

Feasibility Study 2008 – G9 (Re-Study)

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Rocky Mountain Region

 **Western Area Power Administration**

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Executive Summary

Interconnection queue position 2008-G9 requested interconnection at Western Area Power Administration's (Western) existing Wray Substation near Wray, Colorado. The project was requested to be studied as both an Energy Resource (ER) and a Network Resource (NR).

The requested in-service date is December 2010. Current plans are to use 67 General Electric 1.5 MW wind turbines for a rated nameplate of 100.5 MW. A Western Electricity Coordinating Council (WECC) 2010-2011 Heavy Winter (2011HW) base case was used for analysis.

For either an ER or NR interconnection, Western will require a 1200 A, four breaker ring bus at the point of interconnection in the Wray Substation yard. The estimated cost for this work is \$2.7M.

As an ER, it was determined that 55.5 MW of generation could be interconnected at Western's Wray Substation without immediate adverse impacts on the system.

As a NR, power flow analysis reveals the proposed wind farm addition has a negative impact on two Western 115 kV transmission lines: Wray to Wray Tap and Archer to Pine Bluffs. The wind farm addition has a negative impact on the 115/230 kV, 100 MVA transformer at Tri-State Generation and Transmission's Burlington Substation, as well. Upgrading the two transmission lines and the transformer will be required to mitigate negative impacts resultant from the proposed 2008-G9 addition. The estimate for upgrading the transmission lines is \$10.8M. An upgrade to the Burlington 115/230 kV, 100 MVA transformer will require further consultation with the owner. A rough estimate to replace this transformer is \$3M.

The short circuit analysis indicates no requirement for equipment upgrades based on increases in fault current and fault duty levels.

The total cost of these system changes (i.e. substation and line work) is estimated at \$13.8M+. This does not include any costs for transmission from the proposed wind farm to the point of interconnection.

I. Introduction

Request 2008-G9 desires a wind farm interconnection to Western's 115 kV transmission system at Western's Wray Substation. The purpose of this study is to determine the feasibility of interconnecting 100.5 MW of wind generation at this point. Scheduled service commencement date is December 2010. The wind farm is currently planned to consist of 67 General Electric 1.5 MW, 60 Hz wind turbine generators supplying power through a 34.5 kV collector bus and a 110 MVA 34.5/115 kV step-up transformer. A single line diagram displaying the proposed location is shown in Figure 1.

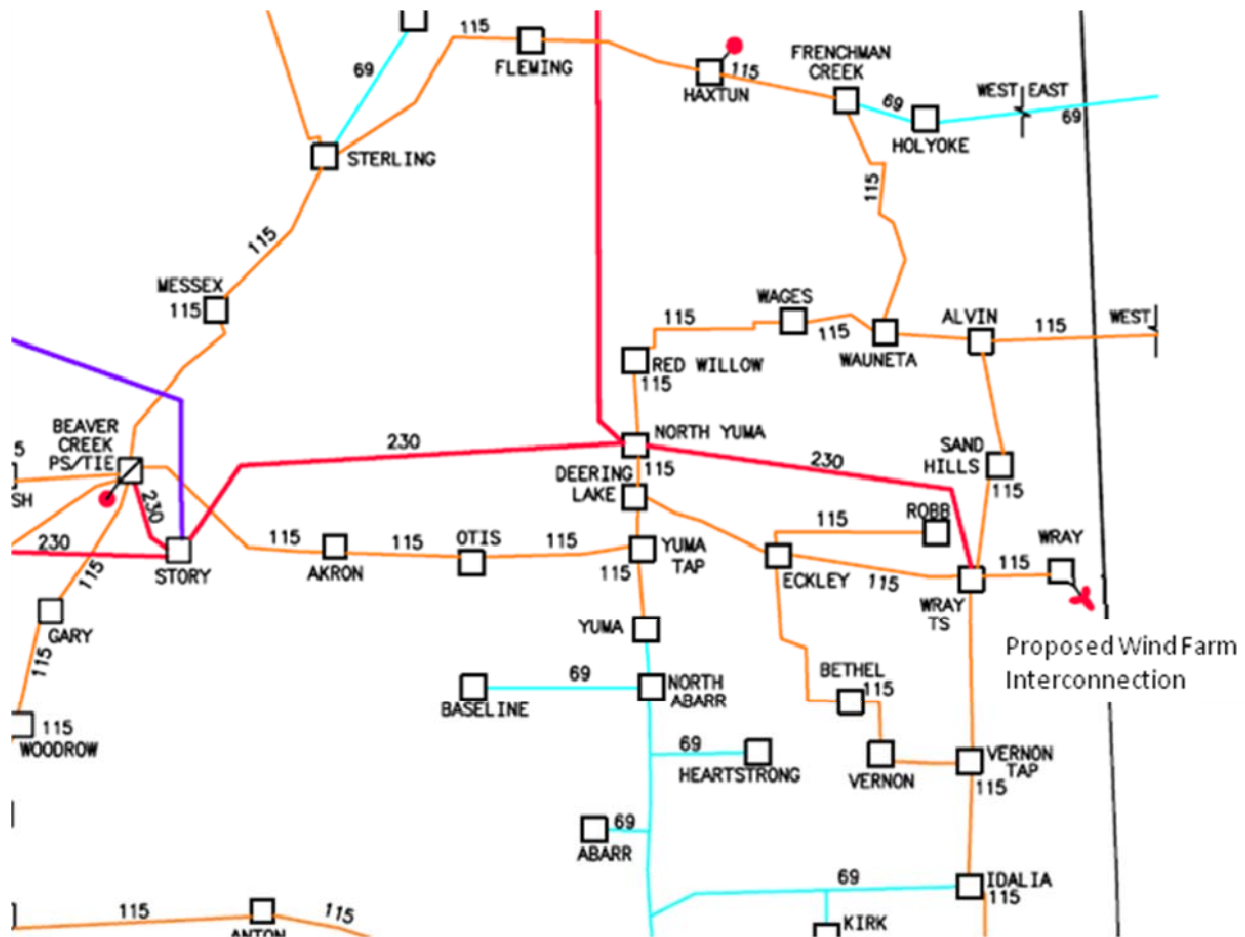


Figure 1: Map of major transmission lines residing in the area of request 2008-G9 proposed 100.5 MW wind farm

Also included in this study is an estimate of interconnection costs. Cost estimates included in this report are only for power circuit breakers and upgrades to existing facilities required for interconnection. Other costs for transformers, radial transmission line (to connect proposed generation),

communications, land, engineering, environment, etc. are not included in these estimates. These additional costs as well as refinement of estimates provided in this report can be determined in a Facility Study.

II. Methodology

A. Energy vs. Network Resource

The Interconnection Customer selected NR Interconnection Service and ER Interconnection Service. The customer must select either NR or ER prior to the Facilities Study.

ER studies identify if there are any system conditions that would allow for the interconnection and sale of the proposed generation without the requirement of system upgrades. Such sale is contingent on available transmission.

A NR allows the proposed generation to operate regardless of system parameters such as loading on specific transmission lines, voltages, or path loadings. This is accomplished by requiring upgrades to system elements that meet or exceed reliability criteria as a result of interconnecting the proposed generation. NR Interconnection Service in and of itself does not convey transmission service.

B. TOT Description

Within the western interconnection there are 80 defined power constraint paths. A path's constraint is due to a power branch limitation. The limitation can be either a thermal, voltage or stability constraint. The proposed wind farm impacts TOT3, also known as Path 36. TOT3 comprises the following transmission lines:

Archer to Ault 230 kV metered at Ault
Laramie River to Ault 345 kV metered at Laramie River
Laramie River to Story 345 kV metered at Laramie River
Cheyenne to Ponnequin 115 kV metered at Cheyenne
Sidney to Sterling 115 kV metered at Sidney
Sidney to Spring Canyon 230 kV metered at Sidney
Cheyenne to Ault 230 kV metered at Cheyenne¹

A single line diagram depicting TOT3 is shown in Figure 2. Although the proposed generation interconnection is not located on any TOT3 transmission line, this interconnection's location is electrically close to

¹ This transmission line will become a new TOT3 element once construction is completed. Currently, this project is scheduled for completion in late 2009.

