

SCR Operation and Maintenance for Determining and Improving Catalyst Life Cycle

Maintenance of modern SCRs is more important than systems designed a decade ago. SCR systems are no longer being over designed: current and replacement systems have 1/3 of the catalyst volume of their 1990's counterparts. Simultaneously, stack limits are being reduced. This drastically reduces catalyst life and increases the benefits of routine maintenance and a catalyst testing program.

This presentation provides the plant manager, engineer and operator the tools they need to remove the mystery from the SCR. The various catalyst types and vendors will be presented. The benefits and concerns of each product will be discussed.

Routine maintenance of the reagent injection system, as well as catalyst testing can predict the catalyst life, prevent premature failure of the system, and improve operation. The reagent injection system composes of vaporizers, pumps, and valves that can be tuned to minimize excess reagent usage.

Catalyst testing includes performance testing, chemical contaminant analysis, and pore surface area analysis. The results of these tests as well as an analysis of the plants operating data can determine the cause of catalyst deactivation, as well as predict the end of life. This maximizes the life of the catalyst, and gives the plant time to procure replacement catalyst without exceeding NOx removal requirements.