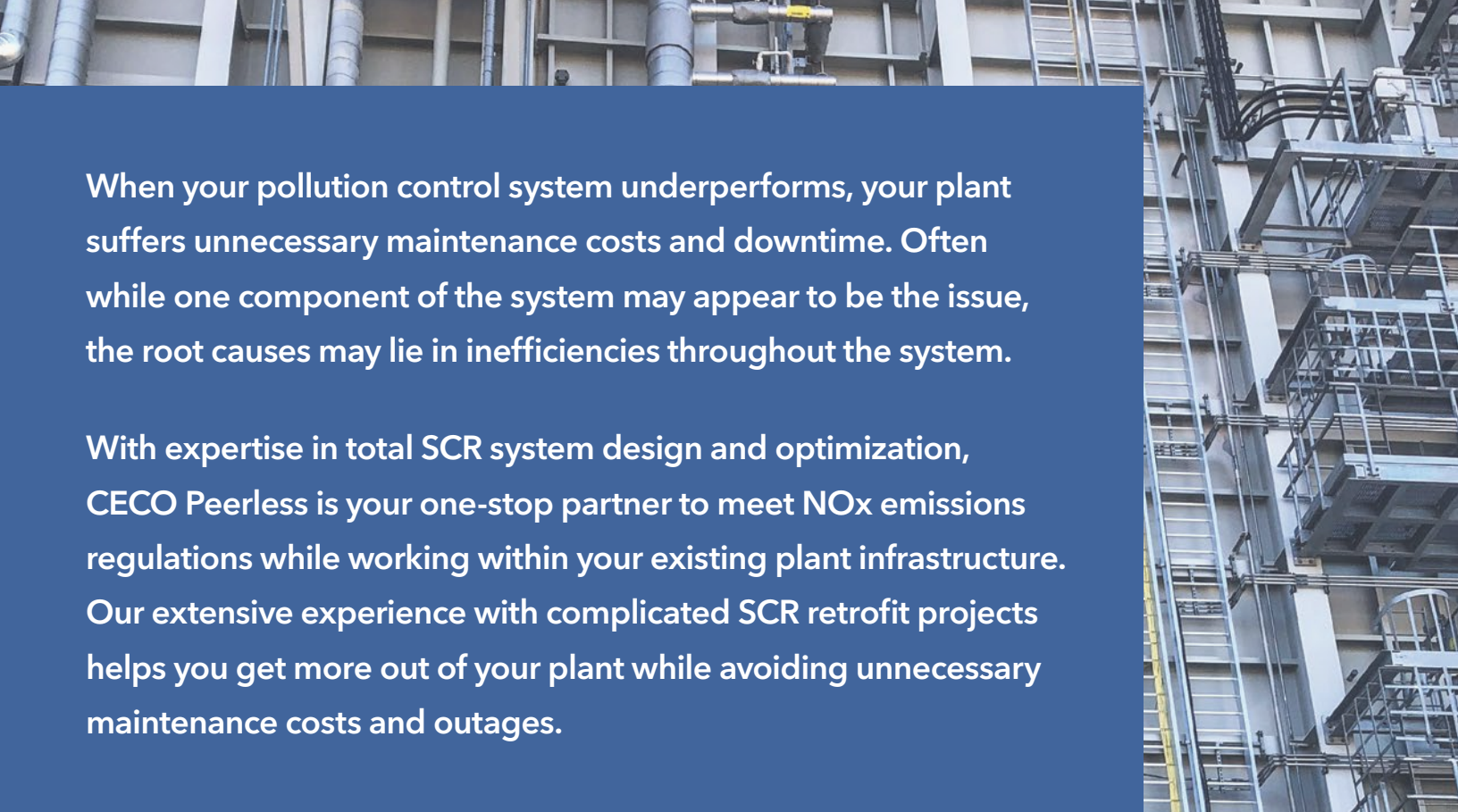
Fuel gas skid and filter separator packages can save you money in the long run.

PEERLESS PRESSURE PRODUCTS

- › Vessel rerate
- › Internals upgrades
- › Steam drum efficiency upgrades
- › Controls packages
- › Filters / gaskets
- › Onsite technical support

“CECO Peerless provided the technology, engineering services and project management, which made the entire project self-sufficient. They handled the removal of all of the lances per unit, fabrication and a seamless installation without a safety infraction or incident. We are very satisfied with the finished product and expect to operate at a much more efficient level.”

– Jonathon Miller, Maintenance Manager, CLECO



When your pollution control system underperforms, your plant suffers unnecessary maintenance costs and downtime. Often while one component of the system may appear to be the issue, the root causes may lie in inefficiencies throughout the system.

With expertise in total SCR system design and optimization, CECO Peerless is your one-stop partner to meet NO_x emissions regulations while working within your existing plant infrastructure. Our extensive experience with complicated SCR retrofit projects helps you get more out of your plant while avoiding unnecessary maintenance costs and outages.



CECO IS YOUR PARTNER FOR EQUIPMENT AND ENVIRONMENTAL PROTECTION.

CECO Environmental's suite of energy solutions, including our patented EDGE® Ammonia Injection Grid (AIG) and RASCR™ Vaporizer Skid, in conjunction with our dampers, silencing and combustion technology, will help you optimize your facility and avoid unnecessary maintenance costs and downtime.



CECO Aarding and CECO Burgess-Aarding

CECO Aarding and CECO Burgess-Aarding provide customized solutions based on a proven track record in design, engineering and manufacturing of gas turbine exhaust systems and acoustical systems. Both new systems are provided as well as upgrades and retrofits.



CECO CCA

CECO CCA takes pride in providing premium, high-efficiency combustion and emissions control systems. CECO CCA's exclusive technologies reduce nitrogen oxides (NOx), unburned carbon and carbon monoxide emissions. Customized SCR systems including direct injection, urea-based and reverse flow style systems.



CECO Effox-Flextor

With over 5,000 installations globally, CECO Effox-Flextor is the global leader in the design and manufacture of dampers and expansion joints for use in flue gas and process air handling systems. Our team includes a highly skilled staff of engineers, designers, fabricators and field service personnel to ensure the performance of your product solution.

Products and solutions:

- Dampers
- De-NOx solutions
- Expansion joints
- Gas turbine exhaust systems
- Low-NOx burners (LNB)
- Selective catalytic reduction (SCR systems)
- Selective non-catalytic reduction (SNCR)
- Separation-filtration technologies