

Labor Availability for the Installation of Air Pollution Control Systems at Coal-Fired Power Plants

October 18, 2011

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In response to new and upcoming EPA air regulations for the electric power fleet, in particular the proposed Utility NESHAP (Toxics Rule) and the final Cross-State Air Pollution Rule (CSAPR), the nation's fleet of coal-fired power plants is expected to install additional pollution control systems—such as scrubbers and fabric filters—over the next several years. These investments will create increased demand for construction materials, equipment and labor to design and install these vital controls. Contrary to claims that labor shortages will delay the installation of controls, our current analysis indicates that more than sufficient skilled labor is available to build the pollution control systems required by these EPA air rules while creating jobs for American workers and boosting the national economy. Most notably:

- Based on conservative assumptions, more than 17,000 boilermaker job-years are available, providing a 3,000 job-years cushion over the 14,000 job-years EPA estimated are needed to comply with the Toxics Rule and CSAPR; and
- The substantial drop in boilermaker man-hours from 2008 (40.5 million) to 2010 (28 million) demonstrates that the current market has substantial underutilized capacity to expand quickly to meet the increased demand.

Historically, with the introduction of any new regulations requiring significant investments in modern pollution controls, industry groups have raised concerns about labor availability to construct and install the equipment on a timely basis. In response to EPA's CSAPR and Toxics Rule air regulations some groups again have asserted there are not enough laborers, in particular boilermakers, to construct and install the necessary pollution control equipment in the time required. Past experience, however, indicates these concerns are unfounded. For example, predictions of labor shortages in response to the NOx SIP Call and the Clean Air Interstate Rule (CAIR) that would have limited or delayed projects never materialized. The market responded effectively to the increased demand during the implementation of these programs. In fact, the industry installed scrubbers in response to CAIR at a much faster rate than EPA had anticipated upon issuance of the rule.

In its analysis of the proposed Toxics Rule, EPA estimated that 13,400 boilermaker jobs (job years) will be necessary by 2015 to complete the pollution control installations required by the rule.¹ In addition, EPA estimated that CSAPR will require 890 boilermaker jobs (job years) by 2014, although some of the predicted retrofits may overlap with the controls required for the Toxics Rule.² The National Association of Construction Boilermaker Employers estimates that, as of 2010, there were 24,500 active boilermakers working in the construction trades. Using a conservative assumption that 35 percent of

boilermakers are available at any given time to work on pollution control retrofits³, and a worst-case scenario that boilermakers will be active for only a two-year period in constructing retrofits in response to these rules, a *minimum* of more than 17,000 boilermaker job-years should be available to construct the necessary pollution control systems.¹ This worst case estimate significantly exceeds the approximately 14,000 boilermaker job years that EPA predicts will be required by 2015 under both air regulations; however, there is much more excess labor capacity to meet the demand because:

- The notion that there is a strict limit of available boilermakers is incorrect. In the past, industry groups justified their concerns by assuming a “hard cap” on boilermaker labor availability; however, history has proven such a hard cap places unrealistic limits on retrofit activity as the labor market is, in fact, dynamic: the supply of labor is able to shift and grow rapidly in response to demand.⁴ While boilermakers indeed represent a highly specialized trade, experience has demonstrated that the available workforce for installing pollution control retrofits is highly flexible and can respond quickly to increased demand required under EPA’s new air rules. For example, during the CAIR compliance construction period, boilermaker activity in constructing pollution control equipment significantly surpassed the number of boilermakers predicted to be available by both EPA and industry groups, which, in part, explains why both EPA and industry consultants underestimated the rate of equipment installation.⁴



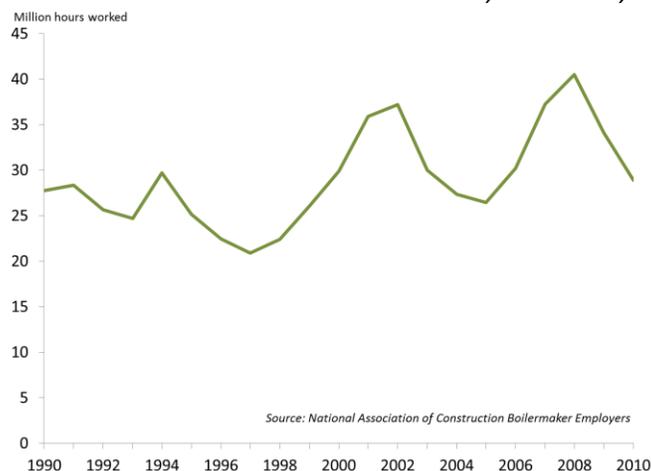
Boilermakers from Local 363 are installing a scrubber system at Dynegey’s Baldwin Energy Complex in Baldwin, Illinois
<http://www.boilermakers.org/resources/news/V49N3/kudos>

