

COLORADO COORDINATED PLANNING GROUP (CCPG) 2006 NERC/WECC COMPLIANCE STUDY SCOPE

1. INTRODUCTION

The purpose of this study is to help CCPG participants meet selected WECC/NERC compliance standards via the coordinated planning process. Included are the transmission system performance assessment standards TPL-001, TPL-002, TPL-003, and TPL-004.

This study will also include a reactive margin analysis to meeting the WECC Reactive Margin Study requirement.

The study area consists of the states of Wyoming and Colorado or electrically described as the area bounded by Yellowtail, TOT4A, TOT1A, and TOT2A.

This report may not completely meet the compliance requirements and participants may have to supplement this information to meet their needs and avoid sanctions.

The study is performed using PTI version 29.4.

2. BASE CASES

Base cases are required for the operating year (current year or year following the current year based upon timing of studies conducted related to the reporting time frame) and the longer term (6-10 year) planning horizon. Longer term analysis not required for TPL-004.

The base cases are available from the Western Electricity Coordinating Council (WECC). The operating year case is the 2006 heavy summer (06hs4a1pv29). The long term case is the 2016 heavy summer (16hs1p). The 16hs1p case is still under review but should be available when the study effort begins.

In the steady state analysis all high voltage ($\geq 115\text{kV}$) bus voltages and non-radial branch flows in the CCPG area are monitored for criteria violations.

The transient stability cases include the detailed Sidney DC tie, Stegall DC tie, and Rapid City DC Tie models. All buses in the study area are monitored for voltage and major generating units in the area are monitored for stability.

3. CRITERIA

a) Steady State System Intact

Voltages are maintained between 1.05 p.u. and 0.95 p.u. Transmission line and transformer loading may not exceed 100% of continuous rating. Shunt

reactive device switching and transformer tap adjustments are enabled. Phase shifters are locked.

b) Steady State Contingency

Voltages are maintained between 1.10 p.u. and 0.90 p.u. Platte River Power minimum bus voltage is 0.92 p.u. Transmission line and transformer loading may not exceed 100% of continuous rating or an established emergency rating. Automatic shunt reactive device switching is enabled. Transformer tap adjustments are locked. Phase shifters are locked.

c) Transient Stability

The system is positively damped and the low voltage swing will not drop below 0.70 p.u.

4. PLANNING STANDARDS AND MEASUREMENTS

The NECR/WECC Table 1 is provided in Appendix A. Table 1 contains the category A, B, C, and D outage definitions. Appendix B provides the transient disturbance descriptions and Appendix C provides the steady state outage lists for each category.

5. PROCEDURE

The 06hs and 16hs cases will be tested with the outages described in section 4 and the criteria described in section 3. Violations will be noted and flagged for follow-up analysis by the affected transmission owner.

A voltage stability analysis will also be performed on the 06hs and 16hs cases. The study will recreate the analysis performed in the CCPG 2002 reactive margin study.

Appendix A – NERC/WECC TABLE 1

Table I. Transmission Systems Standards — Normal and Contingency Conditions

| Category | Contingencies | Components Out of Service | System Limits or Impacts | | | | |
|--|--|--------------------------------------|---|---|--------------------------|--|--------------------------------|
| | Initiating Event(s) and Contingency Component(s) | | Thermal Limits | Voltage Limits | System Stable | Loss of Demand or Curtailed Firm Transfers | Cascading ^c Outages |
| A - No Contingencies | All Facilities in Service | None | Normal | Normal | Yes | No | No |
| B - Event resulting in the loss of a single component. | Single Line Ground (SLG) or 3-Phase (3Ø) Fault, with Normal Clearing: 1. Generator 2. Transmission Circuit 3. Transformer Loss of a Component without a Fault. | Single Single Single Single | Applicable Rating ^a (A/R) A/R A/R A/R | Applicable Rating ^a (A/R) A/R A/R A/R | Yes Yes Yes Yes | No ^b No ^b No ^b No ^b | No No No No |
| | Single Pole Block, Normal Clearing: 4. Single Pole (dc) Line | Single | A/R | A/R | Yes | No ^b | No |
| C - Event(s) resulting in the loss of two or more (multiple) components. | SLG Fault, with Normal Clearing: 1. Bus Section 2. Breaker (failure or internal fault) | Multiple Multiple | A/R A/R | A/R A/R | Yes Yes | Planned ^d Planned ^d | No No |
| | SLG or 3Ø Fault, with Normal Clearing, Manual System Adjustments, followed by another SLG or 3Ø Fault, with Normal Clearing: 3. Category B (B1, B2, B3, or B4) contingency, manual system adjustments, followed by another Category B (B1, B2, B3, or B4) contingency | Multiple | A/R | A/R | Yes | Planned ^d | No |
| | Bipolar Block, with Normal Clearing: 4. Bipolar (dc) Line Fault (non 3Ø), with Normal Clearing: 5. Double Circuit Towerline | Multiple Multiple | A/R A/R | A/R A/R | Yes Yes | Planned ^d Planned ^d | No No |
| | SLG Fault, with Delayed Clearing: 6. Generator 7. Transmission Circuit 8. Transformer 9. Bus Section | Multiple Multiple | A/R A/R | A/R A/R | Yes Yes | Planned ^d Planned ^d | No No |