North Yuma Substation. A TOT3 element emanates from this substation.

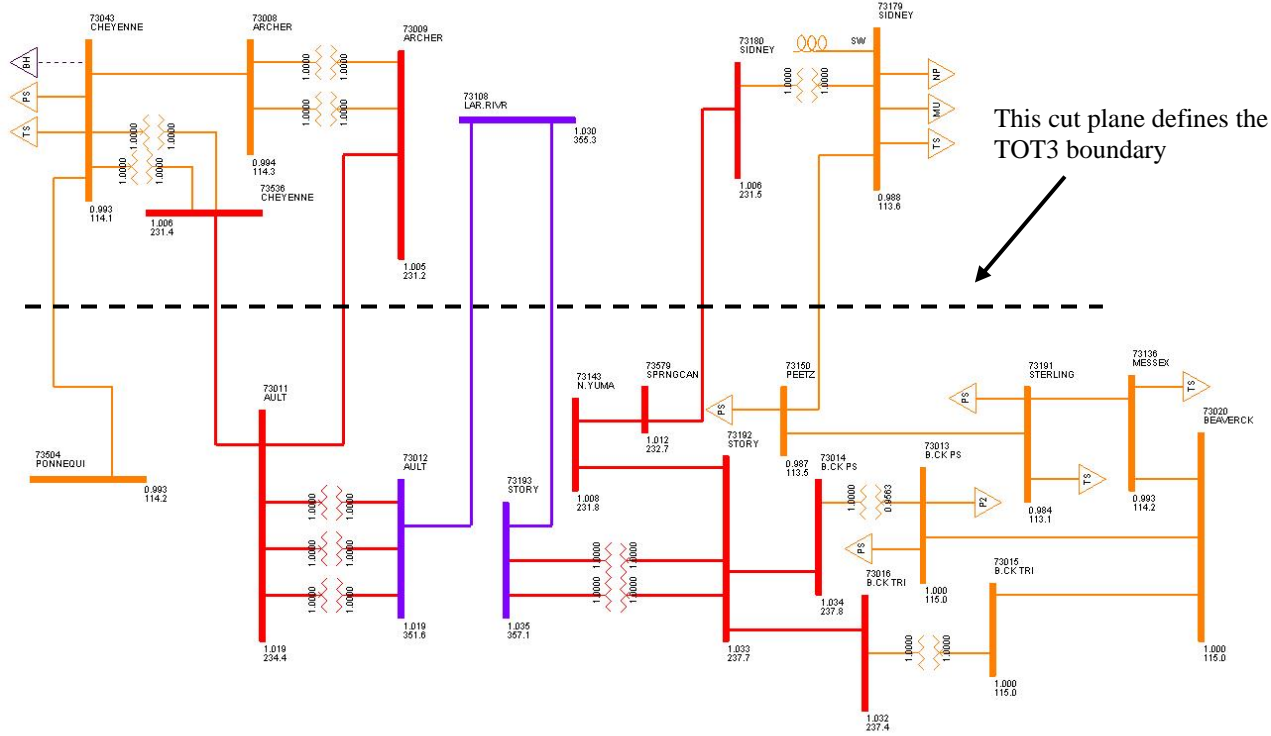


Figure 2: TOT3 Boundary Definition

A determination of available transfer capacity is based on single contingency analysis. The transmission system with the proposed interconnected generation must adhere to criterion found in Section IV of this report. TOT 3 transfers will be adjusted until the addition of the proposed generation violates operating criteria.

C. Delivery of Power

At the time of this feasibility study, 2008-G9 does not have an associated transmission request.

D. Study Objectives

- 1) Determine the amount of existing capacity on the transmission system at the proposed point of interconnection.
- 2) Determine system upgrades needed to accommodate the full output of the proposed generation.

III. Base Case

Power flow analysis utilized a WECC 2011HW base case.

Request 2008–G9 has designated the use of 67 GE 1.5 MW turbines. Models of the wind turbines used a constant voltage schedule of 1.05 p.u. at the turbine’s collector bus. The stressed TOT3 study used a combination of generation levels at Laramie River Station, Sidney, Stegall, Pawnee, and Colorado Power Project (Brush generation). Generation and transfers at these key facilities are used to determine TOT3 transfer capability. One of the 24 TOT3 operating points was studied. This “Upper Left Hand Point” typically determines maximum TOT3 transfer capability.

Existing operating procedures are to be taken into consideration when conducting studies. The Spring Canyon 34.5/230 kV transformer was tripped upon the Spring Canyon – North Yuma 230 kV line trip.

A. Inclusions to request/study

Active higher priority transmission service and/or generator interconnection requests included in the base case in this study are listed below:

- 2005-G1/2007-T1
- 2006-G2
- 2007-G3/2007-T17
- 2007-G5/2008-T14
- 2007-G10
- 2008-G4/2008-T23
- 2008-G5/2008-T22
- 2008-T15

According to the Federal Energy Regulatory Commission (FERC), higher priority Transmission Service and/or Generator Interconnection requests must be included regardless of their in-service date. Also, Transmission Service requests take precedence over Interconnection requests. This is done in conjunction with the Tariff so any project lower in the queue is not negatively affected.

If any of these requests are withdrawn, the results and conclusions of this study could be invalidated and this interconnection request may require a restudy.

Existing upgrades to the transmission system, Owl Creek and Spring Canyon substations, not shown in WECC base case, were included in the base case.

IV. Criteria

A. System Intact

Voltages will remain within the required 0.95 to 1.05 per unit range. Transmission lines and transformers may not exceed 100 % of their nominal rating.

B. Contingencies

Voltages will remain between 0.90 and 1.10 per unit. Transmission lines and transformers may not exceed either 100% of their nominal rating or an established emergency rating.

V. Results

A. Benchmark Case

The benchmark case used was the WECC 2011HW base case with all inclusions listed in Section III.A prior to the insertion of the proposed generation.

i. Acceptable/existing overloads

There are no existing overload or undervoltage conditions prior to the proposed interconnection.

B. Energy Resource

As an ER, the network evaluation determined that without any upgrades performed, 55.5 MW of generation could be interconnected at Western's Wray substation. The limiting factor is the Burlington 115/230 kV, 100 MVA transformer during an outage of the Burlington 115/230 kV, 167 MVA transformer under a stressed TOT3 scenario.

C. Network Resource

The addition of the wind farm causes a 105.1% overload on the Wray Tap to WrayWAPA 115 kV line section with the system intact.

During the stressed TOT3 study, the Archer-Pine Bluffs line experiences an overload of 103.1% during a Laramie River Station-Ault line outage. Also, the Burlington 115/230 kV, 100 MVA transformer overloads at 104.7% of its rating during an outage of the Burlington 115/230 kV, 167 MVA transformer.

It was noted that the addition of wind generation at Western's Wray substation decreases the loading on the TOT3 path.

VI. Short Circuit Analysis

A. Fault Duty

The 2008-G9 interconnection was modeled in Aspen OneLiner using the transformer information provided by the customer and typical data. The transformer, which provides the main point of interconnection at the wind farm, is defined as follows:

- 66/88/110 OA/FA/FA MVA
- 115/34.5/13.8-kV wye-wye with a buried delta
- $z_1 = 9\%$ at 66 MVA
- $z_0 = 6.7\%$ at 66 MVA

The customer did not supply all three winding impedances necessary to properly model this transformer. Therefore, typical impedances were used to model the effect of the buried delta tertiary.

Fault current levels at 115-kV prior to the interconnection are as follows:

- single line-to-ground = 5,595 amps rms symmetrical
- three phase = 5,115 amps rms symmetrical

Fault current levels at 115-kV with the addition of the Wind Farm line and transformer are as follows:

- single line-to-ground = 5,754 amps rms symmetrical
- three phase = 5,115 amps rms symmetrical

The increase in fault duty is minimal and should not be an issue for the present rating of electrical equipment.

The affect of the wind turbines on possible fault duty was ignored due to the fact that the turbines are only capable of providing minimal current for short duration.

