



**Hooper**  
**CORPORATION**  
Spring 2016 Edition

# OnSite

Electric Power • Mechanical • HVAC

## **DRONES:** Taking Utility Line Inspection to the Next Level

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BY DAVE ORR  
HOOPER PRESIDENT

## Hooper Begins 2016 With Organic Growth and Recognition

**B**uilding on solid success from last year, 2016 is off to a great start at Hooper. We are pleased to report many exciting activities and developments. It's a pleasure to note that both the Electric Power Division and the Mechanical Division have many important projects that utilize the skills, talents, and abilities of all our skilled trades. As we build and strengthen our workforce, we are receiving recognition for the quality of the work we perform.

Looking to the future, we want to continue to build on these areas of strength. Our skilled trades - Linemen, Plumbers, Steamfitters, Sheetmetal tradesmen, Operators, Treerimners, Mechanics, and Sprinklerfitters - are central to what we do, and their performance is returning real value for our clients and customers. Our commitment to safety also permeates all that we do. And people are noticing our value - our quality - and our commitment to safety. These attributes define Hooper Corporation.

We began this year with opening a third remote office to help support our Electric Power Division's plan for organic growth. We chose to operate out of Davie, Florida, to capitalize on the tremendous growth and potential in that region. We see population growth and new demand for electric power work.

Our Florida office will focus on substation, transmission, and distribution work with Florida Power and Light. The workforce we will develop will reflect Hooper's core values. We know current and potential customers will see the value we bring, and this will open the door for additional opportunities. Check out the latest on other areas of our Electric Power Division on pages 6 and 7.

As the cover of our newsletter indicates, we have begun the process of utilizing drones to take utility line inspection to the next level. At Hooper, we are always looking for ways to stay on the leading edge of technology in order to provide the best service to our customers. On page 4, you can read how we plan to use drone technology and how it will benefit our customers.

On the mechanical side of the business, we had a welcome surprise. In February, we were notified that our Mechanical Division had been awarded the most prestigious mechanical contractor safety award in the nation, the MCAA Safety Excellence Award. We should all feel tremendous pride in our safety department and field employees who made this award possible. The commitment and dedication to safety at Hooper is and always will be, first and foremost. This award reinforces the importance of our incredible safety leadership and collaboration among employees. You can read more about this award on page 3.

The rest of our Spring Edition will bring you information about our Plumbing crew's work in Eau Claire at Haymarket Landing, General Heating and Air Conditioning's continuous work at area schools, and a look at what our Custom Metals Fabrication department has been up to this year.

“**At Hooper, we are always looking for ways to stay on the leading edge of technology in order to provide the best service to our customers.**”

## Hooper Secures 2015 MCAA Safety Excellence Award



Each year, the Mechanical Contractors Association of America (MCAA) honors five companies with a Safety Excellence Award. Hooper Corporation's Mechanical Division earned first place in this year's MCAA Safety Excellence Awards Program in size category 3 (250,000-400,000 work hours). This is the most prestigious safety award a mechanical contractor can receive.

Over 2,500 members of the MCAA may apply for this nationwide competition. In order to be eligible for the award, a company must submit a written application with detailed information on:

- The contents of its safety and health program and statistical support
- The reasons why they believe they deserve to win a safety excellence award
- An innovative initiative that helped it achieve such a high degree of safety excellence

The MCAA awards selection task force also conducts phone interviews with executives at the top companies in each of the five size categories to gather additional information.

Hooper Corporation's safety program and initiatives stood out because of our emphasis on accountability, a dedicated jobsite safety presence, and a unique style of leadership training that applies to all levels of Hooper management and field supervision. Receiving this award is a team effort as Myles Mason, Safety Specialist at Hooper, stated, "Achieving this level of success is the product of dedication, teamwork, and uncompromising safety leadership throughout Hooper Corporation. Our field employees are at the center of our success and this prestigious award is a direct result of their day to day efforts."

We are most proud of our:

- **Safety leadership:** The safety leadership that is apparent

throughout our workforce is the result of hands-on and classroom training, which is delivered by passionate safety professionals. This style of challenging leadership training fosters genuine teamwork throughout the company where safety is the primary mechanism for all aspects of work. We emphasize communication, utilizing best practices beyond OSHA compliance, safety mentoring and coaching, continuous professional development, and daily focus on the moral responsibility of maintaining a safe workplace.

- **CARES Program:** This program focuses on the first six months of employment and training new employees to be safe on the job. There is no other program like it amongst our peers.
- Upper management's commitment to safety and established safety policies.

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# Hooper Adds Drone Capabilities to Enhance Utility Infrastructure Inspection



Unmanned Aerial Vehicle (UAV) or “Drone” technology and the potential uses for the utility industry have created a lot of interest recently. Many of our utility partners are exploring the possible applications and believe there are opportunities to utilize this technology to improve existing operations. We agree.

