

# THE NATIONWIDE BOILER STEAMLINES

MARCH 2020



## WHAT'S INSIDE

### PAGE 2

Future of the Boiler Industry  
COVID-19 Response  
A Zero Emissions Option  
Employee Spotlight

### PAGE 4

Control System Special  
475 HP Boiler Tested at 7ppm NOx  
The Importance of Deaerators  
Rep Spotlight: NBW

### PAGE 6

Golf Tournament Postponed  
Facility Improvements  
Upcoming Events  
Inventory Spotlight

## CATASTAK EXCEEDS COMPLIANCE: SOURCE TEST RESULTS AT 1 PPM NOx

Protecting the environment by reducing the production of greenhouse gases is a major consideration in today's day and age. For more than a decade Nationwide Boiler has been providing a solution to support these efforts and reduce NOx output by as much as 99% for boilers and other fired equipment applications.

Although our guarantee is often 5 or even 2.5 ppm, there have been multiple projects that have exceeded our expectations and are operating successfully at just 1 ppm NOx. Let's take a look at a recent project in Southern California.

Partnering with MDH Boiler Service, Nationwide Boiler provided a retrofit solution on an existing 475 hp firetube boiler operating at 110 psig steam. A

new burner with a NOx output of approximately 40 ppm was supplied, along with our CataStak™ SCR for NOx reduction to a guaranteed 5 ppm. The CataStak provided a proven solution that would allow the end-user to comply with stringent NOx limits without any operational compromises (high burner FGR, reduced boiler turndown, unstable combustion or unreliable operation).



The anhydrous ammonia based SCR system was built in a vertical flow configuration and installed on the roof of the building directly above the boiler outlet. This project was somewhat unique for an SCR application, with lower than normal exhaust temperatures requiring a more rigorous design to support the chemical reaction.

The anhydrous ammonia based SCR system was built in a vertical flow configuration and installed on the roof of the building directly above the boiler outlet. This project was somewhat unique for an SCR application, with lower than normal exhaust temperatures requiring a more rigorous design to support the chemical reaction.

the building directly above the boiler outlet. This project was somewhat unique for an SCR application, with lower than normal exhaust temperatures requiring a more rigorous design to support the chemical reaction.

During installation of the new SCR system, a 350 hp mobile steam plant rental was utilized to avoid unnecessary downtime. Once complete, a source test was performed and revealed extraordinary results of just 1 ppm NOx with 1 ppm ammonia slip.

The success of this project came as exciting news, solidifying future orders that will also support these efforts in reducing the company's overall production of greenhouse gas emissions.

**"...INTEGRITY, DEPENDABILITY, REAL CUSTOMER SERVICE."**





## REFLECTING: FUTURE OF THE BOILER INDUSTRY

Lately I've been thinking about the sustainability of our company, specifically in regards to the use of a fossil fuel (natural gas) as the current fuel choice for our rental boilers. Although much cleaner and less harmful than coal or oil firing, natural gas is still a fossil fuel that emits CO<sub>2</sub> (a greenhouse gas) into the atmosphere. While we currently do our part by reducing tons of greenhouse gas emissions with our CataStak™ SCR and EconoStak fuel efficiency products, we still need an alternate non-fossil fuel to replace the "transitional" fuel of natural gas. Will it be bio-fuels, hydrogen-fired, solar, electric, hydro, or another alternative energy solution?

One thing I know for sure is that the current production of steam cannot be displaced easily or quickly with these alternative energy solutions. Steam as we know it is used not only for heating, but for producing many everyday products like food, beverages, paper, plastics, pharmaceuticals, chemicals, gasoline, textiles, glass, paint and electrical generation.

We just purchased our first electric boiler as an addition to our rental fleet because like electric cars, it is zero emissions – no air permit required. However, the electrical consumption or operating cost can be daunting: 600 amps at 480 volts to produce just 2,000 lbs/hr of 150 psig steam. How much will we pay to be green, and where does that electricity come from? The fossil fuel power plant in someone else's backyard, right?

When it comes down to it, our real hope for true climate change might depend on the success of the ITER (International Thermonuclear Experimental Reactor), a nuclear fusion megaproject going on in Southern France right now. Construction started in 2013 with expected completion by 2025, and the project is funded and run by seven member entities: The EU, India, Japan, China, Russia, South Korea, and the United States. The goal of the ITER is to demonstrate the scientific and technological feasibility of fusion energy for peaceful use. This could very well be the answer and a true game changer for future generations to come.

Maybe instead of boilers with combustion burners, they will have a little fusion reactor that heats the water and makes steam. Wouldn't that be cool!? Not really, it would be hot as h\*\*\*.