| | | | | | | |
|---|--|--------------|----------------|-------------------------|----------------|--|
| <p>D^e – Extreme event resulting in two or more (multiple) components removed or cascading out of service</p> | <p>3Ø Fault, with Delayed Clearing (stuck breaker or protection system failure):</p> <table border="0"> <tr> <td>1. Generator</td> <td>3. Transformer</td> </tr> <tr> <td>2. Transmission Circuit</td> <td>4. Bus Section</td> </tr> </table> <hr/> <p>3Ø Fault, with Normal Clearing:</p> <p>5. Breaker (failure or internal fault)</p> <hr/> <p>Other:</p> <ol style="list-style-type: none"> 6. Loss of towerline with three or more circuits 7. All transmission lines on a common right-of-way 8. Loss of a substation (one voltage level plus transformers) 9. Loss of a switching station (one voltage level plus transformers) 10. Loss of all generating units at a station 11. Loss of a large load or major load center 12. Failure of a fully redundant special protection system (or remedial action scheme) to operate when required 13. Operation, partial operation, or misoperation of a fully redundant special protection system (or remedial action scheme) for an event or condition for which it was not intended to operate 14. Impact of severe power swings or oscillations from disturbances in another Regional Council. | 1. Generator | 3. Transformer | 2. Transmission Circuit | 4. Bus Section | <p>Evaluate for risks and consequences.</p> <ul style="list-style-type: none"> • May involve substantial loss of customer demand and generation in a widespread area or areas. • Portions or all of the interconnected systems may or may not achieve a new, stable operating point. • Evaluation of these events may require joint studies with neighboring systems. • Document measures or procedures to mitigate the extent and effects of such events. • Mitigation or elimination of the risks and consequences of these events shall be at the discretion of the entities responsible for the reliability of the interconnected transmission systems. |
| 1. Generator | 3. Transformer | | | | | |
| 2. Transmission Circuit | 4. Bus Section | | | | | |

Footnotes to Table I.

- a) Applicable rating (A/R) refers to the applicable normal and emergency facility thermal rating or system voltage limit as determined and consistently applied by the system or facility owner.
- b) Planned or controlled interruption of generators or electric supply to radial customers or some local network customers, connected to or supplied by the faulted component or by the affected area, may occur in certain areas without impacting the overall security of the interconnected transmission systems. To prepare for the next contingency, system adjustments are permitted, including curtailments of contracted firm (non-recallable reserved) electric power transfers.
- c) Cascading is the uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.
- d) Depending on system design and expected system impacts, the controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, or the curtailment of contracted firm (non-recallable reserved) electric power transfers may be necessary to maintain the overall security of the interconnected transmission systems.
- d) A number of extreme contingencies that are listed under Category D and judged to be critical by the transmission planning entity(ies) will be selected for evaluation. It is not expected that all possible facility outages under each listed contingency of Category D will be evaluated.