One of the initial functions where we believe drones will be very beneficial is in support of utility infrastructure inspections. Transmission line inspection is first and foremost; however, substation inspections are another area where we see potential benefits. We believe Hooper Corporation is in a unique position to become a leader in supporting these efforts.

As a result, we contacted Randy Thompson, our recently retired Safety Manager. Randy is a licensed pilot and is experienced in working with the federal government and their sometimes challenging processes. With his skill set and background, Randy seemed like a natural fit to become qualified as a commercial drone operator as well as lead the process to get our drone efforts up and running. Fortunately for us, he agreed to take on the challenge.

The road to being able to fly a drone for commercial purposes, legally, was nothing short of time consuming. First, in order to fly a drone commercially at this time, the drone operator must be a licensed pilot. This was something Randy

already had covered. However, the next steps required some patience.

For commercial use, you cannot fly a drone without a Section 333 Exemption from the Federal Aviation Administration (FAA). This involves creating and submitting a petition to the FAA. The petition is similar to a legal document that describes your planned drone operations, pilots, types of drones to be used, what FAA regulations you wish to have an exemption from, and a description of how your operations will be as safe as a normal manned aircraft would be in the United States airspace. Randy submitted this petition on behalf of Hooper at the end of July 2015. It was approved this January.



**Clockwise from top left:** This image was taken by the drone during a practice flying session at Pleasant Valley Substation in West Bend. It is an example of an overhead line inspection image. Rod Kolpack and Martin Luther turn the drone to calibrate it before flying at a training session in January. The complex drone controller. Randy Thompson gets instruction from the Leica Geo Systems instructor during a January training session. A photo from the drone during a practice flying session captures Randy Thompson, Rod Kolpack, and Martin Luther.

The approval provides Hooper with a “Blanket” Certificate of Authorization (COA) with specified restrictions for height and locations. The COA is good for 200 feet and flight must also be specified distances from airports.

Besides the pilot, a visual observer must also be present and the flight must take place in daylight and under Visual Flight Rules (VFR), meaning at least minimum specified visual conditions must be present before the flight takes place.

After necessary paperwork was completed and approved, it was time to train several individuals on the drone capabilities and operations. Two training sessions were conducted involving classroom lecture and actual drone operating lessons. The drones Hooper will be utilizing have photo and

“**The drone will provide a clear picture on the condition of the infrastructure.**”

video capturing capabilities. There are additional accessories such as infrared that can be obtained and used. It will also be possible to create a flight plan with waypoints and have the drone fly the flight plan by itself.

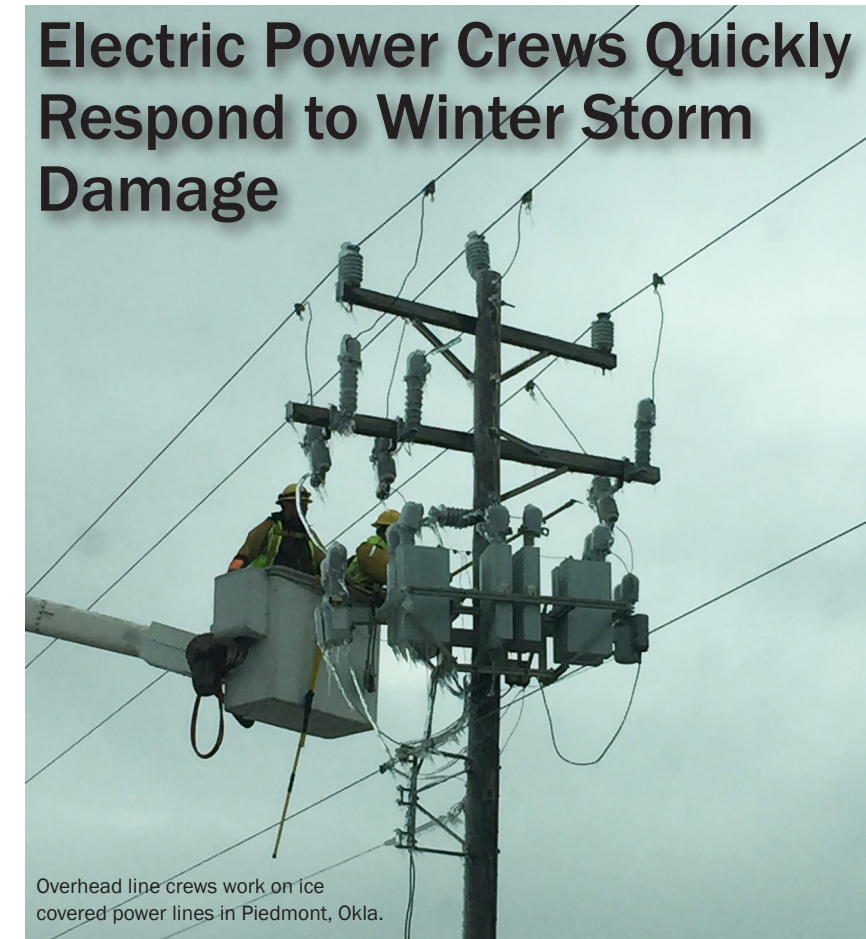
The drone will provide a clear picture on the condition of the infrastructure. Hooper crews will then use their industry knowledge and inspection expertise to collect the raw data, analyze it, and produce a report package that identifies the defects and rates them. The report will also include applicable photos to support the findings. We will be able to provide this service to customers so they do not have to use their own internal resources to analyze the drone data. This allows us to provide a more advanced product to our customers and help us to remain on the cutting edge of utility inspection.

