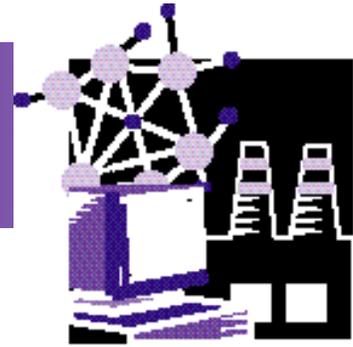


Advanced Industrial Materials Program

Project Fact Sheet



ADVANCED MATERIALS DEVELOPMENT RELATED TO THE FOREST PRODUCTS INDUSTRY

BENEFITS

- Energy savings estimated at 50 trillion Btu would result from improved boiler tube materials
- Reduced capital effectiveness in the forest products industry
- Increased boiler, operational, and processing efficiencies
- Longer lasting corrosion resistant materials and less downtime
- Improved boiler safety and environmental benefits

APPLICATIONS

Understanding of composite tube cracking will lead to improved materials for use in kraft black liquor recovery boilers, other types of boilers, and black liquor gasifiers. The types of boiler components include tubes for floors, walls, and smelt openings. Gasifier components include heat exchanger tubes and components and materials in contact with the recovered inorganic pulping chemicals.

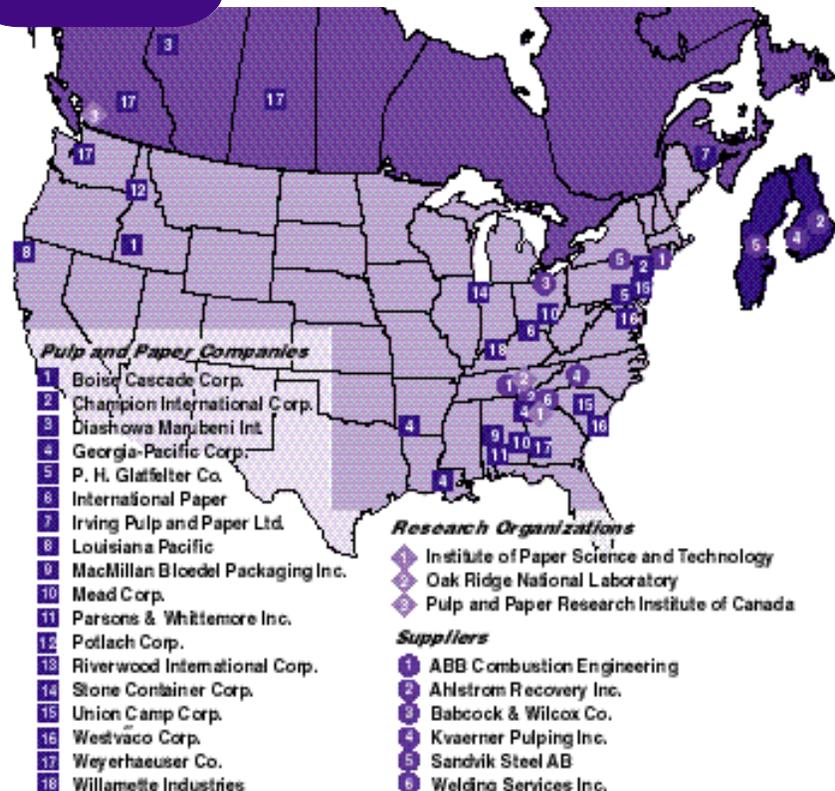


IMPROVED MATERIALS FOR TUBES IN KRAFT RECOVERY BOILERS WILL HAVE ENERGY AND SAFETY BENEFITS

Cracking of the stainless steel layer in co-extruded recovery boiler tubes has been observed in increasing numbers of kraft recovery boilers. Failure of such tubes can pose serious safety, energy, operational efficiency, and economic issues. This project initiated with the objective of identifying the cause of cracking in co-extruded tubes and of identifying alternate materials or process changes that would prevent tube cracking. Black liquor boilers are essential components of kraft pulp and paper mills since they are a crucial part of the system used to recover chemicals used in the pulping process. They are also the largest capital investment items in mills and a major source of materials issues. Steam produced by these boilers is also used in (1) heating and drying unit processes and (2) the generation of a significant portion of the electrical power requirements of mills.

Boilers have environmental benefits by enabling a waste minimization approach for mills to reuse process chemicals.

PARTICIPANT'S LOCATION



Project incorporates strong interactions among forest product companies, supplier companies, and R&D organizations.