A New Day for ENERGY EFFICIENCY

There is widespread agreement across all sectors in the United States that energy (aka power) should not be wasted. Deliberations centered on energy in general quickly turn to discussions of energy efficiency, wherein the amount of energy required to provide products and services is actively reduced. Traditionally, there has been broad recognition that conventional pollutant emissions are reduced when energy efficiency results in any industrial facility combusting less oil, natural gas, or coal. Recently, the U.S. Environmental Protection Agency (EPA) has focused its efforts on the electric utility industry and asked for increased energy efficiency as a means of reducing carbon dioxide (CO₂) emissions. The Clean Power Plan, signed by the Obama Administrator on August 3, 2015, includes assumptions regarding efficiency improvements that can be achieved by coal-fired electric generating units, thereby reducing CO₂ emissions.

This month’s issue of EM looks at areas of current success in improving energy efficiency.

In the first article, “Steam Plant Efficiency: Rising to the Challenge,” Una Nowling, P.E., technology lead for fuels at Black & Veatch Corp. and adjunct professor of mechanical engineering at the University of Missouri–Kansas City, describes the challenges of becoming more efficient at an electricity-generating power plant. Nowling explains the key parameters of “net plant heat rate” and goes on to discuss opportunities for improving energy efficiency in four areas: boiler efficiency, turbine cycle efficiency, electrical efficiency, and monitoring and diagnostics.

Next, in “Don’t Write Off Energy Efficiency; It’s Just About to Have Its Day,” Matt Golden, senior energy finance consultant for the Environmental Defense Fund, tackles the growing concern that energy efficiency projects may not have an acceptable financial payback. Golden acknowledges that some engineering models of public programs can over-predict energy reductions and investments in efficiency can be valued in a number of ways, thus producing widely varying results.

The third article is a case study by Dayton Power and Light (DP&L) Corporate Communications that asserts that an electric utility can provide energy efficiency leadership to its customers, while at the same time making it valuable and fun. DP&L points out that utilities are in a unique position to motivate their customers to upgrade lighting, appliances, HVAC, and other systems to be more energy efficient. As a result of such efforts, DP&L estimates that between 2009 and 2027, the cumulative energy savings for the Ohio electric utility will be at least 22%, in keeping with Ohio law.

In A&WMA terms, we see our consultants and engineering firms prepared to advise on energy efficiency strategies, our regulators providing rules that mandate energy efficiency, and electric utilities fully engaged in assisting all customers with their desires to reduce monthly bills. Good alignment.