Hooper Corporation OnSite
Fall 2015
Electric Power • Mechanical • HVAC

Dairyland Power Partners with Hooper Crews to Complete Challenging High-Voltage Transmission Line Rebuild

For one week in mid-October, the village of Holmen in La Crosse County, WI, had the rare opportunity to see a 90-foot long air crane chop through the air carrying Y-shaped steel poles, each weighing between 10,000 and 12,000 pounds. This unique sight was part of Dairyland Power Cooperative's project to rebuild a three-mile stretch of 161 kV transmission line through the Van Loon Wildlife Area.

Hooper crews worked in conjunction with Erickson Inc. (who operated the air crane) and Haverfield Aviation to rebuild an existing wooden H-frame line. Because 21 of the 30 new steel structures were in the low lying Van Loon Wildlife Area, they had to be installed with a Sikorsky S-64 air crane helicopter.

Erickson's Sikorsky S-64 air crane helicopter chops through the skies with a steel pole.

Challenges & Environmental Precautions

Due to the sensitive nature of the Van Loon Wildlife Area, the original project plan called for argos, marsh masters (amphibious track vehicles), or other similar low ground pressure equipment to be the only equipment taken into the wetland. The weekend before crews were scheduled to begin work in the low lying areas, there was substantial rainfall causing the water level to rise. After utilizing marsh masters and argos for a few days, it was determined that continued use of these vehicles would be too damaging to the environment. Hooper made last minute arrangements with Haverfield Aviation to use helicopters to fly Hooper crewmembers into the structure locations, eliminating the need for any ground vehicles.

A temporary fiber was installed along the edge of the right of way in order to maintain fiber connectivity over the course of the project. This was installed prior to removing the existing line. Once the temporary fiber was installed, Haverfield "long lined" (a way to transport workers on the ground by a long line that connects to the helicopter) Hooper linemen into the right of way to remove the existing wires and structures. The existing wires were wound up via a windup machine on high ground and the existing H-frames were dropped to the ground, deframed, and bundled up in preparation for removal from the right of way by the air crane.

Installing the Y-frames

All wetland structures were framed in the yard and laid out in an organized manner prior to Erickson arriving in order to maximize the productivity of the air crane. For each structure location in the wetland area, the air crane transported matting for the vibratory hammer and brought the vibratory hammer into place. Then, brought in the 50-foot long vibratory caissons and placed the vibratory hammer on top of the caissons. Once the caisson was installed and the guides for the

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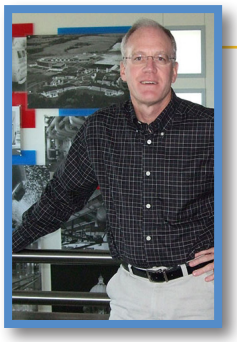
An air crane carries a steel pole before it is installed with vibratory caissons.

Inside Stories



From the President

Prefabrication is the New Norm

Dear Friends,

At Hooper and General Heating and Air Conditioning, we are no strangers to sheet metal, plumbing, and piping prefabrication. We have a long history of exemplary service. For more than one hundred years, our attitude is that there is no limit for creative minds to find new means, methods, and innovative techniques to make prefabrication of whatever is needed a reality.

We have always embraced technology, innovation, and service. Reflecting on my tenure here, I recall how the introduction of sheet metal plasma cutting technology and robotic pipe welding helped us become game changers in our industry. Since those early beginnings, our prefabrication techniques have accelerated dramatically. Consider:

- Notable examples of prefabrication over the years for HVAC are preassembly of equipment assemblies including VAV boxes, unit heaters, unit ventilators and pump/heat exchanger skids.
- Large bore welded pipe assemblies.
- Plumbing examples include medical gas assemblies, in-wall plumbing assemblies and plumbing fixtures.
- Sheetmetal duct systems are shipped sub-assembled in sections with dampers, taps, end caps, etc. and installed in the shop.