**APPENDIX B – TRANSIENT DISTURBANCE DISCRIPTION
CATEGORY A, B, C, AND D**

CATEGORY B

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|--------------|------------|---------------|--------------------------|
| ARCHER 230 | 3 PHASE | 5 CYCLES | ARCHER -AULT 230 |
| ARCHER 230 | 3 PHASE | 5 CYCLES | ARCHER -STEGALL 230 |
| ARCHER 230 | 3 PHASE | 5 CYCLES | ARCHER -HAYDEN 230 |
| AULT 230 | 3 PHASE | 5 CYCLES | AULT- ARCHER 230 |
| AULT 230 | 3 PHASE | 5 CYCLES | AULT-WELD 230 NO. 1 |
| BADWTR 230 | 3 PHASE | 5 CYCLES | BADWTR-SPENCE 230 |
| BADWTR 230 | 3 PHASE | 5 CYCLES | BADWTR-THERM 230 |
| CARRDRAW 230 | 3 PHASE | 5 CYCLES | CARRDRAW - BUFFALO 230 |
| CARRDRAW 230 | 3 PHASE | 5 CYCLES | CARRDRAW - HARTZOG 230 |
| CARRDRAW 230 | 3 PHASE | 5 CYCLES | CARRDRAW - WYODAK 230 |
| CHEROKEE 230 | 3 PHASE | 5 CYCLES | CHEROKEE-DENVER TERM230 |
| COMANCHE 230 | 3 PHASE | 5 CYCLES | COMANCHE-MIDWAY 230 |
| COMANCHE 230 | 3 PHASE | 5 CYCLES | COMANCHE-FULLER 230 |
| CRAIG 230 | 3 PHASE | 5 CYCLES | CRAIG-HAYDEN 230 NO.1 |
| CRAIG 230 | 3 PHASE | 5 CYCLES | CRAIG-RIFLE 230 |
| CURECANT230 | 3 PHASE | 5 CYCLES | CURECANTI- LOSTCAN 230 |
| CURECANT230 | 3 PHASE | 5 CYCLES | CURECANTI - MP 230 |
| CURECANT230 | 3 PHASE | 5 CYCLES | CURECANTI -NORTHFORK 230 |
| CURECANT230 | 3 PHASE | 5 CYCLES | CURECANTI -PONCHA 230 |
| HAYDEN 230 | 3 PHASE | 5 CYCLES | HAYDEN -ARCHER 230 |
| HAYDEN 230 | 3 PHASE | 5 CYCLES | HAYDEN -CRAIG 230 |
| HAYDEN 230 | 3 PHASE | 5 CYCLES | HAYDEN -GOREPASS 230 |
| LANGE 230 | 3 PHASE | 5 CYCLES | LANGE-LOOKOUT 230 |
| LANGE 230 | 3 PHASE | 5 CYCLES | LANGE-RCSOUTH 230 |
| LRS 345 | 3 PHASE | 4 CYCLES | LRS-AULT 345 |
| LRS 345 | 3 PHASE | 4 CYCLES | LRS-STORY 345 |
| MALTA 230 | 3 PHASE | 5 CYCLES | MALTA-MTE 230 |
| MIDWAY 230 | 3 PHASE | 5 CYCLES | MIDWAY-WCANON 230 |
| PAWNEE 230 | 3 PHASE | 5 CYCLES | PAWNEE-QUINCY 230 |

CATEGORY B (continued)

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|----------------|------------|---------------|------------------------|
| PAWNEE 230 | 3 PHASE | 5 CYCLES | PAWNEE-DAN PARK 230 |
| RAWHIDE 230 | 3 PHASE | 5 CYCLES | RAWHIDE-AULT 230 |
| RAWHIDE 230 | 3 PHASE | 5 CYCLES | RAWHIDE-TIMBERLINE 230 |
| RD NIXON 230kV | 3 PHASE | 5 CYCLES | RD NIXON-FULLER 230kV |
| ST.VRAIN 230 | 3 PHASE | 5 CYCLES | FSV-VALMONT 230 |
| STEGALL 230 | 3 PHASE | 5 CYCLES | STEGALL-ARCHER 230 |
| STEGALL 230 | 3 PHASE | 5 CYCLES | STEGALL-DJ 230 |
| STEGALL 230 | 3 PHASE | 5 CYCLES | STEGALL-WESTHILL 230 |
| STEGALL 230 | 3 PHASE | 5 CYCLES | STEGALL-SID 230 |
| VALMONT 230 | 3 PHASE | 5 CYCLES | VALMONT-ST.VRAIN230 |
| WYODAK 230 | 3 PHASE | 5 CYCLES | WYODAK-CARRDRAW 230 |
| WYODAK 230 | 3 PHASE | 5 CYCLES | WYODAK-RENO 230 |
| WYODAK 230 | 3 PHASE | 5 CYCLES | WYGEN UNIT |
| WYODAK 230 | 3 PHASE | 5 CYCLES | WYODAK-HUGHES 230 |
| WYODAK 230 | 3 PHASE | 5 CYCLES | WYODAK-OSAGE 230 |
| YELOWTLP 230 | 3 PHASE | 5 CYCLES | YELOWTLP-FRANNIE 230 |
| YELOWTLP 230 | 3 PHASE | 5 CYCLES | YELOWTLP-YELLOWBR 230 |

