

**☐ Worker Responsibilities**

- Comply with required federally mandated OSHA requirements and the normal safety practices and policies of your home organization.

**☐ Daily Safety Messages**

- All non-Connexus crew leaders are expected to communicate updated safety messages to their crews at the start of each work day.

**☐ 911 Information**

- KNOW YOUR EXACT LOCATION BEFORE STARTING WORK.
- Notify crew leader and workers about allergies, medications, and medical conditions.
- Ensure your supervisor/crew leader has local storm contact phone number and name and address of all local medical facilities.

**☐ Conduct Job Briefings**

- Before each job and when the scope of the job changes; include all personnel at site.
- Discuss hazards associated with job, work procedures, special precautions, energy source control, PPE, other crews in the area, emergency procedures.

**☐ PPE**

- Hard hat shall be worn at all times at work locations (ANSI Z-89.1).
- Safety eye protection with side shields (ANSI Z-87.1.)
- Safety shoes/boots with crush resistant toes (ASTM-F 2413-05).
- FR clothing must meet OSHA standards and/or your company policy and be rated for hazards per NESC arc flash standards.
- Hearing protection when exposed to levels above 85 decibels.
- High visibility traffic vest (Class 2 or 3) when exposed to traffic.

**☐ Gloving Requirements**

- Class II high voltage rubber gloves or greater are required to be worn at all times whenever an employee is exposed to conductors which may be energized or become energized. Any deviations must be approved by the Connexus Safety Manager or his designee.

**☐ Hot Line Tool Requirements**

- Hot line tools and equipment shall be used to work on energized circuits and equipment when the practices and procedures for rubber gloving do not apply.
- Work shall be performed from a safe position maintaining the minimum approach distance from energized parts.
- Class II high voltage rubber gloves (at a minimum) are required to be worn at all times when using live line tools.

**☐ Use of Pole Banners**

- Pole banners are intended as an informational and work control barrier for working primary radials where switching and tagging procedures allow work without clearances issued by System Ops.
- Other normal crew protections must also take place, such as disconnecting taps and grounding. The banner alone is not a protection method and should never be treated as such.
- Pole banners should be applied on the pole where the open device is located. Qualified crews shall install the pole banners and information tags and they shall remain in place until the work is complete (for the day), all grounds have been removed and all workers and equipment are in the clear. If a pole banner is applied at a work site, contact the person on the tag before starting any work.
- *NEVER ENERGIZE WHEN A POLE BANNER IS APPLIED.*

**☐ Traffic Control**

- Traffic control shall be determined according to the MNDOT Temporary Traffic Control Zone Layout Field Manual.

**☐ System Voltages:** Grounded Wye, Ungrounded Wye, and Delta

- Primary circuits: 7.3kV phase-to-ground, 12.7kV phase-to-phase

**☐ Maximum Switching Transient Voltage**

- 25.6kV (3.5 x phase-to-ground)

**☐ Minimum Approach Distance (MAD)**

- 5.1-15.0 kV = 2'- 2"

**☐ Presence of Hazardous Induced Voltages**

- Possible on underbuilt lines or adjacent to transmission lines

**☐ Are employees exposed to Arc Flash or Flame Hazards?**

- If performing live line work minimize arc flash hazards with appropriate FR clothing and PPE. Request hotline tag protection or place pole top reclosers in non-reclose mode
- If Connexus cannot provide the available arc flash energy or if the conditions listed above cannot be met, then the work must be performed with hot sticks or de-energized.

**☐ Estimated incident energy from electric arc**

- Refer to Arc Flash Safety Quick Reference Chart (page 2)

**☐ Protective Grounds and Equipment Grounding**

- All conductors and equipment shall be treated as energized until tested for voltage, found de-energized and equipotential grounded.
- Equipotential grounding shall be utilized, if not, hot line techniques shall be performed.
- 1/0 Protective grounds have adequate current carrying capacity.

**☐ Possible Hazardous Transfer of Potential if Fault Occurs?**

- Yes, less than 10kA

**☐ Are Devices Designed to Open/Close Circuits Under Load?**

- Yes - fuses, cutouts, reclosers, etc. Ask for specific information if you are unsure

**☐ Known Sources of Electric Energy**

- OH/UG circuits originating from substations supply power. Customer-owned distributed generation may have potential to backfeed if protective switches fail.

**☐ Backfeeds**

- Backfeeding occurs when electric power is induced into the local power grid (eg. generators). Backfeeds shall be discussed in every Safety Brief and necessary precautions taken. List of known devices (page 2).

