

DIRECT FIRED OXIDIZER



FEATURES

- Thermal oxidation of all forms of waste gases
- Low NO_x combustion technology
- Meets all regulatory requirements
- Heat recovery with low or medium pressure steam generation.
- Non-plugging spray towers for SO₂ scrubbing
- Modular supply available

BENEFITS

Lundberg's knowledge and experience in the collection and transport of pulp mill noncondensable (NCG) streams have led directly to the development of specialized equipment for the treatment of waste process gases.

Historically, the pulping industry has used the lime kiln or power boiler for the destruction of these gases. As environmental constraints have tightened, the need for a reliable back-up has become necessary to insure compliance with government regulations. To address this concern, many in the industry have turned to the Lundberg Direct Fired Oxidizer (DFO) as the primary or backup point for disposal of the waste gas streams.

Our DFO is designed to thermally oxidize the contaminants contained in waste gases such as strong (batch and continuous), dilute, and stripper off gas. Lundberg DFOs can also be applied to any waste gas stream that requires thermal oxidations. You can rely on the performance and operation of the Lundberg DFO.

We are the leading supplier with the largest number of operating DFOs in the pulp and paper industry

CONTACT

Lundberg
13201 Bel-Red Road
Bellevue, Washington 98005
425.283.5070
www.lundberg-us.com

LUNDBERG'S AREAS OF EXPERTISE

BY-PRODUCT RECOVERY

- | | | |
|--|--------------------------------------|----------------------------------|
| <input type="checkbox"/> Tall Oil Soap | <input type="checkbox"/> Acidulation | <input type="checkbox"/> Storage |
| <input type="checkbox"/> Turpentine | <input type="checkbox"/> Condensing | <input type="checkbox"/> Storage |

CHEMICAL HANDLING AND STORAGE

- | | | |
|---|----------------------------------|---------------------------------------|
| <input type="checkbox"/> Sulfur | | |
| <input type="checkbox"/> Caustic | | |
| <input type="checkbox"/> Acids | | |
| <input type="checkbox"/> Sulfur Dioxide | <input type="checkbox"/> Storage | <input type="checkbox"/> Vaporization |

CHEMICAL GENERATION

- Sulfur Dioxide
- NSSC Pulping Liquor
- Sulfite/Bisulfite Pulping Liquor

EVAPORATORS FOR PULPING LIQUOR

- | | |
|--|--|
| <input type="checkbox"/> Multiple-Effect | <input type="checkbox"/> Vapor Recompression |
| <input type="checkbox"/> Strong Liquor Concentrators | <input type="checkbox"/> Crystallizer |
| <input type="checkbox"/> Pre-Evaporation | <input type="checkbox"/> REX Technology |
| <input type="checkbox"/> Falling Film | |

FOAM CONTROL

- | | | |
|--|--|--|
| <input type="checkbox"/> Washer Filtrate | <input type="checkbox"/> Weak Liquor Storage | <input type="checkbox"/> Soap Skimming |
| <input type="checkbox"/> Foambreaker for Light Foam | | |
| <input type="checkbox"/> Soap Concentrator for Heavy Foam and Soap | | |

HEAT RECOVERY AND UTILIZATION

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Blow Heat | <input type="checkbox"/> Condensers | <input type="checkbox"/> Systems |
| <input type="checkbox"/> Pre-Evaporation | | |
| <input type="checkbox"/> Digester Heaters and Circulation | | |
| <input type="checkbox"/> Direct Contact Gas Coolers | | |
| <input type="checkbox"/> TMP | <input type="checkbox"/> Hot Water | <input type="checkbox"/> Steam Generation |
| <input type="checkbox"/> Heavy Liquor Heaters | | |
| <input type="checkbox"/> Waste Heat Boilers | | |

LUNDBERG CUSTOM EQUIPMENT

- Pressure/Vacuum Relief Valves (PVRV)
- Flame Arresters
- Jacketed Valves
- Lundberg Soap Separator/Soap Skimming Rake
- Heat Exchangers
- Heavy Liquor Heaters
- SO₂ Gas Fans

POLLUTION CONTROL

- | | | | |
|---|--|--|------------------------------------|
| <input type="checkbox"/> Black Liquor Oxidation | <input type="checkbox"/> Weak | <input type="checkbox"/> Strong | |
| <input type="checkbox"/> Condensate Stripping | <input type="checkbox"/> Steam | <input type="checkbox"/> Air | |
| | <input type="checkbox"/> TRS | <input type="checkbox"/> MeOH / BOD | <input type="checkbox"/> COD |
| <input type="checkbox"/> Noncondensable Gas | <input type="checkbox"/> Collection | <input type="checkbox"/> Incineration | <input type="checkbox"/> Scrubbers |
| | <input type="checkbox"/> Strong | <input type="checkbox"/> Dilute | <input type="checkbox"/> SOG |
| <input type="checkbox"/> Direct Fired Oxidizer (DFO) | | | |
| <input type="checkbox"/> Plywood Industry | <input type="checkbox"/> Heat Exchangers | <input type="checkbox"/> Steam Tunnel Condensate Evaporator | |
| <input type="checkbox"/> Regenerative Thermal Oxidizer (RTO) | | <input type="checkbox"/> Regenerative Catalytic Oxidizer (RCO) | |
| <input type="checkbox"/> Wet Electrostatic Precipitator (ESP) | | | |

SPECIAL SYSTEMS

- | | | |
|---|------------------------------|---|
| <input type="checkbox"/> White Liquor Oxidation | <input type="checkbox"/> Air | <input type="checkbox"/> Molecular Oxygen |
| <input type="checkbox"/> Sulfur Addition – Kraft Liquor | | |
| <input type="checkbox"/> Reausticizing – White Liquor | | |
| <input type="checkbox"/> Ash Treatment Systems – Saltcake | | |

TURNKEY

- Engineering
- Complete EPC