

The winter storm is still in progress and this is a PRELIMINARY summary.

Summary of UGPR Transmission Issues Related to January 21- xx, 2010 Winter Storm

UGPR experienced a severe winter storm that started the evening of January 21, 2010. The storm started with conditions that resulted in ice formation; freezing rain, drizzle, and heavy fog. The storm then transitioned into snow with heavy winds. UGPR experienced several transmission line outages due to ice loading and high winds. The snow and high winds have lasted for several days and are expected to diminish tonight. This has limited our ability to respond to the outages. Although there were 17 transmission lines out of service, we only experienced long term outages to Western customers at two substations. However, the coops, municipalities, and others taking service from our facilities had issues on their facilities that resulted in over 10,000 customers without power at various times during the storm. The Western long term outages were at Eagle Butte and Faith 115-kV substations. The Eagle Butte substation was de-energized at 0115 on January 22, 2010. Service was temporarily restored at 1529 on the 23, 2010. However, Eagle Butte and Faith substations were de-energized at 0432 on January 24, 2010 and are still out of service. UGPR personnel have been working on restoring the lines to these substations and they have been tested multiple times without success. Due to conditions the lines needed to be patrolled from the ground and access to all of the lines was not possible. Also conditions were such that problems developed as the line was being patrolled. It appears that we will be able to do an aerial patrol on January 25, 2010. A listing of the related outages and other system restrictions is attached.

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Western Area Power Ice Storm Outages Jan 23rd and 24th 2010

1345, Jan 24

Transmission Lines with an "*" have fiber optics in the ground wire

Revisions from prior report are shown in green

Line outages causing or associated with wholesale customer outages

Eagle Butte Substation de-energized since 0115 on January 22nd – Rapid City Electricians installed a portable generator at 1257 on January 23rd to keep station batteries up, heat control building and bring breaker air pressure up to normal. **Service was restored to Eagle Butte from the Maurine source at 1529 on the 23rd, but the station was once again de-energized at 0432. Personnel are currently patrolling the line to try to locate the trouble, but the weather conditions (winds in excess of 40 mph and blowing snow) are limiting their efforts. Until the trouble is located, an anticipated restoration time cannot be provided.**

Oahe – Eagle Butte 115kV line - At least 10 structures are down, will work on line after Eagle Butte – Faith line and service to Eagle butte is restored. Current estimated return date on this line would be middle to latter part of week of January 25th.

Faith – Eagle Butte 115kV line Section of the Maurine – Eagle Butte 115kV line – Damage is two broken structures a couple miles west of Eagle Butte. Plan is to make temporary repairs so we can restore Eagle Butte substation, repair the Oahe – Eagle Butte line and then return to make proper repairs to this line. **Line was restored at 1529 on January 23rd, but relayed again at 0432 on January 24th placing Eagle Butte and Faith substations in the dark. Personnel patrolled the line and found no damage, but the static wire is iced up and is hanging down between the conductors. With the weather conditions (winds in excess of 40 mph and blowing snow) this is obviously a problem and an anticipated restoration time cannot currently be provided.**

The Charlie Creek – Roughrider – Bicentennial - Squaw Gap (ND) 115kV Line relayed at 0534 on January 24th. Weather conditions are such that a line patrol will be difficult. Basin Electric Power Cooperative (owner) maintenance personnel sectionalized at Roughrider and the Roughrider and Bicentennial loads were restored from Squaw Gap at 1301. The Charlie Creek – Roughrider line section remains out pending a line patrol.

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Line outages not causing wholesale customer outages

Basin Electric – NW Mandan – New Salem (ND) 115kV line (DeVaul back fed from MGS Lark) – Problem traced to Moreau Grand Sioux Coop section of line between NW Mandan Tap and NW Mandan. Line remains de-energized and available until repairs can be made by coop. **Line was returned to normal service at 2034 on the 23rd.**

Charlie Creek – Killdeer ND 115kV line – two line patrols found nothing so, decision was made to remove line jumpers on Charlie Creek side of where McKenzie taps this line (approximately 1.5 miles west of Killdeer) so McKenzie loads can be restored from Killdeer1704 the line section between KD and STR 79/1 was energized including MKC Mountain Tap station. The CCR – structure 79/1 open jumpers 115kV line section remains out of service.

