

PRECIP

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Bi-Polar Charging Tested in Australia

One of several innovative technologies aimed at improving electrostatic precipitator performance presented at the ESP/FF Round Table and Expo held in Dallas last August was a device that reduces stack gas opacity by introducing bi-polar charges to the inlet side of precipitators. Writing in *Power Engineering*, Steve Blankinship described the presentation by Wallis Harrison, principal research specialist for Southern Company's generating and energy marketing group, on the Indigo Agglomerator.

The Indigo Agglomerator, developed by Indigo Technologies, is installed into the high velocity duct ahead of an ESP. It charges particulate matter both positively and negatively, causing the small particles to form larger particles that can be removed from stack gases by the existing ESP. "The fine negative particles are attracted to the large positive particles and vice-versa," says Rod Truce of Indigo. "The way it works is not by collecting any dust itself but by enabling the precipitator to collect the fine particles by attaching them to the large ones."

The Indigo Agglomerator is a pretreatment device that goes into the high velocity inlet duct before the ESP. During a 200 millisecond treatment time, half the material is charged positively and half is charged negatively. The two oppositely charged particle streams are then mixed together and the fine negative particles attach to the large positive particles, and vice versa, forming particles greater than 10 microns in size that are easily collected. The Indigo Agglomerator requires little maintenance since it has no moving parts and does not use any rapping.

The Indigo Agglomerator was developed in Australia over the past two years. A full-scale test version has been installed in the inlet duct of one of the precipitator casings on a 660-MW coal-fired unit owned by Australian Delta Electricity. At Southern Company, Harrison wants to install a full-scale Agglomerator for trial testing early in 2003.

Because the system is so effective for removing fine particulate matter, the effect on opacity is dramatic. Truce stated, "The initial full-scale test installation has improved the performance of the precipitator by over 20 percent and we expect the commercial unit to be significantly better. This means that on a 4 or 5 zone precipitator, you could delete one zone, thus saving significant capital cost."

Visit Indigo on the Web

<http://www.indigotechnologies.com.au>

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