B. Basic System Protection Issues

2008-G9 will connect to the Western's Wray Substation by means of an estimated 12 mile 115-kV line. Dedicated 115-kV breakers should be used at each end of the line. If fiber is run along with the new line then dual SEL-311L current differential relays at each terminal are recommended for line protection.

C. System Restoration Issues

Automatic reclosing may be used on the power circuit breaker at Wray Substation for testing and re-energizing the line to the Wind Farm upon fault clearing. In this case, Western would employ single shot auto-reclosing of the Wray Substation breaker for Hot Bus-Dead Line conditions only. An adequate open interval would be used to allow the Wind Farm interconnection to be opened during line faults.

Closing and control of the power circuit breaker located at the Wind Farm at 115-kV would be the responsibility of 2008-G9.

VII. Cost Estimates

The proposed interconnection will require construction of a four (4) breaker ring bus and an expansion of the Wray Control Building whether ER or NR is chosen. The existing 115 kV bus at Western's Wray Substation has no breakers and no room to expand within the substation boundaries.

Cost estimates are at the conceptual level and for construction costs only. Cost estimates are given in 2008 US Dollars.

A. Energy Resource Cost Estimates

i. Upgrades

As stated above, the interconnection at Wray Substation will require construction of a new 115 kV bus.

ii. Cost Estimate

A 4 breaker 115 kV ring bus cost is estimated at \$2,700,000. This is the cost of changing the tap at Wray substation to a ring bus and expanding the control building to accommodate the breaker controls. Any equipment and associated installation costs beyond the substation yard to the wind farm would be the responsibility of 2008-G9.

B. Network Resource Cost Estimates

i. Upgrades

As a NR, upgrades to the Wray-Wray Tap and Archer-Pine Bluffs 115 kV lines are required in addition to the bus construction at Wray Substation. Additionally, an upgrade of the Burlington 115/230 kV, 100 MVA transformer will be needed.

ii. Cost Estimate

Upgrading the two mile Wray-Wray Tap 115 kV line with 477 ACSR is estimated to cost \$700,000. The estimate to upgrade the Archer-Pine Bluffs 115 kV line with 29.1 miles of 636 ACSR is \$7,400,000. The Burlington transformer is not Western-owned equipment. A rough estimate to replace this transformer is \$3,000,000, but further consultation with the owner, Tri-State Generation and Transmission Association, Inc., will be required to remediate this overload. Thus, the total estimated cost for the new bus at Wray substation, upgrading the two line sections and replacing the transformer is \$13,800,000+.

VIII. Conclusion

The feasibility study shows that there is 55.5 MW of transmission capacity for interconnection as an ER. The total cost to interconnect at Wray Substation as an ER is estimated at \$2.7M.

The estimate for interconnection as a NR is estimated at \$13.8M+. This includes the cost of the interconnection and upgrades to the Wray-Wray Tap and Archer-Pine Bluffs 115 kV lines. This also includes a rough estimate for an upgrade to the Burlington 115/230 kV, 100 MVA transformer.

The short circuit analysis indicates no requirement for equipment upgrades based on increases in fault current and fault duty levels.

All costs estimates are in 2008 US dollars. Additional information on all cost estimates can be found in Article 11 of Western's Large Generator Interconnection Agreement (LGIA). The LGIA explains additional cost responsibilities. All cost estimates do not include costs associated with planning, land and rights, environmental, surveys, geologic investigations, designs and specifications or construction supervision.

Appendices

A. Overload Spreadsheet

Monitored Element	Label	2008-G9 prior	2008-G9 post	2008-G9 prior w/ TOT3 Stressed	2008-G9 post w/ TOT3 Stressed
73008 ARCHER 115.00 70311 PINE BLUFF 115.00 1	LRS_AULT				103.1% 133MVA (1X)
73035 BURLNGTN 115.00 73036 BURLNGTN 230.00 1	BUR1_BUR2-2				104.7% 105MVA (1X)
73225 WRAY TAP 115.00 73331 WRAYWAPA 115.00 1	LNC_LNC1		106.0% 94MVA (111X)		
73225 WRAY TAP 115.00 73331 WRAYWAPA 115.00 1	SD_SDDC				106.0% 94MVA (111X)

1. Contingency legend (partial)

<u>LABEL</u>	<u>EVENTS</u>
LRS_AULT	: TRIP LINE FROM BUS 73108 [LAR.RIVR 345.00] TO BUS 73012 [AULT 345.00]
PAWN_QUIN	: TRIP LINE FROM BUS 70311 [PAWNEE 230.00] TO BUS 70343 [QUINCY 230.00]
BUR1_BUR2-2	: TRIP LINE FROM BUS 73035 [BURLNGTN 115.00] TO BUS 73036 [BURLNGTN 230.00] CKT 2
LNC_LNC1	: TRIP LINE FROM BUS 73531 [LINCOLNT 230.00] TO BUS 73532 [LINCOLN1 13.800]
SD_SDDC	: TRIP LINE FROM BUS 73180 [SIDNEY 230.00] TO BUS 73181 [SIDNEYDC 230.00]

2. Additional Information








The shown rating of 133 MVA on the Archer-Pine Bluff line is an assumed rating based on upgrading the line for interconnection requests earlier in the queue for which studies were unavailable at the time of the performance of this study. The present rating of this line is 98 MVA. The loading on this line prior to the addition of this interconnection request is 129.56 MVA which requires upgrading the existing line. The line loading following the addition of this interconnection request is 133.35 MVA which causes an overload of the assumed upgraded rating of this line.

The Burlington Transformer Outage is an of a 167 MVA transformer which causes and overload of the 100 MVA transformer that is in parallel with the 167 MVA transformer. Prior to the addition of the interconnection request the loading on the 100 MVA transformer is 92.49 during this outage. Following the addition of the interconnection request, the loading on the 100 MVA transformer is 105.5 MVA.

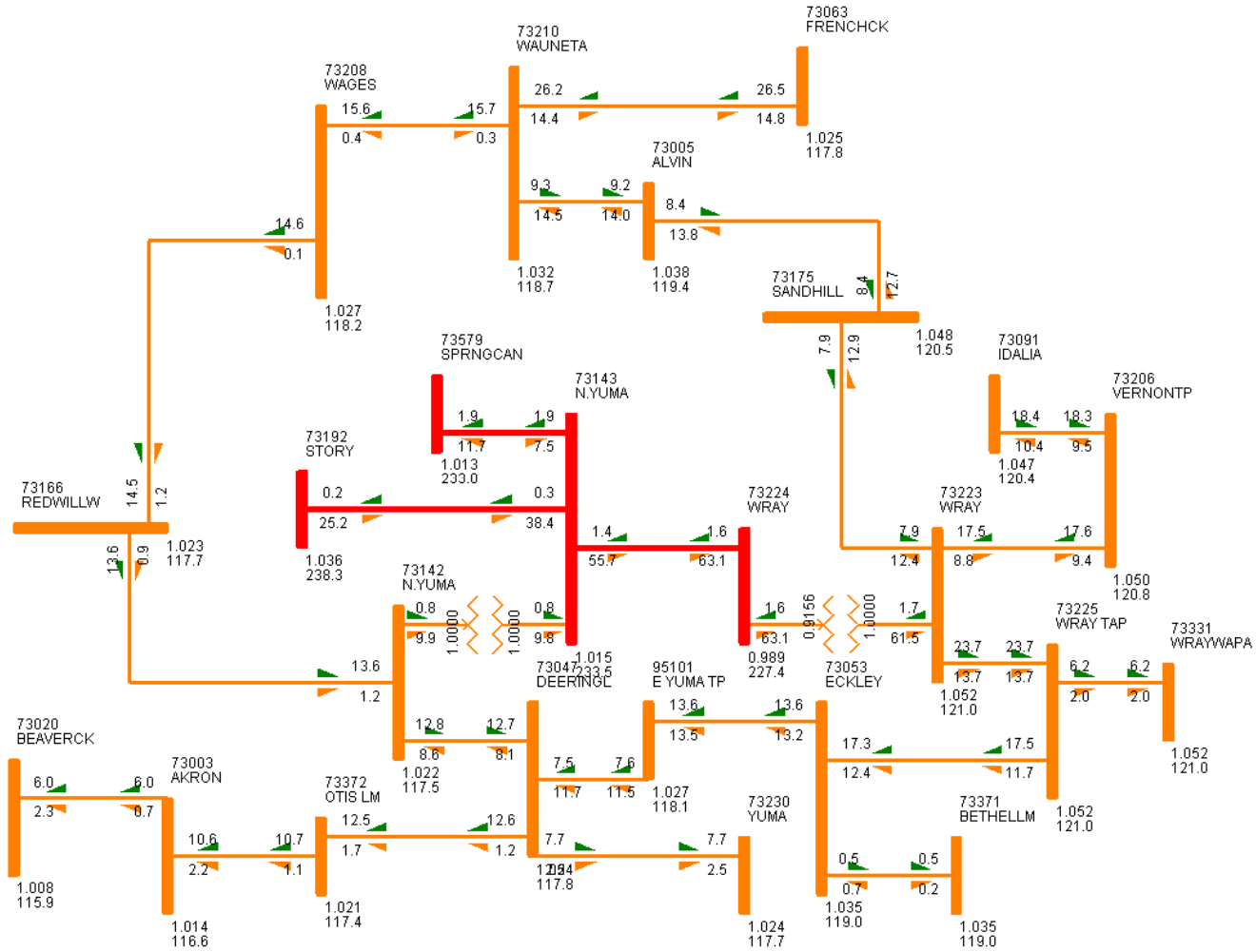
The Wray-Wray Tap line is presently rated at 85 MVA. The loading on this line in the base case and all outages prior to the interconnection request is 6.5 MVA flowing towards Western's Wray Substation. Following the addition of the interconnection request, this flow changes to 93.96 MVA out of Western's Wray Substation in a non-stressed TOT3 condition and 93.78 MVA during a stressed TOT3 situation. This line is overloaded after the addition of the interconnection request prior to any contingencies. In a non-stressed TOT3 condition, the outage of the Lincoln generator unit 1 step-up transformer causes the line flow on the Wray-Wray Tap line to increase to 94.08 MVA which is the largest of the 111 contingencies causing overloads on this line. In the stressed TOT3 situation, the outage of the Sidney-Sidney DC converter station line causes the line flow on the Wray-Wray Tap line to increase to 94.61 MVA which is the largest of the 111 contingencies causing overloads on this line.