Multi-trade (pipe, duct, and electrical) racks continue to show great promise for significant savings and schedule compression on early trade involvement projects where the design and construction team are using an integrated BIM approach.

- Multi-trade racks fabricated in our shop have reduced our onsite install duration by up to 60%.
- This means that 60% of our work has been moved from a hazardous jobsite to a climate controlled and safe work area.
- Our rack design continues to be refined and the latest is truly a plug and play scheme. Crews simply offload large quantities of racks and install where needed. No longer is detailed numbering and sequencing required to understand where a rack goes.

Modular data center cooling solutions provide for fast and economical expansion of data centers. We work with a major prefabrication supplier and are engaged in design, budgeting, and fabrication for these projects shipping across the U.S.

A multi-rack is installed after being transported to the jobsite from a fabrication shop.

We have the facilities, the equipment, and a highly qualified work force to do any type of piping be it steel, copper, PVC, CPVC, PPR or HDPE. New ideas and strategies emerge every day as our team continues to advance and evolve new ideas, techniques and approaches.

- These prefabrication strategies have continued to set the pace for procurement and timely delivery to ensure success.
- Our owners and projects are seeing the benefits of quality construction techniques in addition to timely completion.

Prefabrication allows us to get the work done quickly while taking full advantage of automation through machinery and the “assembly line” ethic. Prefabricated assemblies are shipped as a single unit reducing field installation time.

Preassembly allows for fabrication to more critical tolerances. Inspection and often leak testing can be performed prior to shipment.

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The multi-racks await transportation to the jobsite where they will be installed.

Safety Corner

Hooper's Commitment to Safety Excellence Through Advanced Education

by Jeff Hanson, Manager of Safety Services

Hooper Corporation believes a well educated workforce is a safe and productive workforce. This year the Hooper Safety Department began several advanced education courses to improve field safety knowledge and expertise.

The first phase of our commitment to safety excellence is bringing the OSHA Construction Outreach Training program to our field leadership and journeymen. The program was designed through the OSHA Electrical Transmission & Distribution Partnership, which Hooper Corporation has been involved with since its inception in 2004. Every attendee receives 10 hours of industry specific instruction on such topics as Electrical Safety, Personal Protective Grounding, Job Briefings, Trenching and Excavation, and Personal Protective Equipment (arc rated clothing), among others.

The second phase of Hooper's Safety development program will utilize the Supervisory Leadership Skills Outreach Training Course. This course is intended to effect a positive safety cultural change by addressing core elements of an effective safety and health management system. The program was designed within the partnership between OSHA, the International Brotherhood of Electrical Workers (IBEW), and several electrical construction contractors and trade associations, which was established in 2004. The program represents a significant commitment by Hooper Corporation as it totals almost 20 hours of classroom instruction time. The subject matter includes Job Hazard Analysis, Job Briefings, Effective Safety Meetings, Site Inspections, and many others.

As Hooper Corporation works to enhance their management and site leadership driven approach to safe work performance, these education courses will become a cornerstone of our long term safety goals and objectives.

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Problems can be corrected before installation in the field.

We have embarked on this process with several goals in mind. We recognized that off-site fabrication can significantly improve efficiency and reduce costs for everyone. Our fabrication shops can reduce on-site labor cost significantly and help accelerate project schedules. Shop oversight and controlled conditions also mean that there is improved quality.

At Hooper and General Heating and Air Conditioning, our crews are embracing this change and fully appreciate its potential. Plans are already in place to expand our facilities to accommodate these evolving strategies.

With increasing investment in our facilities, training, equipment, and material handling capabilities we look to continue to deliver a quality and best value product to our customers. This is how we improve your bottom line while completing projects that employ cutting-edge applications.

Learn more and see how we can help improve your business operations. We pride ourselves in finding today's solutions to the challenges we face.

David M. Orr

Our fabrication shop's in-wall plumbing piping.