Forman ND – Summit 115kV line – multiple structures down (over 20) (Last Report 71 structures) in multiple locations, will take days or weeks to repair. Clearance has been placed on line to facilitate work and crew will make sure crossroads are safe for public.

* Jamestown – Valley City 115kV line – Clearance placed on line to facilitate Fiber Optic OPGW repair and restore numerous communications failures in ND. **Fiber repaired and communications restored at 0304 on January 24th. The line remains out-of-service pending a complete line patrol and a more permanent repair to the fiber (did not string it, just laying on ground currently). Fiber is also hanging down by conductor due to ice load in places and it is not recommended we energize the line due to possible loss of communications again.**

Sioux Falls – Beresford 115kV line – **Line static was found down 3 miles out of Beresford and the crews clipped back the static and the line returned to normal service at 2050 on the 23rd.**

Oahe – Fort Thompson No.1 230kV line – conductor and static wire found down in at least 4 different locations. Anticipate Wednesday of next week before line can be returned to normal service.

Oahe – Fort Thompson No.2 230kV line – conductor and static wire found down in at least 4 different locations. Anticipate Wednesday of next week before line can be returned to normal service.

Oahe – Fort Thompson No.3 230kV line went out at 1831 on January 23rd. Static wire is loaded down with ice and hanging down between the phase conductors (no actual line damage). Winds in excess of 40 mph have been blowing the static into the conductor so line currently remains out until wind goes down or ice falls off of the static. Estimated return time is currently unknown.

*Oahe – Fort Thompson No.4 230kV line – **conductor and static wire found down in one location. Equipment is on site to make repairs, but need wind to die down before we can work on it.**

*Fort Thompson – Huron No.1 230kV line – Clearance placed on line to repair fiber optic ground wire. There is currently no anticipated return date for this line.

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*Fort Thompson – Huron No.2 230kV line – Clearance placed on line to repair fiber optic ground wire. There is currently no anticipated return date for this line.

Antelope Valley Station ND – Broadland 345kV line – 1300 on January 23rd, found a broken static wire and at least 4 structures with bent crossarms (arms are vertical rather than horizontal) by Bowdle SD (east of Glenham). Will be at least 12 days or longer before line returns to normal service (rough anticipated return is February 4th as of now)

Antelope Valley Station ND – Great Plains – No.1 345kV line – Insulators ice coated and flashed over. All load restored almost immediately via the No.2 line and No.1 line will be restored after ice is removed.

The Hettinger – Bowman 230kV Line relayed at 0603 on January 24th. The line which is owned and maintained by Montana Dakota Utilities has been partially patrolled and no damage was found. There is however ice on the conductors and the static that could easily result in the two coming into contact with each other. MDU has another section of this line to patrol with a snow vehicle before we will be assured the only problem is ice related. Consequently, restoration time is currently unknown.

The Charlie Creek – Watford City 115kV line relayed at 0546 on January 24th. Maintenance personnel are patrolling this line in a snow cat, but are in blizzard conditions. No damage known currently known, but patrol has just started (3 miles out)

Communication issues

Restored at 0304 on January 24th.

Other issues

Oahe Generation is limited to 300 MW due to all 4 Fort Thompson lines being out.

Basin 345kV Units (Antelope Valley Station 1 and 2 and Leland Olds 2) Limited to 1215 MW net (125 MW reduction) due to AVS – Broadland 345kV Line outage until some time in February.

Some line repairs will easily run into February.

With the Charlie Creek – Watford City, Charlie Creek – Killdeer, Charlie Creek – Roughrider and Bowman Hettinger lines out, only 2 lines (Williston – Tioga, Belfield – Dawson County) remain tying North Dakota to Eastern Montana. Because of this concern, Fort Peck is generating on the East, the Glendive turbines are running and the Miles City AC-DC-AC Converter Station is being limited in the east-to-west direction and we are working with marketing to bring power in from the west so we can withstand the next contingency.