Line inspections are expected to begin in early spring, and we are excited to provide this new service to our customers.



## Hooper Assists In Installation of New GSU Transformer at Nuclear Site

Hooper substation crews had the opportunity to assist Xcel Energy in the removal of the old GSU Transformer in Welch, Minn. Hooper crews removed and grounded the transformer and installed neutral bus and equipment jumpers. Then, they installed the neutral reactor and new high side jumpers. On the left, the old transformer is pictured. On the right, the replacement.



## Electric Power Crews Quickly Respond to Winter Storm Damage

Overhead line crews work on ice covered power lines in Piedmont, Okla.

At the end of December, winter storm Goliath lived up to its name and brought snow and ice from the West through a large part of the Plains, Midwest, and Northeast. The storm caused heavy snow, sleet accumulations, and glaze ice. The ice and strong winds resulted in widespread downed trees and power lines and many power outages.

Hooper sent overhead line crews from Ohio, Wisconsin, and Colorado to work at various locations for up to eight days to help restore power to residents. Crews were originally sent to New Mexico and Texas to work for Xcel Energy. As the storm moved east, crews provided restoration services for Oklahoma Gas and Electric in Oklahoma, Ameren in Illinois, and NIPSCO in northern Indiana. Hooper crews assisted in the restoration of power to:

- 18,000 customers in Oklahoma City surrounding areas
- 44,000 customers in Peoria, Ill. surrounding areas
- 30,000 customers in northern Indiana
- 30,000 customers in Clovis, N.M. and Amarillo, Texas surrounding areas

Crews battled bad weather conditions while working 16 hour days and through the night to ensure residents had power as soon as possible.

# Arvada Substation Project Brings Aggressive and Phased Schedule



Hooper substation crews had the opportunity to work with Xcel Energy in Arvada, Colo. Initially, the scope of this project was to upgrade the existing 115 kV – 13.8 kV Bank #2 transformer with a new 230 kV – 13.8 kV transformer and to replace the existing 115 kV portion of the substation with new 230 kV equipment. Crews were also tasked with installing new 1000 MCM, 15 kV power cable between the new Bank #2 transformer and the existing 13.8 kV portion of the substation.

After the project was awarded, the scope of the work expanded to include the below grade conduit installation. It was also determined that due to the high distribution loads in the area, the substation could not be run off of just



Hooper crews install temporary fly-line around the substation.

one of the existing transformers. Crews had to build a 230 kV fly line around the back side of the substation and install Xcel's critical response transformer (CRT), so that we could keep two

transformers feeding the distribution system to service the loads.

### Schedule

This project had a very aggressive schedule, causing Hooper to start the project before Xcel Energy had completed their civil work. Crews had to closely coordinate their work with the work that Xcel Energy was performing so that they were working efficiently as possible as the site was very congested.

### Phased Approach

This project needed to be constructed in phases to minimize the outage durations on the distribution system. Hooper crews built a section of the new 230 kV substation, installed the new Bank #2 transformer, CRT, and had the fly line

built over to the 13.8 kV substation. This allowed a short outage on the existing Bank #2 transformer while energizing the CRT to maintain our second source for the distribution loads. After the new Bank #2 was placed into service, crews were able to perform the remaining demolition work on the existing 115 kV portion of the substation and finish the remaining 230 kV substation construction.

> General Heating and Air Conditioning

## General Heating and Air Conditioning Leaves Mark on Area School Districts

From installing HVAC systems to boiler replacements, to replacing hot water systems and adding chiller plants, General Heating and Air Conditioning (GHAC) has its fingerprints on school districts all across the Madison area. Here, the work at Cottage Grove Elementary School is highlighted.

### Cottage Grove Elementary School

In May 2014, Cottage Grove Elementary School initiated a job with GHAC to conserve energy by adding a chiller plant and Variable Air Volume (VAV) system. The job had to be completed during the school's summer which was from June 6 – August 22. This tight timeline was not the only thing that made this project unique.