CATEGORY C

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|-------------|------------|---------------|-------------------------|
| ARCHER 230 | SLG | 5 CYCLES | ALL ARCHER 230 BRANCHES |
| AULT 230 | SLG | 5 CYCLES | AULT-WELD230 #1 |
| | | 15 CYCLES | AULT-WELD230 #2 |
| BADWATER230 | SLG | 5 CYCLES | BADWTR-SPENCE230 |
| | | 15 CYCLES | BADWTR-THERM 230 |
| CASPER 230 | SLG | 5 CYCLES | CASPER-MIDWEST 230 |
| | | 15 CYCLES | CASPER-RIVERTON 230 |
| CASPER 230 | SLG | 5 CYCLES | CASPER-MIDWEST 230 |
| | | 15 CYCLES | CASPER-DJ 230 |

CATEGORY C (continued)

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|---------------------|------------|---------------|---------------------------|
| CHEROKEE | SLG | 5 CYCLES | CHEROKEE-RIVERDALE230 |
| | | 15 CYCLES | CHEROKEE-GLENN230 |
| COMANCHE 230 | SLG | 5 CYCLES | COMANCHE-MIDWAY230 |
| | | 15 CYCLES | COMANCHE-FULLER230 |
| CRAIG 230 | SLG | 5 CYCLES | CRAIG-HAYDEN 230 |
| | | 15 CYCLES | CRAIG-RIFLE230 |
| CRAIG 230 | SLG | 5 CYCLES | CRAIG-HAYDEN 230 |
| | | 15 CYCLES | CRAIG 345/230 |
| CRAIG 345 | SLG | 4 CYCLES | CRAIG-AULT345 |
| | | 12 CYCLES | CRAIG-RIFLE345 |
| CURCANTI 230 | SLG | 5 CYCLES | CURE-MORROW230 |
| | | 15 CYCLES | CURE-LOSTCAN230 |
| CURCANTI 230 | SLG | 5 CYCLES | CURE-MORROW230 |
| | | 15 CYCLES | CURE-NORTHFORK230 |
| CURCANTI 230 | SLG | 5 CYCLES | CURE-PONCHA230 |
| | | 15 CYCLES | CURE-NORTHFORK230 |
| CURCANTI 230 | SLG | 5 CYCLES | CURE-PONCHA230 |
| | | 15 CYCLES | CURE 230/115 |
| CURCANTI 230 | SLG | 5 CYCLES | CURE-LOSTCAN230 |
| | | 15 CYCLES | CURE 230/115 |
| FULLER 230 | SLG | 5 CYCLES | FULLER-CTTNWD230 |
| | | 15 CYCLES | NIXON-FULLER230 |
| HAYDEN 230 EAST BUS | SLG | 5 CYCLES | EAST BUS 230 LINES |
| HAYDEN 230 WEST BUS | SLG | 5 CYCLES | WEST BUS 230 LINES |
| LRS 345 | SLG | 4 CYCLES | LRS-AULT345 |
| | | 12 CYCLES | LRS UNIT 2 |
| MIDWAY 230 | SLG | 5 CYCLES | ALL MIDWAY WAPA 230 LINES |
| PAWNEE 230 | SLG | 5 CYCLES | PAWNEE-QUINCY230 |
| | | 15 CYCLES | PAWNEE-DAN PARK230 |

CATEGORY C (continued)

