

## Virus Impact on Boilers and Utilities Operations – Are you Ready?



The world is staring down a pandemic that has already snarled travel and leisure, public gatherings, and is straining healthcare providers around the globe. It's not clear that those who have responsibility for critical infrastructure and utilities to healthcare and other industries have truly thought out all of the potential risks that face them in the coming months. This article does not have lots of brilliant "aha moment answers". Instead it seeks to stimulate inner thought and discussion for organizations that may not be placing the proper focus on systems within their operations that could bring them to their knees overnight. I am presenting to you here 3 distinct risks that you may want to consider as we "the people of the world" move forward through this unprecedented historic event together.



### 1. Boiler Operators

Many industries I am familiar with have always had a thin bench when it comes to boiler operators. You can ask many kinds of staff to work from home but in the case of boiler operators it just doesn't work that way.

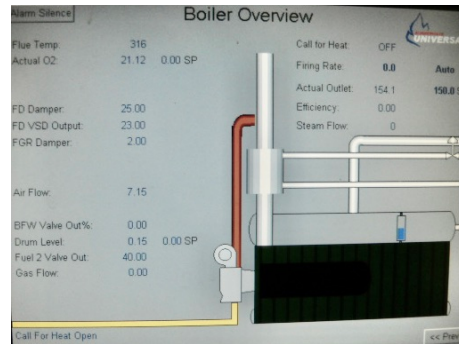
They are in limited supply, in many cases they need licenses, and many are somewhat senior and in the "at risk for virus" age groups. Since the US Navy got out of fossil fueled boilers years ago a somewhat steady supply of operators has disappeared. Add to this the fact that trade schools have dried up and the transferability of these skills to other jobs is limited and you now have a very limited pool of licensed operators left. The average age of most of the operators I know of is at least 50. This means at least two things: 1) If any of your licensed boiler operators gets sick how do you replace them? 2) Given their age, many are in the high-risk population.

What happens the day that you are short a licensed operator and your management team says to operate anyway with anyone? It's time to talk about this now. If something happens and you are the supervisor who went along you could be facing personal criminal liability. This could be voluntary or at least involuntary manslaughter if the unthinkable were to

occur. Your management team needs to know about and discuss these kinds of things in writing NOW.

The limited population of licensed boiler operators was a problem for many before the virus. What do you do now?

- a. Focus on all the sanitation and prevention things you can within the boiler house facilities.
- b. Is there a back-up plan for some getting sick? How much overtime can some parties work? Is there a policy in place for this right now? Are there union contract obligations for this that need to be addressed? Can operators be shared or borrowed from other facilities?
- c. Consider cross training back-up staff for boiler operating roles. Start having staff shadow operators now.
- d. Documentation will be key to all of this. Are there start-up/shut-down documents in place. Do you have SOP's, (standard operating procedures) documented? What about emergency operating procedures and abnormal operating condition procedures? What is the format of these? Are valves and piping systems marked? Have you made instructional videos?



## 2. Critical spares

Prior to the virus there was always a list in my mind of things that should be spared within any facilities operating boilers and critical fired equipment. Now that supply chains will be disrupted that list gets even larger and longer. Even in good times (pre-virus) some fuel train valves were 8 to 10 weeks for delivery. This is likely to get worse. If you have not thought through how you will handle trying to get critical parts you are risking all of your operations and the people who depend on them.



- a. Create a needed critical spares list along with an inventory of what you have. This can include motors, combustion controls like pressure switches, flame detectors, a BMS (burner management system – for packaged boilers), safety shut off valves, etc. If you run a multiple facility operation create an aggregated list of what everyone has and where things are located. Go actually touch and see and evaluate the condition of what you think you have to make sure that its now not corroded or broken.

- b. Identify alternate service providers right now in case your regular service provider cannot provide timely services due to staffing problems.
- c. Consider training some of your staff for servicing fuels and combustion equipment so that there can be less reliance on outside vendors.

### 3. Preventive Maintenance

If staffing becomes an issue in the coming months there may be a tendency to want to cut back on preventive maintenance. Boilers and fired equipment are not a place to start. The overall impact of things like not monitoring blow down and or failing to monitor equipment conditions could be catastrophic. Things to think about include the following.

- a. Can you automate any of the now manual preventive maintenance and or operator intensive tasks? For example, automatic blowdown controls can immediately save you money and take a critical operational task out of human hands.
- b. Can you cross train maintenance staff from other departments to do some boiler systems PM?
- c. Can you farm out any of the PM tasks that might be equipment condition related? Things like safety device testing and monitoring of vibrations from fans and gear boxes are things that can be outsourced?
- d. Can you upgrade water softeners such that they regenerate more reliably and automatically on flow such that less testing of water conditions is required?

Whether or not any of the above is applicable I hope this article at least initiates a discussion within your organization. Hopefully this virus gets cleared up quickly and our world gets back to normal. However, given how critical most boiler and fuel fired systems are to healthcare facilities and many manufacturing organizations it would be irresponsible NOT to entertain these kinds of contingency thoughts.

#### About the author

John R. Puskar, P.E. has been providing safety and risk management solutions for boiler and fired equipment operations for nearly 40 years. He is the President of Prescient Technical



Services in Cleveland, Ohio, ([www.PrescientTS.com](http://www.PrescientTS.com)). Mr. Puskar founded the world's largest combustion equipment safety service company and besides his book, "Fuels and Combustion Equipment Safety - What you don't know can KILL you!", has also presented more than 50 papers and has trained thousands. He is a licensed mechanical engineer and received the ASME's prestigious "Uzgirus Barnett" national safety award for his lifetime of

contributions to fired equipment safety. Mr. Puskar currently serves on several NFPA committees including NFPA 85, Boiler and Combustion Systems Hazards Code.