Challenge
A U.S. tissue mill was experiencing shorter-than-desired seal operating life and was seeking improved methods to enhance safety around the rotary joint. In addition, the rotary joint design required the body to be able to move away from the Yankee dryer as the seal ring wore. This installation requirement increased the potential for leakage if missed or done improperly. Condensate hammer was sporadic, but when it did occur, the mechanical shock would, in some cases, result in the carbon seal ring breaking and allow steam or hot condensate to leak from the rotary joint creating a potential hazard for workers in the area.

Solution
The mill converted to the PT™ rotary joint with integral shield on both sides of its Yankee.

Results
The PT rotary joints are running well and the mill’s objectives to increase seal life, prevent catastrophic seal failure, and increase safety have all been met. Below are other improvements as a result of the conversion to PT rotary joints with a protective shield:

- The primary seal can be inspected without removing the rotary joint.
- Seal ring wear can visually be monitored and evaluated.
- The bracket and pad mounting make it possible to install with precision to ensure the seals run true for reliable performance.
- The body does not move as the seal wears. The seal ring is designed to operate in compression and uses a balanced seal design in which the seal ring does not experience the full force of mechanical shock from condensate hammer.
- If a rotary joint steam leak occurs, steam is directed away from personnel to minimize the potential hazard to workers.
- The integral shield protects the carbon seal ring from cold water spray during wash-ups to prevent catastrophic seal ring failure due to thermal shock.

PT™ rotary joint with integral protective shield keeps debris out of the sealing area and enhances safety around the rotary joint.