



## KROESCHELL PROJECT CASE STUDY:

# Lutheran General Hospital Controls Retrofit

### THE CHALLENGE

Advocate Lutheran General utilizes (2) 600 HP and (2) 800 HP high-pressure steam boilers providing steam to the main hospital and professional building complexes. The boilers had been in service for approximately eight (8) years when Lutheran General's Engineering Department became concerned with lack of steam capacity. Also, the OEM burner controls were proprietary, approaching obsolescence and operators reported that poor combustion and soot build up was occurring on the fire side of boilers.

### THE SOLUTION:

With Kroeschell's long history of successfully servicing Lutheran General's cooling equipment, Advocate requested that our Combustion Systems Group perform a full evaluation on the four boilers. Kroeschell factory trained and certified burner technicians performed comprehensive testing of the burner controls and combustion management system. A detailed report was presented to Advocate, and they approved Kroeschell's recommendations. A two phase approach was implemented.

In phase one, Kroeschell repaired and reprogrammed the proprietary OEM combustion controls to proper operation on all four boilers. This resulted in the immediate resolve of sooting and poor combustion. Boilers responded with clean and efficient combustion, stack emissions near zero CO and NOx levels below 60 ppm. During this process, Kroeschell found several OEM items—draft controls, O<sub>2</sub> trim, VFD Blower control—not responding properly to OEM controls. Kroeschell addressed this during phase two.

In phase two, Kroeschell learned that the original proprietary OEM combustion controls would soon become obsolete, prompting Kroeschell to find an alternative nonproprietary system. Kroeschell selected, installed and commissioned a Siemens LMV52 Series Burner Combustion Management System. The LMV Series is both forwards and backwards compatible and able to interface with the Hospital's BAS. The LMV Series retrofit controls allowed the draft controls, O<sub>2</sub> trim and VFD combustion blower to all work in unison providing maximum boiler efficiencies.

### THE RESULTS:

#### The Kroeschell team:

- Increased steam output capacity of the boilers from 70% to approximately 95% of stamped rating and substantially increased combustion efficiency.
- Achieved clean combustion and near zero stack emissions on all four boilers.
- Provided onsite operator training and offers ongoing 24/7 response and support.



#### PROJECT OVERVIEW:

**Location:** Park Ridge, IL

#### Project Scope:

- Increased steam output capacity to boiler stamped rating.
- New controls provided fully sequenced combustion control with significant increases in efficiency, performance and flexibility.

#### Customer Profile:

Advocate Lutheran General Hospital is a 645-bed non-profit teaching hospital located in the Chicago suburb of Park Ridge, Illinois. Founded in 1949, Advocate Lutheran General Hospital is one of largest hospitals in the Chicago area with more than 25,000 employees and 4,600 affiliated physicians.

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