Cedar River's linerboard machine inaugurated

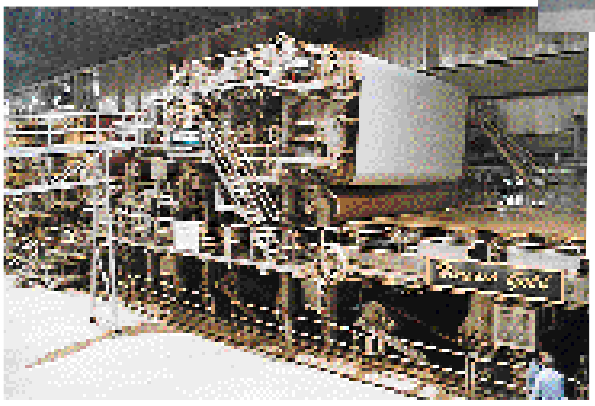
DONALD G. MEADOWS

Iowa recycling mill's two machines—completed ahead of schedule—supply Weyerhaeuser with high-quality containerboard.

Formal dedication ceremonies for Cedar River Paper Co.'s No. 2 linerboard machine were held on-site in Cedar Rapids, IA, Aug. 28, 1996. The 900 short tons/day machine, dubbed "Harvest Gold," has been producing liner from 100% recycled old corrugated containers (OCC) and mixed office waste (MOW) since April.

Among the dignitaries attending the dedication ceremonies was Iowa Gov. Terry E. Branstad. His efforts to successfully repeal the state's tax on machinery were instrumental in convincing the mill partners to build in Iowa. Mike Goodrich, BE&K's president and CEO; Richard C. Gozon, Weyerhaeuser's executive vice president; Paul Kiffe, chairman of the Cedar River Paper Co. (CRPC) management committee; and Elgie Harrison, CRPC business team leader (mill manager) also spoke during the ceremonies.

An enclosed bridge serves as the main entrance to Cedar River Paper Co.



"Harvest Gold," the new No. 2 linerboard machine

Construction of the No.2 machine was already under way as the No. 1 corrugated-medium machine ("Prairie Gold") was being completed in March of 1995 (see *Tappi Journal*, Oct. 1995, p. 240). The No. 1 machine produces about 270,000 tons/year of 23–40 lb corrugating medium. The No.2 machine is expected to produce more than 320,000 tons of linerboard per year. Construction of both machines at the greenfield mill spanned three years.

Both projects were undertaken as a general partnership-joint venture between Weyerhaeuser and BE&K, through their subsidiaries. The arrangement was unusual in that the engineering-construction company held a

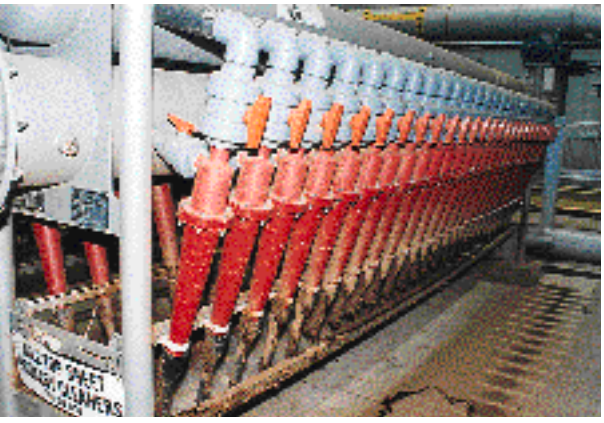
Mike Goodrich, BE&K's president and CEO, presents the ceremonial wrench to PM 2 to CRPC's Elgie Harrison.

Weyerhaeuser's Dick Gozon addresses inauguration guests.

The recycled pulp cleaning area for the No. 2 machine

financial interest in the operational success of the mill. "We discovered that ownership helped us build the best mill ever built," said Goodrich. Productivity and safety were among the highest ever achieved,he noted.In addition, the project was completed ahead of schedule and below budget.

