

Mammoth Storage

WISCONSIN COOPERATIVE ADDS GRAIN TANKS IN A VERY BIG WAY



United Cooperative
Beaver Dam, WI • 920-887-1756

Date of incorporation: 1936
Storage capacity: 15 million bushels-plus at 10 locations
Annual volume: 30 million bushels
Annual revenues: \$360 million
Number of members: 55,000+
Number of employees: 400+
Crops handled: Corn, soybeans, soft red winter wheat, oats
Services: Grain handling and merchandising, agronomy, feed, petroleum, propane, convenience store, Ponderosa restaurants

Key personnel:

- David Cramer, president/CEO
- Mark Wiegel, grain division operations manager
- Pat Jeanes, South Beaver Dam location manager
- Dave Julius, Rock Springs location manager

Supplier List

- Aeration fans** Chief Agri/Industrial Division
- Bin sweeps** Springland Mfg., Sudenga Industries
- Bucket elevators** Chief
- Catwalk** Johnson System Inc.
- Cleaner** InterSystems Inc.
- Contractor** Marquette Grain Systems
- Conveyors** ... Chief, The GSI Group
- Distributors** Premier Components Inc., Rapat Corp.
- Elevator buckets** ... Maxi-Lift Inc.
- Motion sensors** 4B Components Ltd.
- Steel storage** Chief
- Steel tank erection** ... U.S. Grain Storage Systems Inc.
- Tower support system** Johnson System



Above, new ChiefTitan 1.1-million-bushel tank, with its own receiving pit and leg, installed in 2007 at United Cooperative's South Beaver Dam elevator in Wisconsin. At right, a view of the entire elevator. Photo above courtesy of United Cooperative; all other photos by Ed Zdrojewski.



Wisconsin producers traditionally have expressed their farming prowess in pounds of milk per lactation instead of bushels per acre. Over the last 20 years, however, farmers

in the Dairy State have followed the national trend toward fewer but larger, more concentrated dairy operations. Producers who have left the dairy business instead have focused their efforts on grain production,



The 775,000-bushel storage tank at left is the newest to be installed at United Cooperative's elevator in Rock Springs, WI.

with some notable success.

“An average corn yield of 115 bushels per acre was considered good 20 years ago,” says Mark Wiegel, grain division operations manager for United Cooperative in Beaver Dam, WI. “Now, 180 or 190 bushels is more typical.”

On top of that, roughly half a



New 4,700-bph Zimmerman tower dryer installed at Rock Springs, one of three Zimmerman dryers installed at cooperative locations in 2007.



Beaver Dam South Location Manager Pat Jeanes (left) and Grain Division Operations Manager Mark Wiegel.

dozen ethanol plants have opened around the state, prompting producers into shifting even more acreage into corn, which yields three to four times as much per acre as competing crops such as soybeans or wheat.

“Last year (2007), we piled 500,000 to 600,000 bushels of corn on the ground,” Wiegel said early in February 2008. “The year before that, we had over 1 million on the ground.”

That, in turn, has sparked a major building program at United Coop- ►



Rail loadout at Rock Springs runs through an overhead surge bin, served by a new 20,000-bph GSI overhead drag conveyor.

erative, starting in 2006 with an 850,000-bushel flat storage building at the cooperative's rail-loading facility in South Beaver Dam.

The building boom continued in 2007 with the addition at South Beaver Dam of a 1.1-million-bushel Chief Titan tank—currently the largest corrugated steel grain tank available on the market. The cooperative also added a 775,000-bushel Chief tank at its Rock Springs, WI elevator, along with a 4,700-bph Zimmerman tower dryer.

The cooperative hired Marquette Grain Systems, Byron, MN (800-627-2631), as general contractor and millwright.

While he did not provide a total cost for the projects, Wiegel commented that the coop went for the biggest steel tanks it could fit on-site because of their favorable cost per bushel to build.

Construction began relatively late in the season, in June, but the new storage and equipment were operational by mid-November.

Titan 1.1

The mammoth Chief tank at Beaver Dam South stands 154 feet in diameter, with 53-foot-tall sidewalls and a 94-foot peak. Chief Agri/Industrial Division was able to design such a large tank by utilizing a 10-foot-

square center tower to support the roof, which is supported further with a web of steel cross beams.

The tank has a flat-bottom concrete floor and outside stiffeners. Currently, there is no sweep auger, though a 16-inch Springland model is on order. A set of eight 40-hp Caldwell centrifugal fans provide 1/10 cfm per bushel of aeration, with the assistance of 10 2-hp roof exhausters.

The new tank is served by its own 800-bushel mechanical receiving pit feeding a 10,000-bph Chief leg. The leg is equipped with 16x8 heavy-duty Maxi-Lift Tiger Tuff buckets mounted on a 17-inch belt.

A 10,000-bph overhead Chief drag conveyor takes grain from the leg to the big tank. The tank empties onto

another 10,000-bph drag in a below-ground tunnel that runs out to existing rail-loading equipment.

Rock Springs Project

While not as large as at Beaver Dam South, the 775,000-bushel Chief tank at Rock Springs still commands some impressive numbers. This tank stands 105 feet in diameter, 95 feet tall at the eaves, and 124 feet tall at the peak.

The tank is outfitted with a flat bottom, outside stiffeners, and a 12-inch Sudenga sweep auger. A set of four 50-hp Caldwell centrifugal fans provide 1/10 cfm per bushel of aeration through in-floor ducting.

A new 10,000-bph GSI overhead drag conveyor takes grain out to the new tank from an existing leg. The tank empties onto another 10,000-bph Chief drag in a below-ground tunnel, which returns to the facility's existing legs and rail-loading equipment.

Additional upgrades at Rock Springs:

- The coop installed a natural gas-fired, 4,700-bph Zimmerman tower dryer, which replaced an old, much-lower-volume dryer. Wiegel estimates the new dryer actually cut gas consumption in half despite the increase in volume. He noted that United also installed new 7,000-bph Zimmerman dryers at Ripon, WI and Horicon, WI, also sold by Marquette Grain Systems.

- Rail-loading capacity was doubled from 10,000 to 20,000 bph by replacing an old conveyor with a new GSI drag conveyor.

The cooperative also added three 730,000-bushel Brock steel tanks at its Ripon location. Companywide, the company added 5 million bushels of storage in 2007.

Ed Zdrojewski, editor



Flat storage building holding 850,000 bushels at South Beaver Dam was the first phase of the cooperative's recent storage expansion, installed in 2006.