B. Single Line Diagrams

1. Voltage Legend

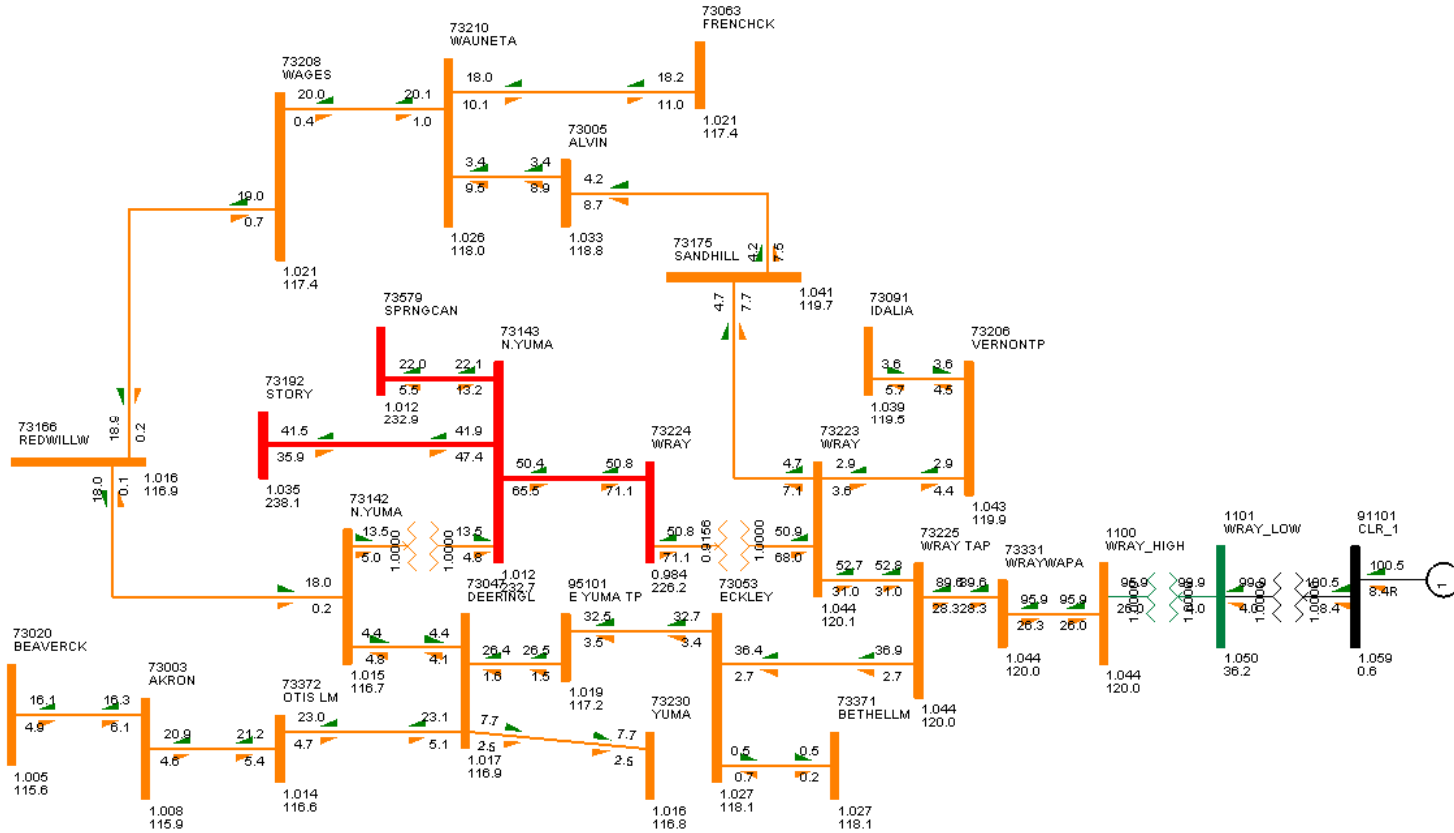
	PURPLE = 345KV
	RED = 230KV
	PINK = 138KV & 161KV
	ORANGE = 115KV
	CYAN = 57KV & 69KV
	GREEN = 11.4KV - 46KV
	BLACK = BELOW 11KV

