NOx and Multi-Pollutant Compliance Strategies in Light of Regulatory and Market Uncertainties

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Abstract

This presentation is intended to fill a niche between a detailed discussion on current and proposed environmental regulatory requirements being presented by EPA to "open" the conference, and two days of "technology download" from many and varied technology experts. As such, it will hopefully raise questions and issues that link environmental control policy and regulations, power generation industry/market dynamics and technology-based decisions and solutions facing the industry.

We specifically will neither attempt to discuss the details of the various competing Federal and state regulatory programs and proposals, nor try to present technology solutions for industry. Others will do that capably over the next two days.

The power industry is facing significant challenges, all of which contribute to an increasingly more difficult task of determining the most cost effective approach to complying with environmental mandates. In the midst of deregulation and evolving power market dynamics, an aging fleet of plants, varying degrees of environmental requirements at the federal and state levels, and a "menu" of options that include not only the traditional control technology deployment, but also fuel diversity, new generation technologies, operational curtailments, geographical considerations, the task for power generators is no longer as simple as "what is the best low-NOx burner?" or "does SCR make sense for my plant?"

Instead, plant owners as well as technology suppliers must now ask (and answer) a more demanding and larger set of questions. Some examples

- Compliance levels, dates and approach?
- Portfolio vs. plant vs. unit compliance?
- Cross-pollutant technology impacts (e.g. "does SCR help or hurt mercury control?", "what will ammonia, mercury or AC contamination do to the

quality of the flyash?", "do mercury or CO_2 regulations affect the decision between a wet and dry scrubber?")

- "Commercial" vs. new technology risk, both from a performance (will it comply) and readiness (will it be available when needed?)
- Combine single pollutant technologies or consider multi- pollutant controls?

However, perhaps even more important is a new dynamic increasingly pervading the "environmental control technology industry", one which provides yet another challenge to both suppliers and consumers of these technologies. This dynamic has to do with the fact we have achieved very high levels of performance with commercially available control technologies. At present, reductions of 90-95% for NOx, 95-99% for SO_2, 99+% for PM, and even possibly 90% (+/-) for Hg are available through commercial technologies such as SCR, WFGD, FF and ACI.

The implication of this status is that new, developing technologies no longer compete strictly on the old basis of "just being better". In the not so distant past, new technologies came in to the market place mainly with increasingly higher performance attributes (e.g. SCR "better" than SNCR "better" than LNBs). As this is becoming increasingly more difficult, "new" technologies must find other arguments to compete. Cost, side effects, reliability, ease of operation and a number of other potentially attractive attributes become more critical in buying/selling technology. Technology vendors must not only develop "good" products but also "market" them successfully. Technology "consumers" must be ever more educated to be able to make good technology decisions. Lastly, the environmental "community" which has played a role in "promoting" new technologies may have less of an incentive to do so now.