

Utilities Department – Highlights for 2012

Production Division:

Platte Generating Station

- Two significant Environmental regulations, the Cross States Air Pollution Rule (CSAPR) and the Mercury and Air Toxics Standards (MATS) have affected the generation of power. Compliance with CSAPR required the installation of low NO_x burners for a cost of about \$4.5M during the October major maintenance outage. To comply with MATS, Kiewit Power Engineers was hired to determine the best long term solution to meet this regulation, which resulted in soliciting bids for a dry scrubber/carbon injection/ fabric filter system to be installed during a late 2014 outage. During 2012 two outages were completed with a major outage lasting seven weeks including the following maintenance items:
 - Installation of coal conveyor transfer point seals on conveyors 3 & 4
 - Fire valve upgrades on tripper floor
 - Painting of the Locomotive
 - Replacement of 400 railroad ties
 - Installation of new HMI for control system
 - Rework on control console in PGS control room
 - Repair of C & D Mills and inspection and installation of new riffle distributors in mills
 - Boiler repairs, including; tube shield repair, repair of super heater tube in back-pass section, and replacement of corten plate
 - Repair of deareator tank flange and weld inspection and repair
 - Installation of new coal nozzles, coal and aux air tips, separate over fire air ductwork and tips, air damper controllers, and coal piping for Low NO_x burner installation
 - Overhaul and inspection of turbine generator, repair of diaphragms and rotor blades
 - Installation of new steam coil
 - Inspected and cleaned 5 kV switchgear

Burdick Station

- The installation of the Uranium Removal System at the Well Field was completed and commissioned in June. The system is essentially removing all of the naturally-occurring uranium from wells 6, 7, & 8 and this treated water is blended with the output from other wells, reducing the overall uranium concentrations in water supplied to the City. A new PLC and remote station was installed at the Well Field, increasing reliability of the water system. Burdick High Pressure pump #1 was rebuilt.

Water Division:

- The City had several large water system extensions and upgrades in 2012: Parkview Subdivisions, Platte Valley Industrial Park, and the Merrick County Water Main Extension. These extensions added 88 live valves, 91 fire hydrants, and over 51,000 feet, or 9.7 miles, of water main ranging in size from 6" to 16" in diameter to the City's Water System. There were also numerous other smaller projects and system additions this year.
- Contractors were hired to perform the installation of the water main extensions, and the Water Division worked closely with them, making over 300 service taps, 120 test taps and various other taps, up to 16" in diameter. After final inspection, the water mains are turned over to the City, and the Water Department will be responsible for all future system maintenance.

- Along with numerous other duties, nine Ludlow fire hydrants were replaced with modern pumper fire hydrants. Nine broken line valves were replaced; 18 broken water mains were repaired, and 2,200 fire hydrants were checked for proper function twice during the year.

Phelps Control & Dispatch:

- In March, Grand Island Utilities Department participated in its first North American Electric Reliability Corporation (NERC) audit. Beginning in 2007, the Utilities Department was responsible for complying with multiple NERC standards and scheduled for a regular rotation of audits. Compliance involved careful documentation of all standards related activity. During the audit, all documentation was submitted followed by several telephone interviews. The audit went very well with only two possible minor violations. While the final results of that audit have not yet been released, no penalties are expected, with simple “fix it” requirements.
- All electric substations utilize DC battery banks to ensure critical equipment remains available during outages. Five out of seven banks were replaced due to age. The remaining two had been replaced the previous year.
- In order to meet the FCC’s narrow banding mandate starting January 1st, 2013, all Utility Department radios were evaluated to determine whether or not they could meet the new mandate simply by reprogramming or if they required replacement. Those requiring replacement were disposed of and replaced with compliant radios. All others were reprogrammed to meet the mandate. A side effect of the new mandate is reduced clarity and range. Efforts are underway to relocate the main radio repeater to a more centralized location to improve the situation.
- New security cameras were purchased with plans to install them at all electric substations. One has been installed at the Line Division in an effort to deter copper theft. Evaluations of the performance of this camera are ongoing.
- The Northwest Transmission Line Project between Substation “F” located on Capital Avenue and the St. Libory Junction Substation located north of Grand Island on Engleman Road was completed in November. Construction of the new line began in March. With the exceptionally dry summer, construction proceeded with no delays. This line will enhance the reliability of the Grand Island electric system and provide for increased power flows to outside entities. In addition to the line construction, several deteriorating poles were replaced throughout the remainder of the transmission system.
- Throughout much of the year, the department prepared to enter the Southwest Power Pool (SPP) Energy Imbalance Services (EIS) market. This required multiple registration forms to be submitted as well as a communications link to be established in order to receive generator dispatch signals from SPP. Participation in this market will allow the department to sell power when the market price is above the Platte Generating Station (PGS) fuel cost and buy power back when the market price is below the PGS fuel cost