2. System Intact slider w/o Project



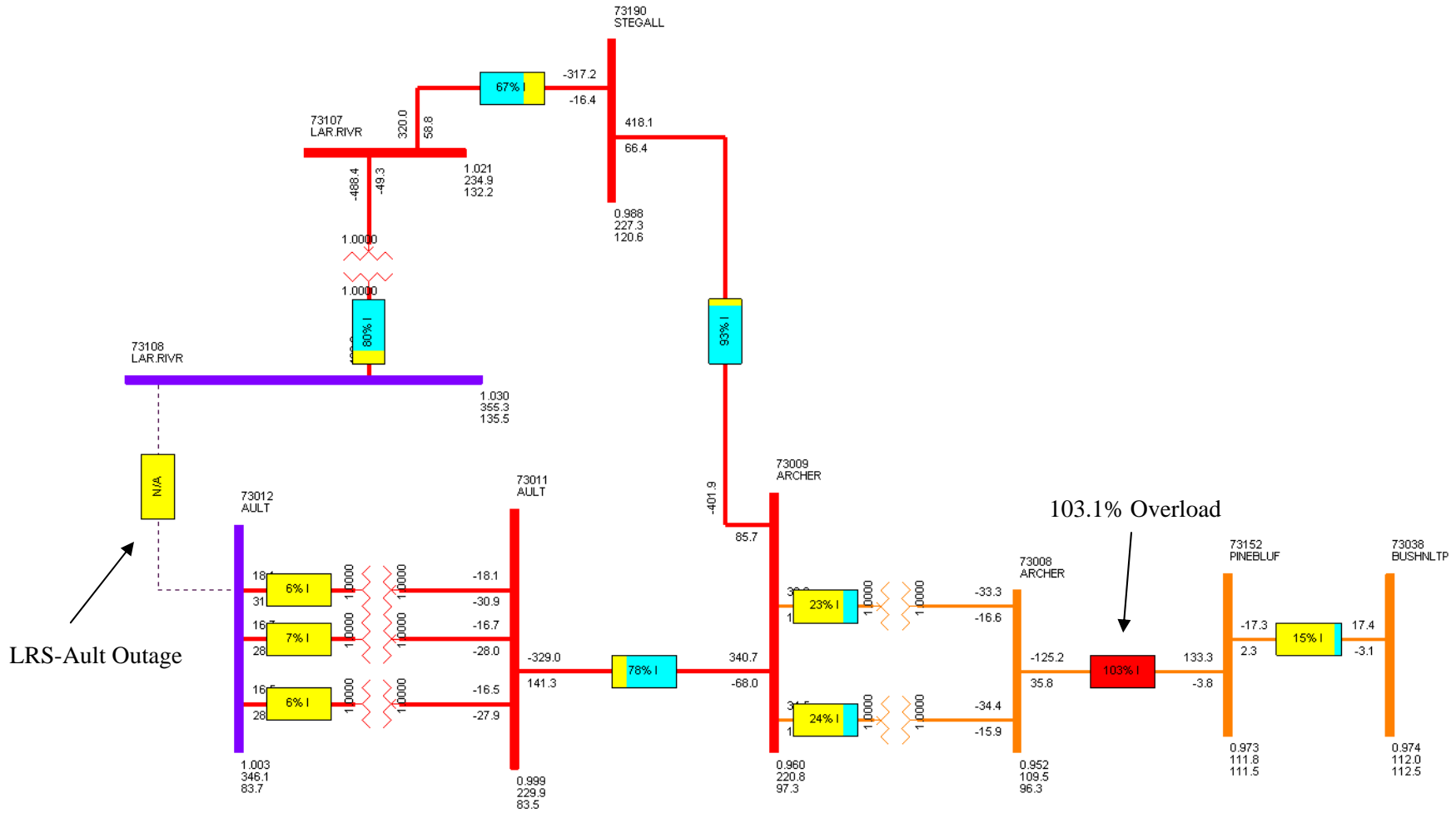
B-2

3. System Intact slider with Project

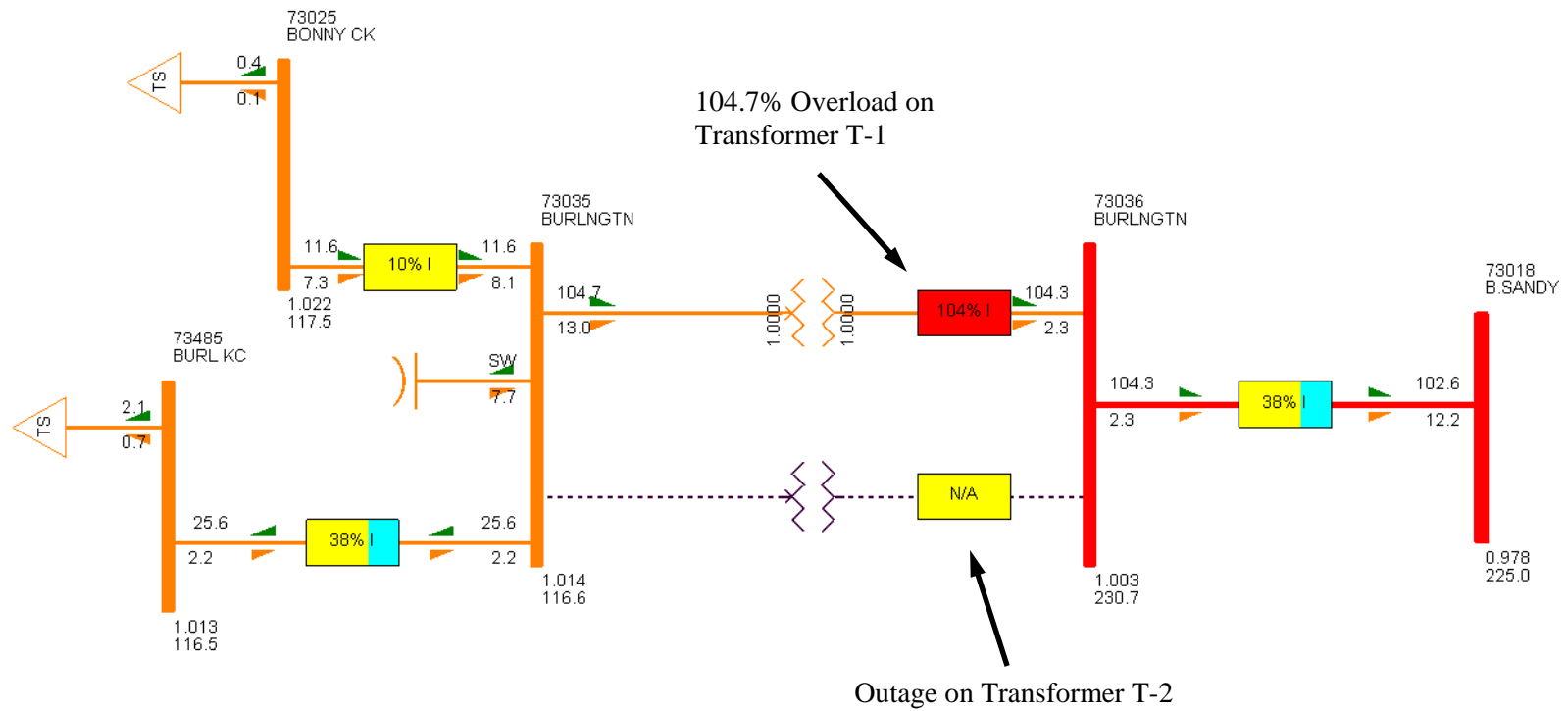


4. Sliders depicting overloads

a. Laramie River Station-Ault 345 kV Line Outage during TOT3 Stress



b. Burlington 115/230 kV, 167MVA Transformer Outage during TOT3 Stress



C. Contingency Legend (full)

<u>LABEL</u>	<u>EVENTS</u>
LRS_AULT	: TRIP LINE FROM BUS 73108 [LAR.RIVR 345.00] TO BUS 73012 [AULT 345.00]
LRS_STY	: TRIP LINE FROM BUS 73108 [LAR.RIVR 345.00] TO BUS 73193 [STORY 345.00]
STG_07G5	: TRIP LINE FROM BUS 73190 [STEGALL 230.00] TO BUS 94301 [2007G5 230.00]
07G5_DJ	: TRIP LINE FROM BUS 94301 [2007G5 230.00] TO BUS 65420 [DAVEJOHN 230.00]
ARH_SG	: TRIP LINE FROM BUS 73009 [ARCHER 230.00] TO BUS 73190 [STEGALL 230.00]
STY_PAWN	: TRIP LINE FROM BUS 73192 [STORY 230.00] TO BUS 70311 [PAWNEE 230.00]
STG_LRS	: TRIP LINE FROM BUS 73190 [STEGALL 230.00] TO BUS 73107 [LAR.RIVR 230.00]
LRS_DJ	: TRIP LINE FROM BUS 73107 [LAR.RIVR 230.00] TO BUS 65420 [DAVEJOHN 230.00]
LRS345_230	: TRIP LINE FROM BUS 73107 [LAR.RIVR 230.00] TO BUS 73108 [LAR.RIVR 345.00]
SID230_115	: TRIP LINE FROM BUS 73180 [SIDNEY 230.00] TO BUS 73179 [SIDNEY 115.00]
STG230_115	: TRIP LINE FROM BUS 73189 [STEGALL 115.00] TO BUS 73190 [STEGALL 230.00]
STY345_230	: TRIP LINE FROM BUS 73192 [STORY 230.00] TO BUS 73193 [STORY 345.00]
SID_STG	: TRIP LINE FROM BUS 73180 [SIDNEY 230.00] TO BUS 73190 [STEGALL 230.00]
STY_NYUMA	: TRIP LINE FROM BUS 73192 [STORY 230.00] TO BUS 73143 [N.YUMA 230.00]
PAW_FTLUPT	: TRIP LINE FROM BUS 70311 [PAWNEE 230.00] TO BUS 70192 [FTLUPTON 230.00]
NYUMA_WRAY	: TRIP LINE FROM BUS 73143 [N.YUMA 230.00] TO BUS 73224 [WRAY 230.00]
STVR_WLD	: TRIP LINE FROM BUS 70410 [ST.VRAIN 230.00] TO BUS 70471 [WELD PS 230.00]
CHY_PON_OWL	: TRIP LINE FROM BUS 73043 [CHEYENNE 115.00] TO BUS 73504 [PONNEQUI 115.00]
	: TRIP LINE FROM BUS 73504 [PONNEQUI 115.00] TO BUS 73597 [OWL_CRK 115.00]
OWL_AULT	: TRIP LINE FROM BUS 73597 [OWL_CRK 115.00] TO BUS 73172 [ROCKPRT 115.00]
	: TRIP LINE FROM BUS 73172 [ROCKPRT 115.00] TO BUS 73145 [NUNN 115.00]
	: TRIP LINE FROM BUS 73145 [NUNN 115.00] TO BUS 73552 [AULT 115.00]
BCK_BSAND	: TRIP LINE FROM BUS 73020 [BEAVERCK 115.00] TO BUS 73065 [GARY 115.00]
	: TRIP LINE FROM BUS 73065 [GARY 115.00] TO BUS 73221 [WOODROW 115.00]
	: TRIP LINE FROM BUS 73221 [WOODROW 115.00] TO BUS 73194 [SWOODROW 115.00]
	: TRIP LINE FROM BUS 73194 [SWOODROW 115.00] TO BUS 73125 [LSCHANCE 115.00]