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|------------------|------------|---------------|--------------------------|
| RAWHIDE 230 | SLG | 5 CYCLES | RAWHIDE-AULT230 |
| | | 15 CYCLES | RAWHIDE-TIMBERLINE230 |
| RDNIXON 230 | SLG | 5 CYCLES | NIXON-FULLER 230 |
| | | 15 CYCLES | NIXON-ARIES230 |
| RDNIXON 230 | SLG | 5 CYCLES | NIXON-MIDWAY 230 |
| | | 15 CYCLES | NIXON-ARIES230 |
| RIVERTON 230 | SLG | 5 CYCLES | RIV-THERM 230 |
| | | 15 CYCLES | RIV-WYOPO 230 |
| STEGALL 230 BUS | SLG | 5 CYCLES | STEGALL 230 LINES |
| ST.VRAIN 230 | SLG | 5 CYCLES | ST.VRAIN-FT.LUPTON230 |
| | | 15 CYCLES | ST.VRAIN-VALMONT230 |
| THERMOP 230 | SLG | 5 CYCLES | THERM-RIVER230 |
| | | 15 CYCLES | THERM-BAD 230 |
| WYODAK 230 | SLG | 5 CYCLES | WYGEN UNIT |
| | | 12 CYCLES | WYODAK-RENO 230 |
| WYODAK 230 | SLG | 5 CYCLES | WYODAK-RENO 230 |
| | | 12 CYCLES | WYGEN UNIT |
| WYODAK 230 | SLG | 5 CYCLES | WYODAK-HUGHES |
| | | 12 CYCLES | WYODAK-CARRDRAW 230 |
| WYODAK 230 | SLG | 5 CYCLES | WYODAK-HUGHES |
| | | 12 CYCLES | WYODAK 230/69 XFMRS 1&2 |
| WYODAK 230 | SLG | 5 CYCLES | WYODAK-OSAGE |
| | | 12 CYCLES | WYGEN UNIT |
| Y.TAIL PP230 BUS | SLG | 5 CYCLES | Y.TAIL PP-Y.TAIL BR 230 |
| | | 15 CYCLES | Y.TAIL PP-GOOSE-SHERD230 |

CATEGORY D

| FAULTED BUS | FAULT TYPE | CLEARING TIME | CLEARED BRANCH |
|-----------------|------------|---------------|----------------------------|
| AULT 345 | 3 PHASE | 4 CYCLES | ALL AULT 345 |
| CRAIG 345 | 3 PHASE | 4 CYCLES | ALL CRAIG 345 |
| CRAIG 345 | 3 PHASE | 4 CYCLES | CRAIG-AULT&HAYDEN-ARCH 230 |
| DANIEL PARK 230 | 3 PHASE | 5 CYCLES | ALL DANIEL PARK 230 |
| DJ 230 | 3 PHASE | 5 CYCLES | ALL DJ 230 |
| LRS 345 | 3 PHASE | 4 CYCLES | ALL LRS 345 |
| MIDWAY 230 | 3 PHASE | 5 CYCLES | ALL MIDWAY 230 |
| PAWNEE 230 | 3 PHASE | 5 CYCLES | ALL PAWNEE 230 |
| RIFLE 345 | 3 PHASE | 4 CYCLES | ALL RIFLE 345 |
| WYODAK 230 | 3 PHASE | 5 CYCLES | ALL WYODAK 230 |