## COVID-19 CALLS FOR REMOTE OPERATIONS

Emergency rental projects have been common so far this year, and we haven't even made it to the second quarter yet. When an emergency need arises, we know exactly what to do; we've been doing it for over fifty years. Our rental sales team moves swiftly, the equipment gets serviced, shipment is coordinated, and so on. But what happens when an unprecedented emergency arises, one that is unfamiliar to most everyone not just in our industry, but everyone throughout the world?

On a global level we are currently experiencing a disruption in our lives – both personal and professional. As with many others throughout the world, we've had to modify our operations to help slow the COVID-19 outbreak while still maintaining our commitment to our customers. These are truly uncharted waters and we are fortunate to have a team of dedicated personnel who have modified the way they normally work to allow for continued day-to-day operations in support of our customers.



In an effort to help flatten the curve, we have enacted a semi-remote operation with many employees working from home and a small crew at the office handling essential functions. We are following recommendations of the CDC and Federal Government, halting all non-essential travel, wiping and sanitizing commonly touched surfaces, and practicing social distancing.

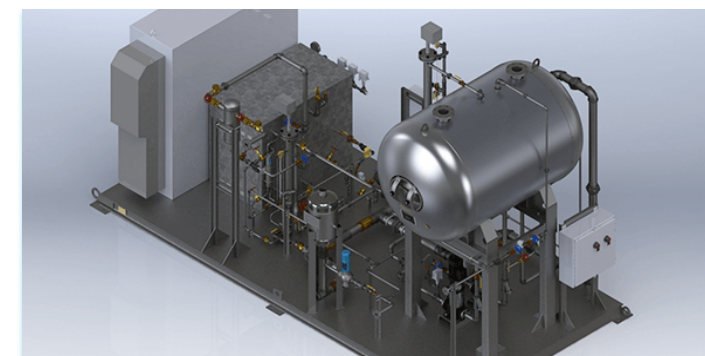
We at Nationwide Boiler realize that this global situation affects many businesses and individuals, and we are here to provide as much support as possible while practicing the necessary measures to slow the outbreak. Our customers depend on us, and we will not let them down even in these uncertain times. We will continue to monitor the situation and provide updates via our social media channels as they arise.

## A ZERO EMISSIONS OPTION: ELECTRIC BOILERS

We are so used to the traditional way of steam generation through the burning of fossil fuels like natural gas, oil, and coal. Over the years, advances in technology have provided solutions to cleaning up the products of combustion, however, we haven't quite gotten to a zero emissions solution with the use of a standard fuel-fired burner. In actuality, zero emissions can be achieved locally by utilizing electricity in lieu of those fossil fuels.

With a growing move away from the use of fossil fuels in California, we've seen an increased interest in electric boilers for both temporary and permanent applications. An electric boiler can be a great solution for facilities with large electric loads or an excess of electricity available for use. Furthermore, without the burning of fossil fuels, there are no products of combustion or greenhouse gases being produced, which means no air permits are required. A major cost and headache avoided.

For these reasons, Nationwide Boiler will soon have an electric boiler available for rental applications. Having an electric boiler in our rental fleet will provide an option for customers with excess electricity available, and a solution for customers wanting a zero emissions option. One of the major advantages of renting from Nationwide is that we maintain a large fleet of rental boilers that range greatly in size, allowing us to support a wide range of customers. This new addition of an elec-



tric boiler will diversify our fleet even further and allow us to support an even wider range of customers.

This 50 HP, 150 psig electric steam boiler is a complete skid-package configured similarly to the standard gas-fired skid-packages we have in our current rental fleet and stock inventory. It includes a pre-piped and wired duplex feedwater system, blowdown separator, and single point electrical POC calling for a 480 VAC, 3 phase, 60 HZ power supply. It is a smaller package than our standard mobile steam plants and will require a much smaller available footprint for installation.

We are excited to get this unit out on its first rental and support customers with this zero emissions offering. And if all goes as planned, you may see more of these units in our rental & stock boiler fleet in the future.

## EMPLOYEE SPOTLIGHT: SHALINI KUMAR

Shalini Kumar is our Senior Accountant and Payroll Specialist, and is a valuable asset to the Nationwide Boiler family. Family is important to us here at Nationwide, and Shalini's dedication to her family is no exception. As a proud wife and mother, she loves spending as much time as she can with her two boys and her husband.

Sports have been a big part of Shalini's life for as long as she can remember. In high school she played volleyball, and her dedication to the sport was noticed by the Cal State East Bay Volleyball Coach. Shalini was asked to join their team and although she declined, she always kept her passion for the sport. Shalini instilled

her love of sports to her children, as they now participate in soccer, basketball, and badminton.

