

10/78:

Busswork - 4/0 ACSR

Ground Grid - 2/0 & 40 Cu., H.S.

Susp. Ins. 10" Clevis type.

1983:

Maint. Grd. Grid Test = .25

6/97:

7 yr. Maint.: changed out regulators (WO # 2494)

cover up on equipment, change leads on transf. Arrestors, pin cap insulators,
danger signs, test transf., switch maint., used Mobile Sub/Reg.

Trailer, Ground Grid Test = .390

9-98:

Mounted two decoy owls for bird control

9/23/03:

Installed new Hot Stick Tube; PE/CB

12/16/03:

ROTATION: "" CORRECT "" with meter leads hooked:

A-B-C: LEFT to RIGHT @ REGULATORS; PE

8/16/04:

7 Yr. Maint.; test & paint transf., replaced arr. With new

butyl style, double ground equip., switch maint., change regulators

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Exhibit DV18 - Central Power maintenance history for substation
Dakota Valley Electric Cooperative, Inc.

86 PU-22-366 Filed 12/19/2022 Pages: 3
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(WO # 3010), removed overhead XO ground & re-grounded with 2/0 cu. From grid, replaced corner post grounding clamps, ground grid test = .35, Mobile sub NW side of sub, Reg. Trailer on South side between fence & overhead exit circuits; PE

9-20-06:

WO# 3108 Central power crews built a new substation next to the old substation. The transformer was moved to the new substation and tested. Installed a new 10 KV ermco station power transformer. Installed new pt's & ct's, ground grid test .35, and installed new kearney switches. Also applied wildlife cover up and owl and screecher. Installed a new siemens panel L.H

9/7/09:

Installed fans on transformer and hooked up for capacity increase. RB & RM

9/12/16

WO#3928 performed capacity increase and 7 yr. maintenance CPEC did switch maintenance on high and low side switches. Installed bird covers on 10 KV lightning arrestors, station power transformer, and changed out one 10KV lightning arrestor. Changed out regs and double grounded and changed out power transformer. Tested and changed out CTS to 300:5. on high side switch conduit. This had to be redone to make SMD-1A fuses work. The high side switch open stop broke off, made field repair. LN

Date	Ref	Engineering Description	Additions (Retirements)	Balance
Note: With consolidation, original sub came over from James Valley. This sub was completely retired with completion of new Ellendale subst & workorder 3108. Only transformer, regulators, fusing & hotstick/container were reused. See CPR's for old sub.				
Aug-74	J-1697	Consol	3 - 45kv fuses (Net of accum) (2)	85.45
Nov-75	J-1843	WO 407	2500kva transformer #H879540C (\$17,372.74)	2,468.67
Oct-79	J-2405	WO 824	Hotstick & container	46.44
Jun-04	J-6127	WO 3010	3 - 7.62kv 150amp Type JFR regs (#32339,32340,32341) (1)	18,383.13
Dec-08	J-6493	WO 3108	Rebuild substation:	
			Substation steel 69kv highside	17,821.28
			Substation steel 12.5kv lowside	29,342.37
			Bus alum, sprrts, cncntrs etc	5,829.21
			3 - Transformer CT's accubate 150.5 JKW5A (2)	4,539.48
			3 - Fuse unit live parts SMD-50 46/69kv	3,249.05
			3 - Transformer PT's 60:1 JVV5A	5,069.81
			Switch air break 45kv 600amp vertical	6,751.68
			3 - In line disconnect switches 15kv 600amp	827.64
			12 - Disconnect switches 15kv 600amp	10,572.38
			3 - Regulator bypass switches 15kv	5,598.34
			12 - OCR bypass switches	16,219.19
			Switch operator ground platform	824.64
			6 - Arrestors 10/8.4 MCOV dist	369.05
			Ground grid (15 rods, cable, clmps, crtrdgs etc)	11,313.43
			Control cable & 2 lbs #2 pwr cable	1,716.26
			DE - shoes, stratiline & cmprsn jmprs	1,684.60
			Cable 3/8 HSS (55lbs)	100.98
			Cable 1/0 7-strand (10lbs)	41.06
			Cable 4/0 7-strand (14 lbs)	24.77
			Cable 4/0 ACSR (160 lbs)	585.53
			Concuat, boxes etc.	2,354.01
			Fuse cutout 15kv 200amp (incl links)	381.73
			3 - Fuse alum offset for S/C	178.02
			Fence - complete	10,039.00
			Substation meter building	14,958.40
			Wildlife protection & coverups (1)	3,318.91
			Meter socket	898.54
			Trnsfrmr 10kva 7.2-120/240v (station pwr)	1,437.75
			6 - 500watt lights	440.05
			3 - insulator 15kv station post	315.65
			14 - Insulator 69kv station post	4,373.20
			24 - Insulator poly suspnsn DE 15kv	560.57
			2 - insulator poly 55kv post long stud	253.45
			12 - Insulator 115kv suspnsn Y-clevis	1,844.84
			Reg pad - reinf cage	2,181.44
			Bldg pad - reinf cage	1,884.37
			10 - L/S/HS leg foundations - reinf cage	3,903.77
			Transformer pad	4,367.04
			4x8 substation sign	998.34
			Danger high voltage sign	20.49
			Costs From Materials Salvaged & Used From Old Substation:	
			46kv Fusing (\$794.19) (2)	943.69
			2500kva transformer #H879640C (\$17,372.74)	4,844.20
			3 - 7.62kv 150amp type JFR regs (#32339,32340,32341) (\$1) (1)	943.69
			Hotstick & container (\$185.60)	209.71
			Site prep, soil testing, survey & grave!	22,351.64
Dec-06	J-6503	J-6503	3 - Regulator postion indicators - add'l costs to regs above (1)	1,079.57
Dec-09	J-6960	WO 3414	Capacity increase - add fans to transformer above:	
			2 - Transformer fans horizontal 1/6hp 230v (2)	2,024.05
			Transformer cooling fan controller	1,241.17
			Transformer indicator liquid temp	2,098.88
Dec-15	J-7828	WO 3594	3 - Regulators 7.62kV Type JFR (#32246,32885,32886)	22,686.32
			3 - 7.62kv 150amp Type JFR regs (#32339,32340,32341) (1)	(19,326.82)
			Wildlife protection & coverups	(3,316.91)
			3 - Regulator postion indicators - add'l costs to regs above	(1,079.57)
Sep-18	J-7942	WO 3928	Capacity increase after Fullerton add'n:	
			Transformer 3ph 5mva 43.8-7.6kV (#40475)	27,417.93
			3 - 7.62kv 328/367 Type JFR regs (#32672,32673,32674)	47,309.66
			3 - Transformer CT's 300/5 JKW-5	4,387.17
			3 - Fuse live parts SMD 1A 46/69kv	5,785.71
			7 - Fuse unit SMD-1A 46kV 125amp	7,165.81
			Cnncntrs, bus alum pipe, etc for new transformer	495.13
			3 - 45kv fuses (2)	(1,029.14)
			2500kva transformer #H879640C	(7,312.87)
			3 - Transformer CT's accubate 150.5 JKW5A	(4,539.48)
			3 - Fuse unit live parts SMD-50 46/69kv	(3,249.05)
			2 - Transformer fans horizontal 1/6hp 230v	(2,024.05)
			Transformer cooling fan controller	(1,241.17)
			Transformer indicator liquid temp	(2,098.88)
			3 - Regulators 7.62kV Type JFR (#32246,32885,32886)	(22,686.32)

228,564.61 - essentially the rebuilt sub cost

92,561.41 Added in 2016 Capacity upgrade which removed work done in 2009.

Total: 281,262.08