Construction & Engineering Division:

- The Utilities Engineering Division is responsible for the design, surveying, construction management, and mapping of infrastructure projects for the City’s Electric and Water systems. During 2012, these upgrades and new projects resulted in over 28,500 linear feet of new water lines and 16,000 linear feet of new power lines being installed to meet the needs from the continued growth of the City. Major projects include:

- Construction to accommodate the BNSF Double Track Project was completed on Phase 1 and Phase 2.
 - On Phase 1, approximately 4,000 linear feet of cooling water line for the Burdick Power Plant was relocated with new plastic pipe, along with reconnecting Burdick Wells 2, 3, 4, and 5.
 - On Phase 2, the distribution main in Plum Street between 17th and 18th Street along with the tie-line under the tracks was relocated.
 - The 6" water line which feeds the Colonial Square Apartments along Vine Street was relocated to the new main in 17th Street.
 - Protective casings were extended on the water main crossings at Webb Road, Broadwell Avenue, and Stuhr Road.
 - One 115 kV electrical transmission structure was required to be relocated.
 - Over 2.5 circuit miles of 13.8 kV power lines in conflict with the Double Track project were rebuilt. This consisted of three electrical circuits between Burdick Station and Bismark Road, including supply circuits for JBS Swift. Additionally, nine overhead and underground power line crossings were rebuilt across the service area.
 - The Division prepared and submitted 31 permit applications to BNSF railroad. These covered power line crossings and/or longitudinal occupancy of the RR's right-of way throughout the entire project's Phase 1, 2, and 3 areas.
- As a result of a neighborhood meeting to discuss groundwater polluted by industrial solvents, petitions were submitted requesting extension of City water service in the Parkview area, including: District 457, located in Pioneer Blvd.; District 459, located in Park Drive; District 460, along Riverview Drive, Grand Avenue, and August Street; and District 461, located in Hage Avenue and William Street. The contract for that work installed 11,000 linear feet of 8" main and provided municipal water service to 131 properties.
- The Platte Valley Industrial Park East (PVIP-E) is a 280 acre tract located on the west side of Blaine Street, between Schimmer Drive and Wildwood Drive. The land is being developed by the Grand Island Area Economic Development Corporation. The project installed 8,500 feet of 16" diameter water main and 8,700 feet of sanitary sewer. Funding assistance was provided from a Community Development Block Grant (CDBG).
- Performed construction inspection and testing for five water main districts, five projects by private developers, and 11 commercial water projects. Drafted, edited, or revised 289 CAD files for power contracts, two Requests for Quotes, and one Request for Proposal. The Division assisted the City's I.T. Department with management of the City/County GIS data, Spillman software, City's web site, and the Facebook pages.

Overhead Distribution:

- In 2012, the Overhead Division was tasked with maintaining and upgrading the overhead distribution lines, which entailed 10,060 linear feet of single phase line and 4,070 linear feet of 3-phase being rebuilt. These upgrades eliminated old primary lines and secondary services wires to provide a safer and more reliable service to electric customers. The upgrades also allow for more flexibility in the system and additional feeder ties, and to keep the interruption indexes (SAIDI) and (SAIFI) well below the national average.
- The Division's continuous efforts to keep vegetation clear of power lines were also a contributing factor for minor outages during storms and throughout the year. This was accomplished with the Division's own tree crews, and the use of three contractors clearing 12 sections of lines and removing 320 trees this past year.
- The Line Crews installed or replaced 331 transformers, which has helped improve system reliability and power quality for utility customers as loads continue to increase.