General Heating and Air Conditioning

GHAC and Hooper Team Up On Baldwin Area Medical Center's New, Replacement Health and Wellness Facility

Baldwin Area Medical Center broke ground on their new Health and Wellness Campus, which will be named Western Wisconsin Health, in October 2014. This new facility will span 100,000 square feet and will help meet the demand for integrative outpatient services. It will be easily accessible to the surrounding communities, a feature the existing landlocked hospital did not have. The goal of the new Health and Wellness Campus is to include assisted living, daycare, retail services, fitness center, walking trails, and educational facilities that support healthy living. The 95-acre campus will have an improved layout and increased operating efficiencies for staff and patients.

Construction on Baldwin Area Medical Center's replacement Health and Wellness Facility begins. This new facility will be named Western Wisconsin Health.


PPR piping and spiral ductwork in the mechanical room.

General Heating and Air Conditioning (GHAC) and Hooper began their work on this project in July 2015. They have been working with Boldt Construction to ensure the facility becomes LEED (Leadership in Energy and Environmental Design) certified. This certification means the structure meets and exceeds "green building" criteria. The facility will use geothermal technology to heat and cool the building and storm water will be retained onsite and filtered naturally with local vegetation. Baldwin Area Medical Center will also take the necessary measures to conserve natural resources, use recyclable materials, and protect both air and water quality.

Because Baldwin is 3.5 hours away from our fabrication shops, GHAC has rented a temporary space in Baldwin to prefabricate sheet metal duct work. This has allowed GHAC to hire employees in the Baldwin area and expand their reach across Wisconsin. Check out the project scope details for both GHAC and Hooper below.

HVAC

- GHAC crews are installing fan coil units, heat recovery chillers, rooftop air handling units, chilled beams, exhaust fans, kitchen ventilation system, duct work and aquatherm polypropylene (PPR) piping.
- GHAC is using a ground source geothermal heat pump for heating and cooling. No other heat source is being used.
- Custom rooftop air handling units use enthalpy wheels to recover energy from one airstream to another. This saves energy by taking warm exhaust air and preheating cold outdoor air.
- The GHAC team used cost reduction strategies to keep the owner within budget while also keeping high end, energy efficient systems in place.
- All prefabricated sheet metal and duct work is made in the Madison fabrication shop and shipped to Baldwin where it is assembled in a leased shop.

Plumbing

- Hooper crews are installing water heaters, water softeners, RO water generation units, medical gas source equipment, water piping, sanitary waste and vent piping, storm drains, chemical waste piping, natural gas piping and medical gas systems.
- The plumbing systems were designed and installed to allow future expansion and upgrades in equipment as technology continues to change.
- The plumbing fixtures were selected to be functional for a hospital setting, but low flow where applicable to be as "green" as possible.
- Based on the location of the facility from the Hooper headquarters and the compressed construction schedule, it was imperative Hooper crews were able to prefabricate a large percentage of the piping to cut down on the install time. This was made possible through early BIM coordination between all the trades.

Dairyland Power Transmission Line Rebuild, continued from cover

vibratory hammer were removed, the air crane transported and set the new Y-frame steel structures onto the caissons.

As Erickson was moving structures and equipment into place, Haverfield was transporting Hooper employees and hand tools between work locations on the right of way. After all structures, ropes, and conductor were installed, Hooper linemen were transported by helicopter via long line to clip the structures and complete all final work.