	: TRIP LINE FROM BUS 73125 [LSCHANCE 115.00] TO BUS 73017 [B.SANDY 115.00]
PAWN_QUIN	: TRIP LINE FROM BUS 70311 [PAWNEE 230.00] TO BUS 70343 [QUINCY 230.00]
PAWN_DAN	: TRIP LINE FROM BUS 70311 [PAWNEE 230.00] TO BUS 70139 [DANIELPK 230.00]
WRAY_VERN	: TRIP LINE FROM BUS 73223 [WRAY 115.00] TO BUS 73206 [VERNONT 115.00]
ARH_AULT	: TRIP LINE FROM BUS 73009 [ARCHER 230.00] TO BUS 73011 [AULT 230.00]
SID_SPCAN	: TRIP LINE FROM BUS 73180 [SIDNEY 230.00] TO BUS 73579 [SPRNGCAN 230.00]
SPCAN_NYUMA	: TRIP LINE FROM BUS 73579 [SPRNGCAN 230.00] TO BUS 73143 [N.YUMA 230.00]
	: TRIP LINE FROM BUS 73579 [SPRNGCAN 230.00] TO BUS 70721 [SPRNGCAN 34.500]
LRS_UNIT2	: TRIP LINE FROM BUS 73130 [MBPP-2 24.000] TO BUS 73108 [LAR.RIVR 345.00]
BRUSH_BCP1	: TRIP LINE FROM BUS 70005 [BRUSHCPP 115.00] TO BUS 70498 [QF BCP 1 13.800]
BRUSH_BCP2	: TRIP LINE FROM BUS 70005 [BRUSHCPP 115.00] TO BUS 70499 [QF BCP 2 13.800]
BRUSH_CPP1	: TRIP LINE FROM BUS 70005 [BRUSHCPP 115.00] TO BUS 70500 [QF CPP 1 13.800]
BRUSH_CPP2	: TRIP LINE FROM BUS 70005 [BRUSHCPP 115.00] TO BUS 70501 [QF CPP 2 13.800]
BRUSH_BCP3	: TRIP LINE FROM BUS 70005 [BRUSHCPP 115.00] TO BUS 70556 [QF BCP 3 13.800]
MONFT_MNFQF	: TRIP LINE FROM BUS 70290 [MONFORT 115.00] TO BUS 70010 [QF MNFRT 13.800]
LUPT_LUP1-2	: TRIP LINE FROM BUS 70191 [FTLUPTON 115.00] TO BUS 70188 [FTLUP1-2 13.800]
LUPT_XFMR	: TRIP LINE FROM BUS 70191 [FTLUPTON 115.00] TO BUS 70192 [FTLUPTON 230.00]
LUPT_VRAIN1	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70410 [ST.VRAIN 230.00]
	: CKT 1
LUPT_VRAIN2	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70410 [ST.VRAIN 230.00]
	: CKT 2
LUPT_TC1	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70487 [QF TC1 13.800]
LUPT_TC2	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70490 [QF TC2 13.800]
LUPT_T11	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70493 [QF T11 13.800]
LUPT_T12	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70495 [QF T12 13.800]
LUPT_JLGRN	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70529 [JLGREEN 230.00]
LUPT_HNRLK	: TRIP LINE FROM BUS 70192 [FTLUPTON 230.00] TO BUS 70605 [HENRYLAK 230.00]
GODF_GREEL	: TRIP LINE FROM BUS 70202 [GODFRETP 115.00] TO BUS 70209 [GREELEY 115.00]
GODF_JOHNS	: TRIP LINE FROM BUS 70202 [GODFRETP 115.00] TO BUS 70240 [JOHNSTN 115.00]
GREEL_MONTF	: TRIP LINE FROM BUS 70209 [GREELEY 115.00] TO BUS 70290 [MONFORT 115.00]
GREEL_WELD	: TRIP LINE FROM BUS 70209 [GREELEY 115.00] TO BUS 70470 [WELD PS 115.00]