**☐ Location of Electric Circuits and Equipment**

- Refer to Connexus circuit maps, ask for details if uncertain

**☐ Condition of Poles and Structures**

- Visually inspect before climbing. Unsafe poles are marked with red tag

**☐ Environmental Conditions**

- Outdoors, uneven terrain, possible buried utilities, adjacent to busy roads

**☐ Distribution Switching and Tagging Requirements**

- Energizing or de-energizing of three phase devices will be done only under the direction of a Connexus employee qualified on switching & tagging, or a System Operator.
- Outside utility crews and contractors may work with the approval of local Connexus management on fused (cutouts) taps. The person in charge shall assume responsibility for opening all cutouts, disconnects, jumpers, taps, and other means through which KNOWN sources of electric energy may be supplied.

**☐ Distribution Tree Worker Request for De-energizing**

- A qualified Line Clearance Tree Trimmer (LCTT) may remove branches that are contacting exposed energized conductors or equipment or that are within the minimum approach distances only through the use of insulating equipment.
- Workers shall maintain minimum approach distances and shall not allow conductors to come in contact with their bodies.
- An LCTT may request de-energizing for work on any tree they determine cannot be safely completed with the line energized.
- No tree worker shall place or move their bucket between the primary and other electric and communications lines.

**Environmental Management of Spills**

- Report to Connexus management immediately for instructions
- OSI Environmental Services Spill response, cleanup, and disposal  
Hotline: (1-800-777-8542)
- Over 5 gallons report within 1 hour to MN Duty Officer 1-800-422-0798

**Connexus Contact List**

- System Operations: 763-323-2660, 2661, 2262, 2263
- Line Supervisors: Tim Bergh 763-286-2249  
Tom Hoxter 763-286-1324
- Operations Mgr: Greg Groenjes 763-218-8254
- Vegetation Coord: Brian Weidenfeller 763-286-1161

**ARC FLASH SAFETY QUICK REFERENCE**

with and without Hot Line Tool (HLT)

3 Phase Pad-mount Transformer Hazard Category						
Voltage	kVA	15" Distance		8" Distance		Arc Flash
		Hazard Category		Hazard Category		Boundary
		w/o HLT	w/ HLT	w/o HLT	w/ HLT	w/o HLT (Ft)
120/208	45	1	1	1	1	2
120/208	75	1	1	1	1	2
120/208	112.5	1	1	1	1	3
120/208	150	1	1	1	1	3
120/208	225	1	1	1	1	3
120/208	300	2	2	1	1	4
120/208	500	2	2	1	1	4
120/208	750	1	1	1	1	3
277/480	45	1	1	1	1	1
277/480	75	1	1	1	1	2
277/480	112.5	3	1	1	1	5
277/480	150	3	1	1	1	5
277/480	225	3	1	1	1	10
277/480	300	3	1	1	1	9
277/480	500	N/A	2	1	1	18
277/480	750	3	1	1	1	8
277/480	1000	N/A	1	1	1	15
277/480	1500	N/A	2	1	1	18
277/480	2000	N/A	3	2	1	23

3 Ph Pole-Mounted Transformer Hazard Category						
Voltage	kVA	15" Distance		8" Distance		Arc Flash
		Hazard Category		Hazard Category		Boundary
		w/o HLT	w/ HLT	w/o HLT	w/ HLT	w/o HLT (Ft)
120/208	75	1	1	1	1	2
120/208	150	1	1	1	1	2
120/208	300	1	1	1	1	2
120/208	500	1	1	1	1	2
120/208	750	1	1	1	1	2
277/480	75	1	1	1	1	2
277/480	150	3	1	1	1	4
277/480	300	3	1	1	1	5
277/480	500	4	2	1	1	7
277/480	750	N/A	1	1	1	10

Hazard Risk Category	Clothing Description	Clothing Layers	Min Arc Rating of PPE (cal/cm <sup>2</sup> )
0	Long Sleeve Shirt & Denim Jeans	1	0
1	FR Shirt & Pants + Hard Hat	1	4
2	Cotton Underwear + FR Shirt & Pants + Hard Hat & Face Shield + Hearing Protection	1 or 2	8
3	Cotton Underwear + FR Shirt & Pants + FR Coverall + Hard Hat & HRC 3 Flash Suit Hood + Hearing Protection	2 or 3	25
4	Cotton Underwear + FR Shirt & Pants + HRC 4 Flash Suit + Hard Hat + Hearing Protection	3 or more	40