The outdoors also has a strong



presence with the Kumar family, and hiking is one of their favorite hobbies. Shalini and her family have made a goal to travel to all 50 states and hike the various beautiful locations out there. Their most recent family vacation was a cruise to Alaska last summer. While there, they visited the Ride on the White Pass and the Yukon Railway, and explored many waterfalls and historic sites. A great experience for the entire family.

We'd like to thank Shalini for all her hard work as she continues to play a valuable role in our company. We are happy to have her as part of our family.



## 475 HP, 150 PSIG STOCK SUPERIOR BOILER SUCCESSFUL TEST FIRE AT 7 PPM NO<sub>x</sub>

As a West Coast rep and stocking distributor, we are proud to continually stock brand-new Superior package firetube boilers in a range of sizes and configurations.

Our smaller systems (47.5 & 119 hp) are complete and factory integrated with a feedwater system and blowdown separator. Our larger systems (up to 800 hp) are fully built and in-stock, with the burner unmounted on some units to offer a more customized solution that can meet many unique needs.

We just completed the successful test fire of our 475 hp Superior firetube boiler with a 7 ppm NO<sub>x</sub> Webster burner. This unit, designed at 150 psig, is ideal for customers in California who must comply with stringent NO<sub>x</sub> requirements or for companies who have an internal goal of lowering their overall greenhouse gas emissions.

This boiler is in-stock and available now for customers with quick shipment requirements.



## CONTROL SYSTEM UPGRADES

From time to time, products that we at one time knew and loved become discontinued and obsolete for many various reasons. This is true in both everyday commodities and products in the process equipment industry. A very recent discontinuation is that of the Honeywell Contro-Links combustion control system, one that we see in many equipment packages in our industry.

Fortunately, Nationwide Boiler and Pacific Combustion Engineering have a solution. We are offering the Fireye NXF400 as a field upgrade kit to replace your current system whether aging, outdated, or obsolete, with a new, more advanced and expandable product. This sys-



tem is being offered for a limited time at a majorly discounted rate.

The basic kit includes an NXF4000 fuel air ratio controller with FSG, touch screen display, 3ft lbs and 15ft lbs servo, amplifier card, UV flame scanner, and two actuators for a single burner. The Nexus system is a well-known and reliable solution to replace obsolete controls.

If you are in need of an upgrade or replacement for your current system, give us a shout and we will provide you with a quick quote, excellent pricing, and superior service. Don't wait, because this offer is only available through June of this year!



## THE IMPORTANCE OF DEAERATORS

Deaeration of boiler feed water is primarily known to remove dissolved oxygen from the water, however, there are four additional advantages: (1) carbon dioxide removal, (2) improved operation, (3) improved heat transfer, and (4) energy savings.

Corrosion in boilers leads to reduced heat transfer and efficiency losses. Both oxygen and carbon dioxide, if not removed from the water entering a boiler, will cause corrosion. Dissolved oxygen will attach to the metallic components of a steam system and form oxides, or rust, on boiler heat transfer surfaces. If carbon dioxide is present with the oxygen, the two gases together can be up to 40 percent more corrosive than if they were acting individually. Removing non-condensable gases and avoiding corrosion will greatly improve heat transfer as well as tube life and dependability.

Deaerators also serve the purpose of pre-heating the water, saving energy by recovering flash and exhaust steam from plant returns. This recovered steam can

account for 20 percent of the fuel typically required to provide heat for that process. Pre-heating the feedwater will also greatly reduce the chance of thermal shock caused by the expansion and contraction of heating surfaces and will ultimately improve the operation of your boiler.

Overall, if boiler feed water is not properly deaerated, corrosion will occur, and a boiler will operate less efficiently and there will be a higher possibility of facing costly downtime and boiler repairs.

### 5 MAIN REASONS TO DEAERATE

- OXYGEN REMOVAL
- CARBON DIOXIDE REMOVAL
- IMPROVED OPERATION
- IMPROVED HEAT TRANSFER
- ENERGY SAVINGS

## REPRESENTATIVE SPOTLIGHT: NBW, INC.



National Boiler Works (NBW) is a power and mechanical systems contracting company that specializes in turnkey construction, boiler repair, installation and erection, power piping, pressure vessels, heat transfer equipment, combustion controls, and refractory. They have been in business for over 85 years where they continue to have a strong tradition of quality workmanship, safety, and industry expertise.

Located in Cleveland, Ohio, NBW has been a trusted representative of Nationwide Boiler for over 30 years. In addition to representing Nationwide,

NBW stores and maintains our equipment to further serve our customers in the Ohio Valley region.

The NBW team consistently brings new business to Nationwide and we truly appreciate their support, quality of workmanship, and the long standing relationship between our two companies.







## CHARITY GOLF TOURNAMENT POSTPONED TO 2021

Due to the current state of the COVID-19 pandemic, we are seeing not only states but entire countries being shut down with many big events around the world being postponed or canceled. With our Annual Charity Golf Tournament approaching in these uncertain times, we had to begin looking at our options.