<u>LABEL</u>	<u>EVENTS</u>						
IDEA_LAPRT	: TRIP LINE FROM BUS 70238 [IDEALCEM	46.000]	TO BUS 70255 [LAPORTE	46.000]			
LAPRT_LPRTPS	: TRIP LINE FROM BUS 70255 [LAPORTE	46.000]	TO BUS 70256 [LAPORTPS	115.00]			
MONTF_UNC	: TRIP LINE FROM BUS 70290 [MONFORT	115.00]	TO BUS 70439 [UNC	115.00]			
PWN_PWN1	: TRIP LINE FROM BUS 70311 [PAWNEE	230.00]	TO BUS 70310 [PAWNEE	22.000]			
	CKT 1						
PWN_PWN2	: TRIP LINE FROM BUS 70311 [PAWNEE	230.00]	TO BUS 70310 [PAWNEE	22.000]			
	CKT 2						
PWN_MANC1	: TRIP LINE FROM BUS 70311 [PAWNEE	230.00]	TO BUS 70314 [MANCHEF1	18.000]			
PWN_MANC2	: TRIP LINE FROM BUS 70311 [PAWNEE	230.00]	TO BUS 70315 [MANCHEF2	18.000]			
ROSED_UNC	: TRIP LINE FROM BUS 70368 [ROSEDALE	115.00]	TO BUS 70439 [UNC	115.00]			
ROSED_WELD	: TRIP LINE FROM BUS 70368 [ROSEDALE	115.00]	TO BUS 70470 [WELD PS	115.00]			
VRAIN_WINDS	: TRIP LINE FROM BUS 70410 [ST.VRAIN	230.00]	TO BUS 70474 [WINDSOR	230.00]			
UNC_QFUNC	: TRIP LINE FROM BUS 70439 [UNC	115.00]	TO BUS 70502 [QF UNC	13.800]			
WELD_WELD1	: TRIP LINE FROM BUS 70469 [WELD	46.000]	TO BUS 70470 [WELD PS	115.00]			
	CKT 1						
WELD_WELD2	: TRIP LINE FROM BUS 70469 [WELD	46.000]	TO BUS 70470 [WELD PS	115.00]			
	CKT 2						
WELD_WELD	: TRIP LINE FROM BUS 70471 [WELD PS	230.00]	TO BUS 70470 [WELD PS	115.00]			
	CKT 2						
Hlak_Hlak	: TRIP LINE FROM BUS 70605 [HENRYLAK	230.00]	TO BUS 70606 [HENRYLAK	115.00]			
Hlak_Brom	: TRIP LINE FROM BUS 70606 [HENRYLAK	115.00]	TO BUS 70607 [BROMLEY	115.00]			
BVRCK_BCKPS	: TRIP LINE FROM BUS 73013 [B.CK PS	115.00]	TO BUS 73020 [BEAVERCK	115.00]			
BCKTRI_STY	: TRIP LINE FROM BUS 73016 [B.CK TRI	230.00]	TO BUS 73192 [STORY	230.00]			
BSAND_BSAND	: TRIP LINE FROM BUS 73017 [B.SANDY	115.00]	TO BUS 73018 [B.SANDY	230.00]			
BSAND_LIMON	: TRIP LINE FROM BUS 73017 [B.SANDY	115.00]	TO BUS 73318 [LIMON	115.00]			
BSAND_BURL	: TRIP LINE FROM BUS 73018 [B.SANDY	230.00]	TO BUS 73036 [BURLNGTN	230.00]			
BSAND_LINC	: TRIP LINE FROM BUS 73018 [B.SANDY	230.00]	TO BUS 73531 [LINCOLNT	230.00]			
BUR1_BUR2-1	: TRIP LINE FROM BUS 73035 [BURLNGTN	115.00]	TO BUS 73036 [BURLNGTN	230.00]			
	CKT 1						
BUR1_BUR2-2	: TRIP LINE FROM BUS 73035 [BURLNGTN	115.00]	TO BUS 73036 [BURLNGTN	230.00]			
	CKT 2						
BURL_BURL1	: TRIP LINE FROM BUS 73035 [BURLNGTN	115.00]	TO BUS 73302 [BRLNGTN1	13.800]			
BURL_BURL2	: TRIP LINE FROM BUS 73035 [BURLNGTN	115.00]	TO BUS 73303 [BRLNGTN2	13.800]			
DRL_NYU	: TRIP LINE FROM BUS 73047 [DEERINGL	115.00]	TO BUS 73142 [N.YUMA	115.00]			
DRL_YU	: TRIP LINE FROM BUS 73047 [DEERINGL	115.00]	TO BUS 73230 [YUMA	115.00]			
EK_ROBB	: TRIP LINE FROM BUS 73053 [ECKLEY	115.00]	TO BUS 73326 [ROBB	115.00]			
FRC_WAN	: TRIP LINE FROM BUS 73063 [FRENCHCK	115.00]	TO BUS 73210 [WAUNETA	115.00]			
KIC_ORC	: TRIP LINE FROM BUS 73097 [KIOWA CK	115.00]	TO BUS 73147 [ORCHARD	115.00]			
NYU1_NYU2	: TRIP LINE FROM BUS 73142 [N.YUMA	115.00]	TO BUS 73143 [N.YUMA	230.00]			
WAC1_WAC2	: TRIP LINE FROM BUS 73223 [WRAY	115.00]	TO BUS 73224 [WRAY	230.00]			
LNC_LNC1	: TRIP LINE FROM BUS 73531 [LINCOLNT	230.00]	TO BUS 73532 [LINCOLN1	13.800]			
LNC_LNC2	: TRIP LINE FROM BUS 73531 [LINCOLNT	230.00]	TO BUS 73533 [LINCOLN2	13.800]			
GS_SG	: TRIP LINE FROM BUS 73067 [GERING	115.00]	TO BUS 73189 [STEGALL	115.00]			
SD_SDDC	: TRIP LINE FROM BUS 73180 [SIDNEY	230.00]	TO BUS 73181 [SIDNEYDC	230.00]			
SG_SGDC	: TRIP LINE FROM BUS 73188 [STEGALDC	230.00]	TO BUS 73190 [STEGALL	230.00]			
LSCH_ANTO	: TRIP LINE FROM BUS 73125 [LSCHANCE	115.00]	TO BUS 73006 [ANTON	115.00]			
SFOR_ARIC	: TRIP LINE FROM BUS 73010 [ARICKARE	115.00]	TO BUS 73094 [JOES	115.00]			
	TRIP LINE FROM BUS 73094 [JOES	115.00]	TO BUS 73110 [LIBERTY	115.00]			
	TRIP LINE FROM BUS 73110 [LIBERTY	115.00]	TO BUS 73084 [HELL TAP	115.00]			
	TRIP LINE FROM BUS 73084 [HELL TAP	115.00]	TO BUS 73185 [SO. FORK	115.00]			
	TRIP LINE FROM BUS 73084 [HELL TAP	115.00]	TO BUS 73083 [HELL CK	115.00]			
	TRIP LINE FROM BUS 73083 [HELL CK	115.00]	TO BUS 73174 [SAGEBRSH	115.00]			
WRAY_WUAN	: TRIP LINE FROM BUS 73210 [WAUNETA	115.00]	TO BUS 73005 [ALVIN	115.00]			
	TRIP LINE FROM BUS 73005 [ALVIN	115.00]	TO BUS 73175 [SANDHILL	115.00]			
	TRIP LINE FROM BUS 73175 [SANDHILL	115.00]	TO BUS 73223 [WRAY	115.00]			
SMKYHL_BURL	: TRIP LINE FROM BUS 73035 [BURLNGTN	115.00]	TO BUS 73485 [BURL KC	115.00]			
	TRIP LINE FROM BUS 73485 [BURL KC	115.00]	TO BUS 73034 [BURL PSC	115.00]			
	TRIP LINE FROM BUS 73034 [BURL PSC	115.00]	TO BUS 73209 [WANIBETP	115.00]			
	TRIP LINE FROM BUS 73209 [WANIBETP	115.00]	TO BUS 73184 [SMOKYHLW	115.00]			
	TRIP LINE FROM BUS 73209 [WANIBETP	115.00]	TO BUS 73207 [WAANIBE	115.00]			
	TRIP LINE FROM BUS 73007 [ARAPASUB	115.00]	TO BUS 73207 [WAANIBE	115.00]			