With the completion of the projects, Weyerhaeuser can now focus on marketing the products.Nearly all of the medium and linerboard produced at the mill will go to 15 Weyerhaeuser box plants in the upper Midwest, with some going to company box plants on the West Coast. A small amount is sold on the open market.



One of several banks of cleaners

SUCCESS DEPENDS ON PEOPLE

A large part of the credit for the success of the projects goes to that partnership effort (see related story, p. 67) and to the team management structure developed to operate the mill. The project was a little unusual in that about 40% of the work was subcontracted, vs. 10–15%. That made the partnering relationship more critical to the project's success.

Cedar River interviewed thousands of people who applied for jobs at the mill and hired about 170 people from the local area.Another 60 employees came from other paper mills.Employees participated in a six-month,40-hour a week training program developed with the help of the area's Kirkwood Community College.

"This whole concept of moving into a team-based organization is going to have the greatest impact on Cedar River and on American industry than anything that's come along probably in 50 years," Harrison said. "We are going to become far more competitive because of our movement into team-based organizations than we ever thought we would be.The quality is going to be better, the costs are going to be lower," he said.

"I would consider Cedar River as the high water mark in my career," Harrison continued."Its successes center around the people—anyone can buy the technology. This is truly a principle-based organization," he noted. That influences how the mill deals with its customers, the community, and others,he said.

"Team members" such as Misty Raymond and Chris Ramey, who helped with the ceremonies and guided visitors through the mill, were equally enthusiastic about the mill's success and the team approach to work that CRPC has adopted.

THE MACHINES

Another unusual aspect of the project was that specifications for the No.2 machine ended up being developed before the No.1 machine had been tried out.Allowances were made for later changes to be made in the design and equipment specifications for the No. 2 machine in response to lessons learned during the startup of No.1, said Harrison.

For example,the under-machine pulpers of the No. 2 machine were given additional reinforcement to counter vibration discovered in the same location of the No. 1 machine.

Both machines were built by Beloit and share many of the same design characteristics. The No. 2 machine has been run to design capacity and beyond, but has yet to undergo its final performance reliability test.During one tour of the new mill,No.2 machine was running at 1914 ft/min,to produce about 47 tons/hour.

The No.2 machine is 7.62 m at the wire (the same as No. 1). A Beloit Concept IV-MH headbox feeds pulp to the fourdrinier, down which a Bel Liner is positioned to form the top ply and apply it to the base sheet.The linerboard passes through a press section (including an ENP-C) and a series of double- and single-tier dryers. Starch is applied at a size press. The paper passes through one more dryer section and then a calender section before winding.Both machines are equipped with a Measurex MXOpen distributed control and gauging system.

The No. 2 machine will produce Weyerhaeuser's "PerforMax Plus White" high-performance, 100% recycled, mottled white liner. Basis weights for PerforMax Plus White will likely be in the range of 31 lb/MSF to 36 lb/MSF.

The No.1 machine produces grades such as Weyerhaeuser's "PerforMax Plus HPM 96," a lightweight medium with a guaranteed STFI strength. The company promotes its HPM 96 grade as an alternative to 26 lb corrugating medium.

The mill originally drew 750,000 gallons of water per day from the municipal water main. With the addition of the No.2 machine,Cedar River discharges about 2.0 million gallons of effluent water each day to local sewers, compared with 0.7 million gallons with the No. 1 machine alone.Steam and electricity also come from the local utility.

CRPC recycles about 700,000 tons of OCC and MOW annually. Most of that comes from within a 300-mile radius of the mill, Harrison said. The mill usually keeps a minimum of a four-days' supply of recyclable material on hand,to a maximum of six or seven days, he said. **TJ**

Meadows is editor of TAPPI JOURNAL.

Chris Ramey, one of CRPC's "team members"

Mill guests pause at the winding area.

The Cedar River mill from the No. 1 machine side