Case Study

Boiler Layup

Focus:
A power company that delivers clean, affordable, reliable energy and is the state of Florida's top producer of solar energy per customer.

Problem:
The customer needed new nitrogen generation systems for its boiler layup process.

Solution:
They upgraded to a Parker NITROSource series nitrogen generator and paired it with a Parker CDAS Heatless desiccant compressed air dryer with pre and after filtration to feed the generator.

Impact:
The company was able to protect their HRSG systems from corrosion during their wet and dry layups.

Project Name: Boiler Layup
Location: Southern United States

Summary

A power company in Florida was looking for a safe, economical, and convenient method to protect their HRSG systems during layups. Due to their existing system not being able to meet the specifications required by the equipment, a new system was needed to ensure efficient operations at their facility. The customer chose to partner with Parker due to product reliability, ease of installation, lead time, and low total cost of ownership with our equipment.

Challenge

Nitrogen generators that do not hold purity, pressure, or flow can cause an array of issues during the boiler layup process such as corrosion, pitting on the gas and water sides of the HRSG, corrosion fatigue, and stress corrosion cracking. Replacing the previous nitrogen generators in a timely manner was crucial to protect this equipment. Additionally, the power company has multiple HRSG systems onsite and they needed to be able to transport the Nitrogen generation system easily.

Solution

A local Parker distributor worked with the power company to correctly size a new nitrogen generation system based on the layup time and size of the HRSG. A Parker NITROSource nitrogen generator and a CDAS heatless desiccant compressed air dryer were selected to ensure flow, purity and pressure requirements were satisfied. The new system was configured to deliver -40F PDP clean, dry compressed air to the generator, while also delivering nitrogen to the HRSG @ 99.9% purity. Most boiler layup applications follow the ASME specification CRTD-66, which states the Nitrogen purity should be 99.6% inside the boiler. For ease of mobility, the systems were mounted to a steel skid to assist with transportation between the multiple HRSG systems onsite. With the upgraded Nitrogen generation system, the customer is able to ensure that their HRSG system is properly protected from pitting, corrosion and stress cracking issues moving forward.

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NITROSource

Advanced technology for industry-leading performance

A product of Parker's worldwide R&D resources that featuring a host of intelligent engineering solutions, unique technology and a sleek space-saving design, NITROSource is designed to work more efficiently for customers. Purely and simply, it's better inside and out.

NITROSource offers a number of significant advantages over delivered gas options, as well as traditional generator designs. So when you're considering on-site supply, NITROSource is the benchmark specification for maximum performance and lowest lifetime cost.

Highest efficiency, highest output nitrogen gas generator

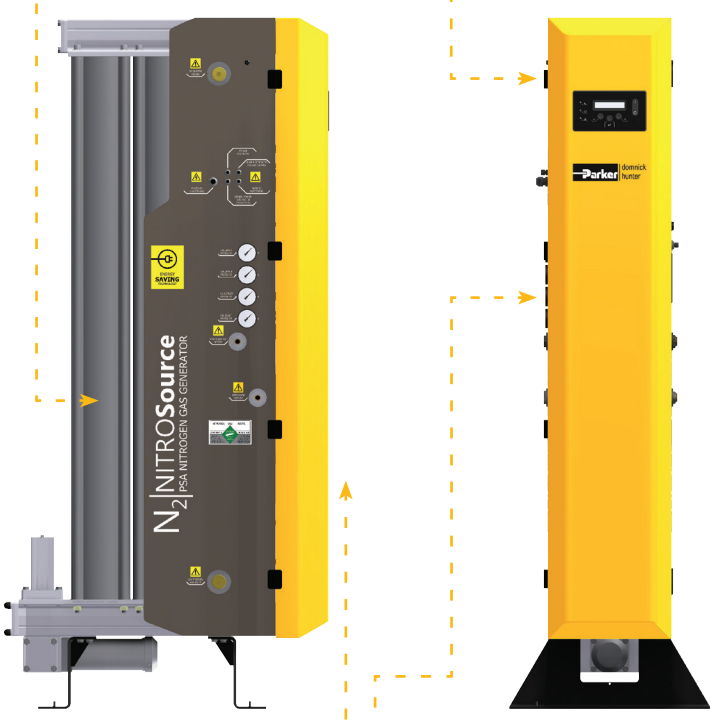
Developed through extensive research and design, utilizing the latest flow modelling technology, materials and controls system, NITROSource is the highest efficiency nitrogen generator. Using less compressed air, it produces nitrogen at the lowest unit cost.

Carbon Molecular Sieve (CMS)

NITROSource employs the most robust, highest efficiency CMS, which is the material that removes the oxygen from the compressed air stream. This is the 'engine' of the generator, and the source of valuable performance benefits: more gas for less compressed air, reducing energy consumption; a very long working life – saving money on replacements; and less CMS per unit of gas produced, enabling a more compact unit.

PSA technology
utilizing carbon molecular sieve - designed for over 10 years of operational life.

Easy-to-use control panel
plus mass flow controller and economy stand-by mode.



Modular design
for expandability, and compact footprint for maximum versatility and optimum use of factory space.

Unique energy saving technology
exactly matches compressed air flow with nitrogen gas outlet flow and purity, for lowest energy consumption.

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CDAS HL

Clean Dry Air System

Parker domnick hunter Clean Dry Air System. Innovative engineering and technology.

Combining sophisticated OIL-X filtration technology with an optimised drying system, the CDAS is designed to deliver consistent high performance over an extended period. Air quality is third party validated to ISO 7183 and ISO 8573-1, so you can be completely confident of your compressed air quality.

ENERGY SAVING TECHNOLOGY (EST)

Standard on all units, (EST) automatically adapts dryer operation to the ambient inlet conditions and compressed air demand, resulting in reduced maintenance and significantly lower energy costs - often with savings of up to 85%.

- Power on and fault indication
- Dryer and filter service indicators
- Dewpoint display
- Fault relay: power, dewpoint alarm and sensor failure
- 4-20mA dewpoint re-transmission

HMI display screen

Large screen display offering a wealth of clear, useable, real-time information.

High strength desiccant

Cartridges are snowstorm filled with high strength desiccant that has a 5-year lifetime, providing consistent drying, regeneration and dewpoint.

Pre-mounted filters

New series OIL-X filters engineered to provide validated ISO 8573-1 performance.

Threaded top end-cap

Threaded end-cap enables the straightforward replacement of the desiccant cartridge.

Purge setting

The purge air can be set at minimum operating pressure easily without the need for specialist tools.

Corrosion protected column

With a 10 year guarantee, to ensure a long operational life.

Full bore internal flow paths

Featuring optimized flow management for reduced pressure drop.

Full bore cylinder valve system

Low pressure loss valves provide full air flow and minimal back pressure, while robust cylinders extend service intervals.

Base plate

Designed for pallet trucks, allowing for easy, time-saving installation.

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