Shelly & Sands upgrades another asphalt plant with Webster Combustion aggregate burner

In the summer of 2019, Tom Jones, Asphalt Plants Manager for Mar-Zane Materials, a division of Shelly & Sands, Inc., began searching for a burner to replace the existing one at Plant 8 in Benwood, WV. By late winter 2020, it was the time to pull the trigger on a burner upgrade. Webster was a logical consideration as Tom already had a working relationship with the company at another Mar-Zane plant. In 2017 Webster had approached Tom and pitched the concept of upgrading the existing burner at their Plant 14 in St. Marys West Virginia with a new Webster HDRA-RF burner. He agreed not only to install the first prototype in the plant, he also made himself available to Webster on the design and feedback when it became operational. The burner "worked perfectly right out of the box" and is still performing well today.

Before the burner retrofit (left), and after (right), showing the new Webster Combustion model HDRA-RF, operating as a total air-fired burner at 125,000,000 BTU to dry 400 tph of aggregate.

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The Benwood plant is a drum mix operation rated at 400 tph. The new burner was to replace an open fired, long nose burner rated at 125,000,000 BTU/hr firing on natural gas and RFO as a stand-by fuel but running as a total air burner versus open fired. The burner selected was the HDRA-RFC-125-LN with a 180" extended nose plus the Webster Asphalt Burner Management System (ABMS). Due to space restrictions, the ABMS needed to be configured to fit the same cabinet dimensions as the previous system, incorporating a front plate layout designed to the customer's specs. A purchase order was issued in November of 2019 and the new burner was delivered in February 2020. Installation of the burner and panel were completed in early March, and start-up commenced in mid-April. Tom reported no issues throughout installation or commissioning. The local plant operator and staff immediately liked the burner and new controls. They especially appreciated the fact that it runs and runs with no issues. While this may seem rather obvious, burner issues have enormous downstream impacts with production and road crews. If a burner goes down, so does the plant, which causes the domino effects of idle road crews and potential penalties if a job is not completed on time. Also, burner reliability means the plant staff doesn't have to spend their time tuning and repairing a burner when they have more important things to worry about.

The only special consideration was having to be creative in figuring out how to fit all the hardware in the lower part of the cabinet. Jason Jones, Webster's Controls Engineer, talked it through with Tom to make it work. The old panel used relay logic with the minimum functionality of such a control. The new ABMS is a PLC-based platform which does away with the buttons and switches and replaces those with a user-friendly HMI, giving the operator everything he needs at the touch of a fingertip.

Harry Hudson, Benwood's plant operator, said, "The thing I like most about this burner is it doesn't need babysitting. We just turn it on and it does its job, just like the rest of the crew. Through our entire paving season, we've had zero hiccups." Tom Jones, Asphalt Plants Manager for Mar-Zane, echoes that sentiment. "I haven't had to spend any time this year troubleshooting any burner issues at Plant 8. I don't think about the burner, it just runs and runs. With 22 plants spread out across eastern Ohio and West Virginia to manage, I'll take that."

Before the controls retrofit (left), and after (right), showing the new Webster Combustion ABMS (Asphalt Burner Management System), with PLC-based functionality and a modern HMI.

About Webster's HDRF-RF

The Webster model HDRA-RF is a multi-fuel register-style burner for asphalt rotary dryers and comes equipped with Webster's Dynamic Flame Shaping feature which shapes the flame by automatically controlling the register vanes to optimally fit their dryer and combustion zone. The HDRA-RF is the first burner to introduce the concept of dynamic flame shaping to the aggregate drying industry. A servo actuated register located at the front of the burner controls the shape of the flame based on the output of the burner. The Webster Combustion HDRA-RF provides the option to control the combustion air with a damper, a VFD, or both.

For more information on Webster Engineering's products and services, visit our website.

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