Project Conclusion

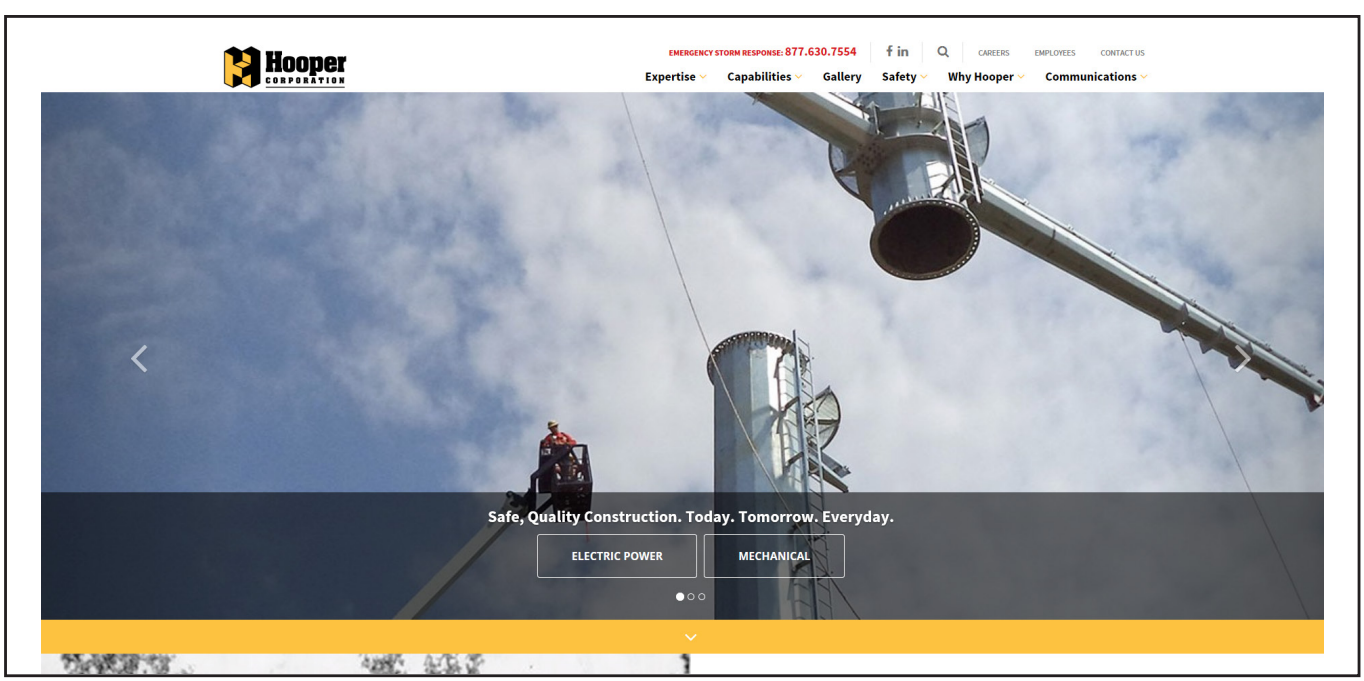
The Dairyland team led by Brent Drenckhahn and Craig Anderson did a tremendous job of preplanning for this project and making adjustments on the fly during construction. Approximately two years prior to construction, Dairyland began working with Hooper to create a work plan that set the project up for success. As conditions changed in the wetland during construction, Brent and the Dairyland team worked with Hooper to quickly make adjustments. The collaborative efforts of the project team and the ability of everyone to think outside the box to make last minute adjustments were integral to the success of the project. Hooper's work on this project was completed with zero injuries, ahead of schedule, and under budget.

Employees are transported by a Haverfield helicopter while an air crane carries a steel pole in the background.

A Brand New Look for Hooper

Hooper Corporation launched its new website on October 12 and is excited to share the new look and features. The new website is very user friendly and easy to navigate whether you are on your desktop computer or mobile device. It highlights each unique department at Hooper and provides examples of current and completed projects with project-specific details and great photos. Make sure you look for the "Gallery," a new feature that showcases a variety of department project photos. Click on the photos to view project specs and learn more about Hooper's role in each project.

With the upgraded website, it is easy to find information about Hooper's capabilities such as wind energy, LEED, BIM, emergency response, and fabrication. The site also highlights Hooper's expertise and core value, safety. You can still find us at the same web address, www.hoopercorp.com, but with a whole new look. So, check it out and be sure to connect with us on Facebook or LinkedIn.



