Project Value	$2m
Man hours	2000h each
Duration	12 days each
LTIs	0
MTIs	0

Incitec Pivot Mist Precipitator Rebuilds

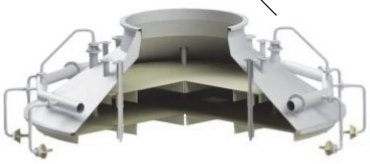
Feb 2017 and Feb 2018

Project Brief

Precipitator Technologies (PrecipTech) completed the rebuild of two electrostatic mist precipitators (EMPs) at Incitec Pivot's metallurgical acid plant in Mount Isa over two shutdowns in Feb 2017 and Feb 2018. The complex projects were completed with an excellent safety record. In each case, the project was delivered on time and on budget despite extreme heat and weather conditions.

Project Scope

Spraying systems
All spraying systems were cleaned and inspected and new nozzles fitted.



Discharge Electrodes
All discharge electrodes were removed, cleaned, inspected and replaced where required.

New Upgraded Collecting Tube Bundles
Four new collecting tube bundles were installed to replace the old damaged versions. The new design features integrated solid earth rings and a conductive layer on the inner walls of the tubes. These features provide superior performance by reliably ensuring all inner surfaces are earthed.

Solid Carbon Earthing Rings (top)

Conductive inner surface

Robust Construction

Solid Carbon Earthing Rings (bottom)

Precision made tube bundles

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The Electrostatic Precipitator Specialists

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General Maintenance

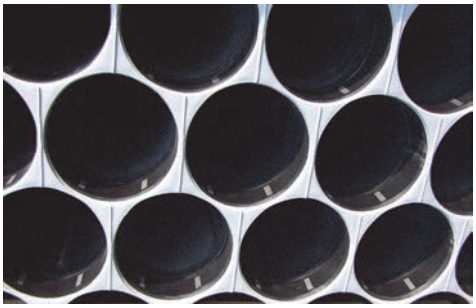
In addition to the upgrade work, a large amount of general maintenance work was also completed. This included:

- Thorough internal washing
- Casing inspections
- Cleaning, inspection and replacement of damaged discharge electrodes
- Replacement of all gaskets
- Inspection and replacement of flushing and fogging sprays systems

Lead Welding
Highly specialised lead welding was required throughout the discharge electrode system. Weld quality is critical to ensure future reliability.

New Control Systems
As part of the EMP upgrades, advanced new Automatic Voltage controls were installed on each EMP to optimise power levels.

Advanced Collecting Tube Design
The collecting tubes supplied for this rebuild utilise the latest technology in plastic engineering. Large carbon rings are imbedded into the top and bottom of each tube and a conductive layer has been applied to the internal surfaces. Traditional plastic tubes have no wall conduction and only a flimsy braided earthing system. Measured system resistances showed only 1.5 Ohms across the tubes and 33 Ohms vertically.



Project Outcomes

Prior to the rebuild, both EMPs had significant internal damage to the earth grid with tube bundle resistances well over 1000 Ohms. After the rebuild the resistances have dropped to 1.5 Ohms. This has had a very large impact on collection efficiency and has directly reduced the dust/mist carry over to the acid plant. Additionally, the new tube bundles have greatly improved the reliability of the precipitator which has increased the availability of the unit and will reduce ongoing maintenance costs.

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