- During the past year, the Overhead Division assisted other departments with pole relocations and removals; for water main and sewer line installations, and the relocation of poles for Public Works to facilitate the implementation of the Downtown Quiet Zone and the installation of new bike trails and sidewalks along with the replacement of traffic light poles and mast arms.
- In 2012, work with Burlington Northern Railroad continued to be a major project. The relocation of the double circuit line south of JBS was completed. The implementation and completion of this project involved many different contractors and divisions within the City.
- Line Crews completed the conversion of 2,400 linear feet of single phase line to 3-phase for the relocation of a batch plant southeast of Grand Island and to improve service in the area for future residential and commercial development.

Underground Distribution:

- Some new developments this year were: Oak Pointe, Woodland 13th, The Readiness Center, Bob Stahla Homes, Trausch Controls and Greenline Equipment. Some of the new construction lead the way to rebuild projects. Several existing areas and single lots were utilized for new commercial and residential construction. Once the needs were met for new or increased capacity for the developing lots, adjoining areas or lots that were within the ten-year plan of being renovated were rebuilt. A house being built at the corner of Calvin Drive and Gunbarrel Road lead to the rebuild of the Davis Lake area. Nineteen transformers and related transformer pads and secondary pedestals, three high voltage terminals, 26 runs of cable, in addition to a new loop run to limit outages during the rebuild and provide backup in the future were completed.
- Crescent Electric's new building at Highway 30 and North Road provided the opportunity to transfer seven residential lots to underground primary in addition to a potential feed to developing lots further east in the future.
- Once the feed was installed Vontz Paving's plant just north of the Hamilton County Bridge, the system to the original Anderson property was rebuilt, along with a new system for Neidfeldt properties, west across Highway 34 for a new residence and possible future lots to the northwest. Efficiency was accomplished by the fact that engineering, equipment and the related labor force was already focused on work in the area, which save re-mobilization time at a later date.
- With new construction needs being less than previous years, it allowed for the rebuild of some older commercial areas. Some notable rebuilds were: Main Street Station (originally Isle De Grand), Webb and Gateway Plaza south to Skate Island. Portions of Pipers Glen, an area bordered by Webb Road east to Tornado Hill, North Front Street south, to Old Potash was updated. This area includes KRGI, Western Apartments and Garrett Tire in addition to an underground tie installed from Potash Highway to Old Highway 30 by G.I. Farm Supply.
- Starr Elementary School's transformer was replaced and metering relocated out of the transformer area, with a loop feed being tied to an existing system. This provided back-up feeds to both the school and a strip mall along South Locust Street.

Utility Storeroom (Warehouse):

- The Utility Storeroom Division had a very eventful year in 2012. Mild weather and better than average working conditions meant the Utility Storeroom was busy the entire year. Starting in late January, the Warehouse Supervisor started learning more about the Utility Storeroom Supervisor position. Finding the time to accomplish all that is needed to know about the position was a challenge. On March 29, 2012, Gene Pesek, Utility Warehouse Supervisor retired. Mark Merrill stepped into the position as interim Utility Warehouse Supervisor while still doing the job of Utility Warehouse Clerk. On June 8, 2012, Mark was named as the new Utility Warehouse Supervisor. On October 29, 2012, Scott Meyer was hired to replace Mark as Utility Warehouse Clerk.

- The Storeroom Division was tested during October and November with the Platte Generating Station on shut-down and the Line and Underground Departments going at full speed.
- During 2012, the Utility Storeroom has quoted, purchased, received, and stocked \$1,601,363.89 worth of materials. This represents only the material that is on the inventory system.
- For the year 2012, the Utility Storeroom also pre-tested, sorted, documented and sold the obsolete and burned-up transformers in May of 2012, which earned the Utility Department \$36,490.23. The Storeroom also processed, weighed, stored, and sold \$105,106.64 worth of scrap aluminum, copper, electrical brass and ACSR wire. The Utility Storeroom came through the 2012 audit without any issues.