- Historically, the boilermaker’s trade has grown rapidly in response to increased demand. Over only two years, from 1999 to 2001, membership in the International Brotherhood of Boilermakers (IBB), the union that represents most boilermakers in the United States and Canada, grew by over 35%, or 6,700 boilermakers.⁵ This increase was fueled by the increased demand for labor for installation of SCRs to comply with the NOx SIP Call. This rapid growth demonstrates that, despite the need for training, the boilermaker labor force is able to expand quickly to meet demand. Additionally, the Boilermakers National Funds, which manages boilermakers’ pensions, has special rules allowing retirees to return to work without suspension of benefits in case of a labor shortage.⁶

¹ This effectively assumes that all of the retrofit work will occur within a two year window. In practice, the Clean Air Act allows three years to comply with the Toxics Rule with additional time allowed for the installation of controls on a case-by-case basis.

- While EPA has conservatively estimated that 35 percent of total boilermakers are available to work on pollution control retrofits, other types of boilermakers can be retrained to work in the pollution control sector if necessary. The number of all types of boilermakers in IBB is over 63,000⁷, which includes those that work in other industries such as manufacturing; these workers have similar skill sets to boilermakers working in the power sector, and can be trained to perform the same work. Workers in related trades, such as shipbuilders and ironworkers, some of whom share a union with boilermakers, can also be cross-trained to perform boilermaker duties. For example, the IBB estimates that a shipbuilder can be cross-trained to boilermaker status within a year.⁸
- Using modular construction, in which components of a pollution control system are fabricated in offsite shops rather than on-site fabrication, the labor requirement for a project can be reduced by up to 30%, which will free up labor for other projects.⁹
- Furthermore, experience has shown that the utility industry plans well ahead. For example, even prior to CAIR's finalization, the industry had ordered about 40 GW of scrubbers, and ordered another 60 GW within only months of the rule's finalization.⁴ Such advance planning enables industry to spread out the retrofit projects and reduce peaks in labor demand. For this reason, the assumption of all work being performed over only a two year period is extremely conservative.
- In their analysis of the impact of the proposed Toxics Rule EPA made very conservative assumptions about mercury control and did not take into consideration the ability to upgrade existing ESPs to meet the proposed PM standards, and therefore EPA's prediction of fabric filter retrofits in the proposed Toxics Rule likely exceeds what will actually happen.
- Moreover, unemployment in the construction trades, at 13.3%, remains higher than in other sectors of the economy.¹⁰ While no unemployment numbers are specifically available for boilermakers, boilermakers apparently are working at less than full capacity as man-hours worked dropped significantly from a peak of 40.5 million in 2008 to 28 million in 2010, and 2011 hours are on track to remain at similar levels.¹¹ (Figure 1, below.) This strongly suggests a substantial amount of underutilized capacity exists and workers would be able to increase their work hours in response to higher demand. The work resulting from this retrofit activity would be welcome to currently underemployed boilermakers.

Figure 1. Construction boilermaker hours worked, in millions, 1990-2010



These factors, combined with the significant existing population of skilled and trained boilermakers, show that the existing boilermaker labor force will be able to construct and install the pollution controls required under the new EPA air rules in time to satisfy the requirements of these rules. This increased boilermaker labor—along with that of other skilled labor trades involved in building and manufacturing pollution control equipment—will lead to cleaner air and a stronger economy.

References

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⁵ EPA. 2005. “Boilermaker Labor Analysis and Installation Timing.” Technical support document for final Clean Air Interstate Rule. <http://www.epa.gov/cair/pdfs/finaltech05.pdf>

⁶ Boilermakers National Funds, “8th Special Retiree Work Rule in Effect.” <http://www.bnf-kc.com/news.aspx?id=6328>

⁷ International Brotherhood of Boilermakers. Telephone call. October 17, 2011.

⁸ EPA. 2005. “Boilermaker Labor Analysis and Installation Timing.” Technical support document for final Clean Air Interstate Rule. <http://www.epa.gov/cair/pdfs/finaltech05.pdf>

⁹ Institute of Clean Air Companies, March 2004. “IAQR Projected 2015 Control Technologies Can Be Installed by 2010.” <http://www.icac.com/files/public/IAQRboilermaker.pdf>

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