Mechanical Division

Tight Schedule Requires Pre-Planning, Prefabrication, and Intense Part Management at DuPont

DuPont's Madison, WI manufacturing plant; which produces starter cultures used in the production of fermented dairy products like cheese, yogurt, buttermilk, and sour cream; probiotic cultures used for their health promoting effects on the digestive system of humans and animals; and other food ingredients had a need for an additional fermenter in order to increase its capacity for culture production.

This project was modeled after a plant in Germany and was one of DuPont's largest installations of its kind in the Midwest. Because Hooper crews worked alongside a continually operating plant, constant communication and understanding of the production process was very important. This meant lots of pre-planning and preparation for the plant outage so the plant would experience minimal interruption. By controlling the labor expenditure and closely managing the schedule, Hooper was able to save DuPont a significant amount of time and money, allowing them to pursue improvement opportunities during continued commissioning.

The majority of work was completed by the Process Piping Department; however, the Plumbing Department, Fire Protection Department and General Heating and Air Conditioning all played critical roles. Because the new fermenter had to be craned into the middle of the plant, many existing HVAC, Plumbing, and Fire Protection lines needed to be temporarily relocated. These building utilities were then worked around to incorporate new air handling equipment, a dozen extra back flow preventers, and expanded fire protection coverage.

Project Highlights:

- Over 4,000 welds were installed on process and support piping systems. They were installed to BPE standards and all production welds were independently videoscoped for review.
- Crews worked in shifts in preparation for the outage which required work around the clock to accomplish the numerous tie-ins with a minimal amount of processing downtime.
- With temporary walls isolating the process areas, there was little room for laydown. Constant parts management from temporary storage trailers and a nearby warehouse kept the crews installing just in time.

Over 500 control valves and devices were installed. Control cabling and pneumatic tubing chase the instrumentation around in open trays for sanitary washdown.

Right: New flow divert panels allow for integration of new and existing equipment.

Below Left: New thermal energy storage utilities were installed to support the increased process requirements.

Below Right: Crews remove old HVAC equipment to make way for new Process Utilities. All lifts required critical planning around continuous facility operation.

Community Events

A Look at a Few Organizations We Recently Supported

In July, employees participated in the Loop the Lake annual bike ride around Lake Monona. This was the second year the Hooper Foundation sponsored the event. Proceeds from the 12 mile bike ride went to the Clean Lake Alliance's ongoing lake improvement and protection efforts.

The United Way campaign was a success! General Heating and Air Conditioning kicked off their campaign with a baggo tournament (pictured above) while Hooper kicked theirs off with a tailgate lunch. All proceeds from these events went to benefit the United Way of Dane County. Thank you to everyone who joined in the effort to make our 2015 yearly United Way campaign a success!

General Heating and Air Conditioning's annual golf outing was a success with a record of 61 golfers attending. All proceeds went to The Boys & Girls Club of Madison. Congratulations to all the hole prize winners, along with the winning team Ryan Meyer, Dave Natz, Scott Strutz, and Kyle Dunwald (pictured).

Hooper participated in the 13th annual Bike for Boys & Girls Club on July 18. This is the third year Hooper was a silver sponsor. All proceeds went to support the Boys & Girls Club ongoing mission to provide programs that inspire and enable youth to realize their full potential.

General Heating and Air Conditioning employees volunteered for the 28th annual Heat's On event, a community endeavor that provides complimentary furnace clean and check services to veterans in Dane County. The homes of 48 veterans had their furnaces checked and cleaned this year. Thank you to all employees who took time to come out and assist with this very worthy cause.

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Contributors: Dave Orr, President | Jeff Hanson, Safety; Jake Davie, Overhead Line; Chuck Meoska, GHAC; Brian Schultz, Plumbing; Brian Burch, Process Piping; Eric Smithback, GHAC Editor: Kristin Haas, Corporate Communications Specialist

24/7 Emergency Storm Response

For all your emergency storm response needs, look no further than the Hooper Corporation Emergency Storm Response Team. Reach our emergency line 24/7 at (877) 630-7554

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ADDRESS SERVICE REQUESTED

Fourth Annual Hooper Halloween!