The intent of this job was to give the school cooling throughout the building, which would be appreciated by students and faculty when the school year began again at the end of a balmy August. In order to accomplish this, a 32-ton chiller plant was added to the roof of the school. This included a primary and secondary pump system with air control and a glycol fill located in a small storage unit at roof level. GHAC crews added three York®

Air Handling Units (AHU) and three VAV systems to the roof as well.

Crews added new chilled water coils to two other AHUs in the school. Chilled water was then run throughout the school in the ceilings to each AHU. This presented a challenge when there wasn't enough room in the ceiling space below one of the AHUs. So, ductwork and piping needed to be run on the roof and specially wrapped with insulation. This required cutting in 65 different duct and pipe curbs on the existing roof. Special supports needed to be engineered for all AHUs and chiller on the run due to vibration issues.

Crews removed and replaced the entire ceiling system that was touched. Each classroom's existing unit ventilators were removed and capped from the tunnel system below. Crews installed a VAV zone for each classroom that was affected. The existing hot water was used to pipe up all new VAV systems. The entire gas piping system on the roof was also replaced.

Even though the job presented some obstacles, GHAC was able to complete the job on schedule.

**Below:** Rooftop uncovered supply and return ductwork off Air Handling Unit. All roof supports for ductwork were constructed in the sheet metal shop.

**Right:** Special two inch, six pound Board Insulation with polystyrene application on ductwork.



### Completed Schools in 2015:

- > Nichols School
- > Winnequah School
- > Taylor Prairie School
- > Cottage Grove Elementary School
- > Bloomington School
- > Robinson Elementary School
- > Beloit Memorial High School
- > Raymond School
- > Riverdale High School and Elementary School
- > Kickapoo School
- > Richland Center School District (5 schools)

### In Progress or Upcoming Schools in 2016:

- > Aldrich Middle School
- > River Ridge High School
- > Elkhorn School District (5 schools)
- > Deforest School District (3 schools)
- > Madison Country Day School
- > Adams-Friendship K-12



> Mechanical Division

## Haymarket Landing Brings Hooper Plumbing Crews to Eau Claire

In Spring 2015, Hooper Plumbing crews began work on Haymarket Landing. This is a mixed use building in the first part of Eau Claire's Confluence Project. It is located on the pre-100 block of Barstow Street in the heart of downtown on the Chippewa River. The six-story building consists of underground parking with a retail space and restaurant on the first floor, and 119 apartments on the upper floors. The apartments range in size from efficiency apartments to four bedrooms and will be primarily used for UW-Eau Claire student housing. The apartment portion will also have a green roof area for residents.

Working alongside Market & Johnson, the general contractor, Hooper crews did the complete plumbing installation. All the plumbing design was accomplished in house. Crews installed all plumbing systems, including waste, vent, water piping, and all plumbing fixtures and



equipment. Hooper crews utilized prefabrication to minimize risk and man hours on the job. All materials were shipped direct to the job site with just in

time delivery due to space limitations. The project will be complete in June of this year.

> Safety Corner (continued from page 3)

- Consistent enforcement of the safety plan and substance abuse policies.
- Pre-project and pre-task safety and health planning.
- Worker participation in the company's safety process including the daily job safety analysis (JSA).
- Safe work practices/company safety rules.
- Worker safety training and extensive new hire orientations.
- Safety leadership training for supervisors and subordinates.
- Regular safety inspections and company safety performance audits.
- Injury, incident, and near-miss incident investigations dedicated to corrective actions.
- Meticulous recordkeeping, trending of incidents, and action plans to address those trends.
- Significant decrease in our total OSHA recordable rates for 2015.

Myles Mason and Dave Orr traveled to Orlando to receive the award at the MCAA 2016 Annual Convention. Thousands of MCAA members were present at this event. The entire company should be extremely proud of this achievement.

Congratulations to everyone at Hooper who made this award possible, especially our field employees who made this possibility become a reality!



> Custom Metals Fabrication

# A Glimpse of Our Recent Custom Metals Projects



Mike Burns, professional artist and metalworker, designed the sculpture called *Updraft* pictured above. This includes two steel 20-foot-high structures that will be installed along the bike path at Brittingham Park in Madison. During March, Burns oversaw the fabrication of the sculpture at Hooper. Hooper's welders and fabricators constructed Mike's design that started as a small model (pictured on the right). The labor and materials were part of Hooper's in-kind donation.



**Left:** The fireplace surround, which can be found in the Ovation 309 building in downtown Madison, was completed by Mike Sutcliffe, head of the Custom Metals Fabrication department.

**Right:** Our Custom Metals Fabrication department completed this custom hood shroud for Property Revival. It is made of stainless steel and trimmed with 1/8" stainless steel rivets.