**CUSTOMER OWNED GENERATORS**

Account Name	Gen Size (kW)	Circuit
Anoka County - Highway Department	230	BUL03
Anoka County - Human Services	800	APT24
Anoka County - Medical Examiners	550	ENP03
Anoka County - Parks Activity Center		BUL03
Anoka County - Sheriffs Department	550 or 500?	BUL06
Camilia Rose Care Center	250	VTN03
City of Big Lake - Water Treatment		
City of Big Lake - WWTF	1000	RML05
City of Blaine - City Hall	350	APT02
City of Blaine - Public Works Sites - WWTF	800	JON01
City of Isanti - Water Treatment	250	IST04
City of Oak Grove - City Hall	100	EBL05
City of St. Francis - Public Works	600	STF02
City of St. Francis - Water Treatment	600	STF01
City of Vadnais Heights - Public Works	450	VDH03
City of Zimmerman - 4th Ave Well Pump		ZIM07
City of Zimmerman - WWTF	750	ZIM06
Connexus Energy	500	ENP01
County Market - Andover	750	CRK02
County Market - St. Francis	1,250	STF02
Cub Foods - Coon Rapids (Riverdale)	1,000	CRK09
Cub Foods - White Bear Lake	1,000	VDH02
Earl M. Jorgensen (EMJ)	400	APT01
Festival Foods - Andover (Knowlans)	750	BUL04
HOM Furniture - Coon Rapids	1,000	WDT04
IC Systems	650	VDH21
Medtronics	2,000	VTN05
Medtronics	2,000	VTN06
Metro Transit - Big Lake	1,000	RML04
Metro Transit - Blaine	250	LXN04
Metro Transit - Foley		WDT05
National Sports Center - Expansion Rink	1,000	APT25
National Sports Center - Super Rink	1,000	APT25
Northern Counties		AKA04
Northtown Mall - Blaine (1)	1,500	NTN06
Northtown Mall - Blaine (2)	1,500	NTN06
Rainbow Foods - Blaine	800	NTN03
Soderquist Market		
Spire Credit Union		CRK01
Target - Andover	1000 OR 750?	BUL04
Target - Blaine	750 OR 1000?	APT21
Target - Coon Rapids	750	CRK05
Walmart - Coon Rapids	600	CRK09

**Hospitals near Connexus Energy, 14601 Ramsey Blvd NW, Ramsey MN 55303**

<b>Name</b>	<b>Address</b>	<b>Phone</b>	<b>Distance(Miles)</b>
<b>Mercy Hospital</b>	4050 Coon Rapids Boulevard Coon Rapids, MN 55433-2586	763-236-6000	5.20
<b>Maple Grove Hospital</b>	9875 Hospital Drive Maple Grove, MN 55369	763-581-1000	7.26
<b>Unity Hospital</b>	550 Osborne Road NE Fridley, MN 55432-2799	763-236-5000	12.80
<b>North Memorial Health Care</b>	3300 Oakdale Avenue North Robbinsdale, MN 55422-2926	763-520-5200	16.44
<b>Monticello-Big Lake Hospital</b>	1013 Hart Boulevard Monticello, MN 55362-8230	763-295-2945	16.77
<b>Regency Hospital of Minneapolis</b>	1300 Hidden Lakes Parkway Golden Valley, MN 55422-4299	763-588-2750	17.27
<b>Hennepin County Med Center</b>	701 Park Avenue South Minneapolis, MN 55415-1829	612-873-3000	20.28
<b>Univ of Minnesota Medical Ctr</b>	2450 Riverside Avenue Minneapolis, MN 55454-1400	612-672-6000	21.27
<b>Abbott Northwestern Hospital</b>	800 East 28th Street Minneapolis, MN 55407-3799	612-863-4000	21.57
<b>Methodist Hospital</b>	6500 Excelsior Boulevard Saint Louis Park, MN 55426-4702	952-993-5000	21.72
<b>Fairview Lakes Reg Health Care</b>	5200 Fairview Boulevard Wyoming, MN 55092-8013	651-982-7000	22.69
<b>Fairview Northland Health Serv</b>	911 Northland Drive Princeton, MN 55371-2173	763-389-1313	23.25
<b>St John's Hospital</b>	1575 Beam Avenue Saint Paul, MN 55109-1126	651-232-7000	24.70
<b>Fairview Southdale Hospital</b>	6401 France Avenue South Edina, MN 55435-2199	952-924-5000	24.82
<b>Cambridge Medical Center</b>	701 South Dellwood Street Cambridge, MN 55008-1920	763-689-7700	25.22
<b>Bethesda Hospital</b>	559 Capitol Boulevard Saint Paul, MN 55103-2101	651-232-2000	25.46
<b>Regions Hospital</b>	640 Jackson Street Saint Paul, MN 55101-2595	651-254-3456	25.89
<b>St Joseph's Hospital</b>	69 West Exchange Street Saint Paul, MN 55102-1053	651-232-3000	26.12
<b>United Hospital</b>	333 North Smith Avenue Saint Paul, MN 55102-2389	651-241-8000	26.17
<b>Woodwinds Health Campus</b>	1925 Woodwinds Drive Woodbury, MN 55125	651-232-0100	31.54