

WASTE HEAT PRE-EVAPORATION



FEATURES

- Removes 99% of the volatile TRS compounds from the black liquor
- Strips in excess of 85% of the methanol from the black liquor
- Virtually 100% turndown
- Minimal operator attention
- Forgiving during swings in production rates
- Tubular falling film or LTV technology is available

BENEFITS

The growing challenges for pulp mills in the years ahead are highlighted by concerns for reduced energy consumption and improved effluent control. This is often compounded with the difficulty of low grade waste heat utilization. Lundberg's Pre-Evaporation system is designed to meet this challenge.

The Pre-Evaporator can be incorporated in heat recovery systems for either continuous or batch digesters, concentrator systems, condensate stripping systems, or any other system with unused low grade heat. This heat is converted to additional evaporation capacity to help debottleneck an overloaded evaporator or make available another cost effective alternative for capacity increases.

Processing 100% of the mill's weak black liquor inventory in the pre-evaporation system removes most of the volatile TRS and methanol. This allows the process condensates from the multiple effect evaporators to be reused without the need for treatment.

CONTACT

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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"/> Noncondensable Gas | <input type="checkbox"/> Collection | <input type="checkbox"/> Incineration |
| | <input type="checkbox"/> Strong | <input type="checkbox"/> Dilute |
| | | <input type="checkbox"/> COD |
| | | <input type="checkbox"/> Scrubbers |
| | | <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