Although we are hopeful for a quick and positive turn of events, many things are unknown at this point and we want to ensure the health and safety of all involved. With that said, we have decided to cancel our 2020 tournament in May.

We'd like to think of it more as being postponed because we will resume next year celebrating our 40th Anniversary with a "Back to the 80's" theme as planned, so get ready! **The tournament will take place at Pebble Beach on May 5 and 6, 2021.** Additionally, we will continue to support Make-A-Wish® Greater Bay Area and the ABMA's Randy Rawson

Scholarship Fund. Last year with the help of our many sponsors, donors, and guests, we were able to donate over \$60,000 to these two charities, and we look forward to continuing this tradition in the future.

Also, be sure to look into the Randy Rawson Scholarship Fund if you have a family member in the industry that is pursuing continued education. The ABMA is accepting applications now through May 1, and you can find additional details on their website at [www.abma.com/rawson-scholarship](http://www.abma.com/rawson-scholarship).

We are very grateful and thank everyone involved for the support in these trying times. Please save the date as we look forward to not just a successful tournament, but another record breaking year in 2021.



## FACILITY IMPROVEMENTS

Boiler systems are by no means lightweight, and in order to service and maintain our rental fleet, equipment is moved around quite often. Constant movement of equipment weighing in excess of 120,000 pounds has caused significant potholes and cracking in our shop asphalt throughout the years. In the past, patching up the asphalt was the main solution to cover these damages. However, Nationwide recently took the opportunity to not only fix this damage but to improve certain areas by pouring cement; a more durable alternative.

In our loading and wash areas, 13,200 sq. ft. of cement was poured outside the bay doors where most of our maintenance work takes place. In addition, 14,600 sq. ft. of asphalt was replaced in strategic locations. Beyond the surface work projects, water lines, air lines, electrical lines, and pump drains were installed underground to eliminate the need to run these utilities across the yard surface.



A 4-person team was designated to plan and oversee the project from start to finish. The entire shop staff participated in logistics, piping, electrical, and other tasks that were needed to facilitate a smooth transition. To minimize work and access interruptions, the 3-month project was performed in 3-phases. Logistics at this time were extremely important as it required moving boilers, feedsystems, and other equipment to accommodate various area shutdowns. This structured approach allowed us to work efficiently with only 2 days of complete shutdown to our shop yard.

This project was quite exciting for many of us at Nationwide, and we are looking forward to the ease of moving equipment and longevity that the new cement brings us.

## INVENTORY SPOTLIGHT

**200,000 PPH, 750 PSIG / 750F**

New Babcock & Wilcox  
Package Watertube Boiler

**80,000 PPH, 250 PSIG**

Reconditioned Cleaver-Brooks  
Package Watertube Boiler

**75,000 PPH, 750 PSIG / 750F**

New Babcock & Wilcox  
Package Watertube Boiler

**800 HP, 450 PSIG**

Used Simoneau, Ultra Low NOx  
High Temp Hot Water Boiler

**475 HP, 150 PSIG**

New Superior Package Firetube Boiler



10

### DOWNSTREAM CONFERENCE

Being held at the NRG Centre in Houston, TX June 10 - 12, this event provides critical insight to overcome the industry's most pressing issues through key case studies and lessons learned by major companies. NBI and our local rep HTS will be exhibiting at this event.



22

### IDEA ANNUAL CONFERENCE

IDEA members and professionals will come together to share experiences, explore new solutions, and learn from each other at the Omni Shoreham Hotel in Washington D.C., June 22 - 25. Representatives from NBI will be exhibiting & available to discuss any upcoming needs.



26

### ABMA SUMMER MEETING

Currently on hold, the ABMA Summer Meeting is tentatively scheduled for June 26-29 at the Omni Barton Creek Resort in Austin, TX. This meeting continues to be the best networking opportunity in the boiler industry, providing educational seminars & renowned speakers.



18

### SOUTHERN CO. CONFERENCE

Located in Birmingham, AL, the Southern Company Generation Technical Conference provides technical information related to best practices, experiences, around equipment and processes, fleet initiatives & standards, and other system/technology topics. NBI will be exhibiting at this event on August 18 - 20.

OFFICES IN FREMONT, CA - WASHOUGAL, WA - VISALIA, CA  
EQUIPMENT & REPRESENTATIVES LOCATED WORLDWIDE



# THE NATIONWIDE BOILER **STEAMLINES**

Headquarters  
42400 Christy Street, Fremont, CA 94538  
[www.nationwideboiler.com](http://www.nationwideboiler.com) | [info@nationwideboiler.com](mailto:info@nationwideboiler.com)



Copyright 2020 All Rights Reserved