**APPENDIX C – STEADY STATE OUTAGE LISTING
CATEGORY B, C, AND D OUTAGES**

APPENDIX C – 2006 HEAVY SUMMER STEADY STATE CATEGORY B, C, AND D OUTAGES

OUTAGE DESCRIPTION – CATEGORY B

ALL BRANCHES OPERATED AT 230KV OR GREATER IN CCPG AREA

OUTAGE DESCRIPTION – CATEGORY C

1. WYODAK-RENO 230 & WYODAK – CARRDRAW 230 OUTAGE
2. WYODAK-HUGHES230 & WYODAK-CARRDRAW 230 OUTAGE; WYODAK 1H326 FAIL
3. WYODAK-HUGHES230 & HUGHES – LOOKOUT 230 OUTAGE
4. LOOKOUT – HUGHES 230 & LOOKOUT – YELLOWCREEK 230 OUTAGE
5. WESTHILL – SOUTHRC 230 & WESTHILL – STEGALL 230 OUTAGE
6. SOUTHRC – WESTHILL 230 & LANGE – LOOKOUT 230 OUTAGE
7. SOUTHRC – LANGE 230 & SOUTHRC – WESTHILL 230 & SRC XFRM OUTAGE
8. LANGE – LOOKOUT 230 & LANGE – SOUTHRC 230 & LNG XFMR OUTAGE
9. WYODAK-HUGHES230 & WYODAK – OSAGE 230 OUTAGE
10. WYODAK-RENO230 & WYGEN UNIT OUTAGE
11. WYODAK-HUGHES230 & WYODAK 230/69 OUTAGE; WYODAK 1H328 FAIL
12. WYODAK-OSAGE230 & WYGEN UNIT OUTAGE; WYODAK 1H334 FAIL
13. LOSS OF ARCHER 230 MAIN BUS – BREAKER FAILURE SLG
14. CRAIG-RIFLE345 & CRAIG-AULT345 OUTAGE; CRAIG 896 FAIL
15. LRS-AULT & LRS UNIT 3 OUTAGE; LRS 2996 FAIL
16. RAWHIDE-AULT230 & RAWHIDE-TIMBERLINE230 OUTAGE; DBL CIRCUIT TOWER
17. NIXON-FULLER230 & NIXON-ARIES230 OUTAGE
18. DRAKE S-KEKLER W115 & DRAKE N-ATMELDTP115 OUTAGE
19. KELKER E-TEMPLTON115 & KEKLER W-ROCKISLD115 OUTAGE
20. KELKER E-TEMPLTON115 & TEMPLTON-ROCKISLD115 OUTAGE
21. FULLER-CTTNWD230 & NIXON-FULLER230 OUTAGE
22. AULT-WELD230 #1 DBL CIRCUIT
23. BADWATER-SPENCE&BADWATER-THERM; BADWATER 1184 FAIL
24. CRAIG-HAYDEN230&CRAIG-RIFLE230; CRAIG 886 FAIL
25. CRAIG-HAYDEN230#2&CRAIG345/230; CRAIG 286 FAIL
26. CURCANTI-MORROW&CURECANTI-LOSTCAN; CUR 1082 FAIL
27. CURCANTI-MORROW&CURECANTI-NORTHFORK; CUR 682 FAIL
28. CURCANTI-PONCHA&CURECANTI-NORTHFORK; CUR 786 FAIL
29. CURCANTI-PONCHA&CURECANTI230/115; CUR 882 FAIL
30. CURCANTI-LOSTCAN&CURECANTI230/115; CUR 1282 FAIL
31. HAYDEN 230 EAST MAIN BUS – BREAKER FAILURE SLG
32. HAYDEN 230 WEST MAIN BUS – BREAKER FAILURE SLG
33. STEGALL 230 MAIN BUS – BREAKER FAILURE SLG
34. Y.TAILBR-Y.TAILPP230&Y.TAIL-GOOSE230; Y.TAILPP 1H296 FAIL
35. DJ-SPENCE&DJ-CASPER230 DBL CIRCUIT

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36. DJ-SPENCE&DJ-YELLOW230; DJ 1H212 FAIL
37. CASPER-MIDWEST&CASPER-RIVERTON230
38. CASPER-MIDWEST&CASPER-DJ230
39. RIVERTON-THERM&RIVERTON-WYOPO230; RIV 1H112 FAIL
40. THERM-RIVERTON&THERM-BADWATER230; THERM 1H224 FAIL
41. MIDWAY WAPA 230 BUS
42. AULT-LRS&AULT345/230
43. CRAIG-AULT&AULT345/230
44. AULT-ARCHER&AULT345/230
45. AULT-WELD&AULT345/230
46. AULT-WELD&AULT-RAWHIDE230
47. AULT-ST.VRAIN&AULT-TIMBERLINE230
48. AULT-RAWHIDE&AULT-TIMBERLINE 230
49. TIMBERLINE-RAWHIDE&TIMBERLINE-AULT230
50. STVRAIN-FT.LUPTON&ST.VRAIN-NIWOT230
51. LONGPEAK-BOYD&LONGS230/115
52. LONGS230/115&LONGPEAK-TERRY115
53. LONGS230/115&LONGPEAK-DELCAM115
54. STVRAIN-LONGS&STVRAIN-NIWOT230
55. CHEROKEE-RIVERDALE&CHEROKEE-GLENN230
56. COMANCHE-MIDWAY&COMANCHE-FULLER230
57. PAWNEE-QUINCY&PAWNEE-DANPARK 230

OUTAGE DESCRIPTION – CATEGORY D

1. CRAIG-AULT 345 AND HAYDEN-ARCHER 230
COMMON CORRIDOR
2. LRS 345 BUS
LOSS OF STATION
3. PAWNEE 230
LOSS OF STATION
4. DANIEL PARK 230 BUS
LOSS OF STATION
5. MIDWAY WAPA 230 BUS
LOSS OF STATION
6. CRAIG 345 BUS
LOSS OF STATION
7. AULT 345 BUS
LOSS OF STATION
8. RIFLE 345 BUS
LOSS OF STATION
9. DJ 230 BUS
LOSS OF STATION
10. WYODAK 230 BUS
LOSS OF STATION