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COURSE BROCHURE

Air Emission Abatement Retrofit Training Course

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Registered in the United Kingdom and Saudi Arabia

Air Emission Abatement Retrofit Training Course

Air Emission Abatement Retrofit is a 1-week training course for plant environmental engineers, operations managers and HSE advisers who must cut stack and fugitive emissions from plants already running, and it ends with an emission reduction retrofit roadmap. Tightening permit limits and community scrutiny now reach older boilers, kilns, furnaces and process vents that were built without modern controls. Jupiter Prime Training runs this course for operating plant teams.

Why Air Emission Abatement Retrofit Matters Now

Three pressures converge on existing industry. Permit renewals bring lower limits for dust, sulphur dioxide and nitrogen oxides, often with continuous reporting. Nearby communities and lenders track odour, haze and health complaints. Owners want reductions without long shutdowns or lost throughput. Plants that plan retrofits well pick the right technology for each source, fit it into turnaround windows and prove results with reliable monitoring. Plants that react late buy oversized equipment in a hurry, suffer bypass events and face penalties or curtailed operation.

Who Gains Most from Air Emission Abatement Retrofit

- Environmental engineers responsible for emission inventories, permit limits and reporting
- Operations managers responsible for combustion units, kilns and process vents that emit
- HSE advisers responsible for community complaints, exposure and incident follow-up
- Project engineers responsible for scoping and installing abatement equipment in brownfield sites
- Instrument technicians responsible for analysers, sampling systems and data acquisition

Site teams that send an environmental engineer, an operations manager and a project engineer together gain most.

Air Emission Abatement Retrofit Capabilities

The capabilities below move a plant from a list of stacks to a ranked set of retrofits it can fund and verify.

- Build an emission inventory by source, pollutant and operating mode — permit renewal
- Weigh fabric filters, electrostatic precipitators and wet scrubbers for particulate — capital approval
- Assess low-NOx burners, selective catalytic and non-catalytic reduction for combustion units — operations managers
- Specify flue gas desulphurisation and VOC recovery or oxidation options — process owners
- Design continuous monitoring and leak detection routines that stand up to audit — environmental authorities
- Calculate cost per tonne abated to rank retrofit options — plant leadership

Key Air Emission Abatement Retrofit Terms

- Emission inventory — A source-by-source record of what a plant releases to air, in what quantity and under which operating conditions.
- Electrostatic precipitator ESP — A device that charges dust particles in flue gas and collects them on plates.
- Selective catalytic reduction SCR — Injection of ammonia or urea over a catalyst to convert nitrogen oxides into nitrogen and water.
- Flue gas desulphurisation FGD — Removal of sulphur dioxide from exhaust gas, usually with a lime or limestone slurry or dry sorbent.
- Continuous emission monitoring system CEMS — Analysers and data systems that measure stack pollutant concentrations and flow without interruption.
- Leak detection and repair LDAR — A routine survey of valves, flanges and seals to find and fix fugitive VOC leaks.

Air Emission Abatement Retrofit Day by Day

Day 1: Sources, Limits and Inventories

- Point, Fugitive and Area Sources — Inventory Boundaries
- Emission Factors Versus Stack Testing — Inventory Accuracy
- Permit Limits and Averaging Periods — Compliance Gap Analysis
- Dispersion and Ground-Level Concentration Screening — Community Impact Priority
- Source Ranking by Tonnage and Toxicity — Retrofit Shortlist

Day 2: Particulate and Sulphur Dioxide Control

- Fabric Filter Selection and Bag Life — Dust Removal Options
- Electrostatic Precipitator Upgrades — Collection Efficiency on Older Units
- Wet, Semi-Dry and Dry Desulphurisation — Sorbent and By-Product Choice
- Fuel Switching and Sulphur Reduction — Low-Capital Alternatives
- Space, Draught and Pressure Drop Constraints — Brownfield Layout Fit

Day 3: Nitrogen Oxides and VOC Control

- Combustion Tuning and Low-NOx Burners — First-Step Reductions
- Selective Catalytic and Non-Catalytic Reduction — Ammonia Slip Management
- Thermal and Catalytic Oxidisers — VOC Destruction Efficiency
- Vapour Recovery and Condensation — Product Recovery Value
- Tank and Loading Emissions — Seal and Vapour Balance Upgrades

Day 4: Monitoring, Leak Detection and Reporting

- CEMS Configuration and Quality Assurance — Reportable Data Integrity
- Predictive Emission Monitoring — Lower-Cost Option for Smaller Sources
- LDAR Surveys and Optical Gas Imaging — Fugitive Leak Reduction
- Bypass, Start-Up and Upset Reporting — Exceedance Handling
- Abatement Equipment Maintenance Routines — Sustained Removal Performance

Day 5: Practising the Emission Reduction Retrofit Roadmap

- Inventory and Gap Baseline — Applying Day 1 Methods to a Case Plant
- Technology Shortlist by Source — Applying Day 2 and Day 3 Options
- Monitoring and LDAR Scope — Applying Day 4 Routines
- Cost per Tonne and Shutdown Window Fit — Retrofit Sequencing
- Emission Reduction Retrofit Roadmap — Phases, Owners and Verification Points

Applying Air Emission Abatement Retrofit After the Course

- Update the site emission inventory with current operating modes and rank sources by tonnage and community impact.
- Run a cost-per-tonne comparison for the two largest sources ahead of the next turnaround scope freeze.

Air Emission Abatement Retrofit Questions FAQ

What is air emission abatement retrofit and why does it matter now?

Air emission abatement retrofit means adding or upgrading pollution control equipment on plants already operating. It matters now because permit limits, community scrutiny and lender expectations are reaching older units that were built without modern controls.

Which roles gain most from air emission abatement retrofit training?

Environmental engineers, operations managers and HSE advisers gain most, together with project engineers and instrument technicians who install and run abatement and monitoring equipment.

How does air emission abatement retrofit differ from greenhouse gas accounting training?

Air emission abatement retrofit targets dust, sulphur dioxide, nitrogen oxides and VOCs with physical equipment and monitoring. Greenhouse gas accounting training focuses on carbon footprints, reporting boundaries and reduction targets.

What do you bring back from air emission abatement retrofit training?

You bring back a phased retrofit roadmap for one plant, linking each priority source to a technology, a cost per tonne, a shutdown window and a monitoring check.

Air Emission Abatement Retrofit: The Way Forward

The emission reduction retrofit roadmap first informs which source is addressed in the next turnaround and what equipment is ordered for it. Environmental, operations and project teams use it with permit authorities and lenders. After the first retrofit, revisit monitoring results and cost per tonne against forecasts before committing to later phases.