

SCA Tissue North America

Paper Machine Waste Heat Recovery and Reuse

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SCA Sustainability Policy

”SCA exists for the purpose of creating value for the company’s shareholders, increasing the standard of living and quality of life of its employees and otherwise contributing to the economic, environmental and social well-being of customers, suppliers, and nations in which the company transacts business.”

SCA Environmental Philosophy

**”... to leave the lightest
'environmental footprint' on the
Earth as possible.”**

SCA Tissue Heat Recovery Systems

Current System

- **Stage 1: Indirect Air to Air Heat Exchanger**
Pre-heating and Conditioning of Hood Make Up Air

| | |
|-----------------------------|---------------------|
| Make Up Air Capacity | ~ 4800 scfm |
| Temperature Rise | ~ 320 F |
| Heat Recovered | ~ 1.6 MMBTUH |

SCA Tissue Heat Recovery Systems

Current System

- **Stage 2: Indirect Air to Glycol Heat Exchanger
Building Heat and Ceiling Re-circulation Usage (condensation control)**

| | |
|------------------|--------------|
| Glycol Flow | ~ 100 usgpm |
| Temperature Rise | ~ 120 F |
| Heat Recovered | ~ 4.0 MMBTUH |

- **Stage 2b: Water Heating Above Glycol Unit**

| | |
|------------------|--------------|
| Cleaning Showers | ~ 40 usgpm |
| Temperature Rise | ~ 120 F |
| Heat Recovered | ~ 2.5 MMBTUH |

SCA Tissue Heat Recovery Systems

New System

- **Stage 3: New Direct Water Heating Tower
Paper Machine Cleaning and Conditioning Shower
Water**

| | |
|------------------------------------|---------------------|
| Total Calculated Water Flow | ~240 usgpm |
| Temperature Rise | ~100 F |
| Heat Recovered | ~12.2 MMBTUH |
- **An additional 2.26 MMBTUH of recoverable heat
available for reuse.**

SCA Tissue Heat Recovery Systems

- **Previous Total (Two Stages) Heat Recovery and Reuse Actual was ~6.0 MMBTUH**
- **Current Total Heat Recovery (with Three Stages) is ~20.2 MMBTUH**

SCA Tissue

Heat Recovery Systems

New Direct Air to Water Heat Exchanger

- Tower Unit
- Blow-through Design
- Single Pass Downstream Supplied from Hood Exhaust Fan
- Approximate Dimensions- 49" x 107" x 186" (includes sump)
- 316L S.S./ 304L S.S.
- Heating Design 14.46 MMBTUH @ 340 usgpm water flow

SCA Tissue Heat Recovery Systems

Lesson Learned:

- Importance of ensuring and maintaining Water Quality post-Heat Recovery

Heat Recovery System