<u>LABEL</u>	<u>EVENTS</u>						
BCK_BCKTRI	:	TRIP LINE FROM BUS 73015 [B.CK TRI	115.00]	TO BUS 73016 [B.CK TRI	230.00]		
		TRIP LINE FROM BUS 73015 [B.CK TRI	115.00]	TO BUS 73020 [BEAVERCK	115.00]		
BCK_FMW	:	TRIP LINE FROM BUS 73020 [BEAVERCK	115.00]	TO BUS 73031 [BRUSHTAP	115.00]		
		TRIP LINE FROM BUS 73031 [BRUSHTAP	115.00]	TO BUS 73305 [EFMORGTP	115.00]		
		TRIP LINE FROM BUS 73305 [EFMORGTP	115.00]	TO BUS 73379 [FMWEST	115.00]		
		TRIP LINE FROM BUS 73305 [EFMORGTP	115.00]	TO BUS 73378 [FMN	115.00]		
		TRIP LINE FROM BUS 73305 [EFMORGTP	115.00]	TO BUS 73309 [BARLOW	115.00]		
		TRIP LINE FROM BUS 73309 [BARLOW	115.00]	TO BUS 73310 [FME	115.00]		
BCK_STG	:	TRIP LINE FROM BUS 73020 [BEAVERCK	115.00]	TO BUS 73136 [MESSEX	115.00]		
		TRIP LINE FROM BUS 73136 [MESSEX	115.00]	TO BUS 73191 [STERLING	115.00]		
BCK_HOYT	:	TRIP LINE FROM BUS 73020 [BEAVERCK	115.00]	TO BUS 73464 [ADENA	115.00]		
		TRIP LINE FROM BUS 73088 [HOYT	115.00]	TO BUS 73464 [ADENA	115.00]		
FMW_KIC	:	TRIP LINE FROM BUS 73097 [KIOWA CK	115.00]	TO BUS 73023 [BIJOUTAP	115.00]		
		TRIP LINE FROM BUS 73023 [BIJOUTAP	115.00]	TO BUS 73379 [FMWEST	115.00]		
BURL_WRAY	:	TRIP LINE FROM BUS 73025 [BONNY CK	115.00]	TO BUS 73035 [BURLNGTN	115.00]		
		TRIP LINE FROM BUS 73025 [BONNY CK	115.00]	TO BUS 73185 [SO. FORK	115.00]		
		TRIP LINE FROM BUS 73091 [IDALIA	115.00]	TO BUS 73185 [SO. FORK	115.00]		
		TRIP LINE FROM BUS 73091 [IDALIA	115.00]	TO BUS 73206 [VERNONTP	115.00]		
		TRIP LINE FROM BUS 73206 [VERNONTP	115.00]	TO BUS 73223 [WRAY	115.00]		
HOYT_PROP	:	TRIP LINE FROM BUS 73088 [HOYT	115.00]	TO BUS 73493 [SANDCRK	115.00]		
		TRIP LINE FROM BUS 73493 [SANDCRK	115.00]	TO BUS 73159 [PROSPVAL	115.00]		
		TRIP LINE FROM BUS 73493 [SANDCRK	115.00]	TO BUS 73030 [BRIGHTNW	115.00]		
		TRIP LINE FROM BUS 73030 [BRIGHTNW	115.00]	TO BUS 73503 [ERIE SW	115.00]		
DRL_EK	:	TRIP LINE FROM BUS 73047 [DEERINGL	115.00]	TO BUS 95101 [E YUMA TP	115.00]		
		TRIP LINE FROM BUS 73053 [ECKLEY	115.00]	TO BUS 95101 [E YUMA TP	115.00]		
EK_WRAYTS	:	TRIP LINE FROM BUS 73053 [ECKLEY	115.00]	TO BUS 73225 [WRAY TAP	115.00]		
		TRIP LINE FROM BUS 73223 [WRAY	115.00]	TO BUS 73225 [WRAY TAP	115.00]		
EK_VERN	:	TRIP LINE FROM BUS 73053 [ECKLEY	115.00]	TO BUS 73371 [BETHELLM	115.00]		
SG_FRC	:	TRIP LINE FROM BUS 73191 [STERLING	115.00]	TO BUS 73478 [GALIEN	115.00]		
		TRIP LINE FROM BUS 73059 [FLEMING	115.00]	TO BUS 73478 [GALIEN	115.00]		
		TRIP LINE FROM BUS 73059 [FLEMING	115.00]	TO BUS 94000 [FLEMWIND	115.00]		
		TRIP LINE FROM BUS 94000 [FLEMWIND	115.00]	TO BUS 73080 [HAXTUN	115.00]		
		TRIP LINE FROM BUS 73080 [HAXTUN	115.00]	TO BUS 73063 [FRENCHCK	115.00]		
BCK_AKRN	:	TRIP LINE FROM BUS 73020 [BEAVERCK	115.00]	TO BUS 73003 [AKRON	115.00]		
AKRN_DEERL	:	TRIP LINE FROM BUS 73003 [AKRON	115.00]	TO BUS 73372 [OTIS LM	115.00]		
		TRIP LINE FROM BUS 73372 [OTIS LM	115.00]	TO BUS 73047 [DEERINGL	115.00]		
HOYT_KIC	:	TRIP LINE FROM BUS 73088 [HOYT	115.00]	TO BUS 73103 [L.MEADOW	115.00]		
		TRIP LINE FROM BUS 73103 [L.MEADOW	115.00]	TO BUS 73213 [WIGGINS	115.00]		
		TRIP LINE FROM BUS 73213 [WIGGINS	115.00]	TO BUS 73097 [KIOWA CK	115.00]		
KIC_WELD	:	TRIP LINE FROM BUS 73097 [KIOWA CK	115.00]	TO BUS 73158 [PROSPEC	115.00]		
		TRIP LINE FROM BUS 73158 [PROSPEC	115.00]	TO BUS 73370 [LOSTCKTP	115.00]		
		TRIP LINE FROM BUS 73370 [LOSTCKTP	115.00]	TO BUS 73117 [LOST CK	115.00]		
		TRIP LINE FROM BUS 73158 [PROSPEC	115.00]	TO BUS 73095 [KERSEYTP	115.00]		
		TRIP LINE FROM BUS 73095 [KERSEYTP	115.00]	TO BUS 73554 [BOOMERNG	115.00]		
		TRIP LINE FROM BUS 73554 [BOOMERNG	115.00]	TO BUS 73211 [WELD LM	115.00]		
NYU_WAN	:	TRIP LINE FROM BUS 73142 [N.YUMA	115.00]	TO BUS 73166 [REDWILLW	115.00]		
		TRIP LINE FROM BUS 73166 [REDWILLW	115.00]	TO BUS 73208 [WAGES	115.00]		
		TRIP LINE FROM BUS 73208 [WAGES	115.00]	TO BUS 73210 [WAUNETA	115.00]		
STG_SID	:	TRIP LINE FROM BUS 73191 [STERLING	115.00]	TO BUS 73150 [PEETZ	115.00]		
		TRIP LINE FROM BUS 73150 [PEETZ	115.00]	TO BUS 73179 [SIDNEY	115.00]		
FMW_FME	:	TRIP LINE FROM BUS 73311 [FMS	115.00]	TO BUS 73379 [FMWEST	115.00]		
DCM_EE	:	TRIP LINE FROM BUS 73049 [DELCAMIN	115.00]	TO BUS 73501 [RINNVALL	115.00]		
		TRIP LINE FROM BUS 73501 [RINNVALL	115.00]	TO BUS 73502 [DACONO	115.00]		
		TRIP LINE FROM BUS 73502 [DACONO	115.00]	TO BUS 73503 [ERIE SW	115.00]		
BPT_GS	:	TRIP LINE FROM BUS 73029 [BRIDGEPT	115.00]	TO BUS 73131 [MCGREW	115.00]		
		TRIP LINE FROM BUS 73131 [MCGREW	115.00]	TO BUS 73067 [GERING	115.00]		
BPT_SID	:	TRIP LINE FROM BUS 73029 [BRIDGEPT	115.00]	TO BUS 73236 [GREENWOD	115.00]		
		TRIP LINE FROM BUS 73236 [GREENWOD	115.00]	TO BUS 73046 [DALTON	115.00]		
		TRIP LINE FROM BUS 73046 [DALTON	115.00]	TO BUS 73179 [SIDNEY	115.00]		

<u>LABEL</u>	<u>EVENTS</u>
ARH_SID	: TRIP LINE FROM BUS 73008 [ARCHER 115.00] TO BUS 73152 [PINEBLUF 115.00]
	TRIP LINE FROM BUS 73152 [PINEBLUF 115.00] TO BUS 73038 [BUSHNLTP 115.00]
	TRIP LINE FROM BUS 73038 [BUSHNLTP 115.00] TO BUS 73037 [BUSHNELL 115.00]
	TRIP LINE FROM BUS 73038 [BUSHNLTP 115.00] TO BUS 73096 [KIMBALL 115.00]
	TRIP LINE FROM BUS 73096 [KIMBALL 115.00] TO BUS 73355 [KIMBALLC 115.00]
	TRIP LINE FROM BUS 73096 [KIMBALL 115.00] TO BUS 73092 [JACINTO 115.00]
	TRIP LINE FROM BUS 73092 [JACINTO 115.00] TO BUS 73179 [SIDNEY 115.00]
	TRIP LINE FROM BUS 73067 [GERING 115.00] TO BUS 73365 [EMIGRANT 115.00]
GS_SG2	: TRIP LINE FROM BUS 73189 [STEGALL 115.00] TO BUS 73365 [EMIGRANT 115.00]
	TRIP LINE FROM BUS 73214 [WILDCAT 115.00] TO BUS 73365 [EMIGRANT 115.00]

D. Monitored Buses

<u>NAME</u>	<u>BASE KV</u>	<u>BUS#</u>
CASPERPP	115	65305
CASPERPP	69	65306
DAVEJOHN	230	65420
DAVEJOHN	115	65425
DANIELPK	230	70139
FTLUPTON	230	70192
PAWNEE	22	70310
PAWNEE	230	70311
MANCHEF1	18	70314
MANCHEF2	18	70315
ST.VRAIN	230	70410
WELD PS	230	70471
WINDSOR	230	70474
AIRPORT	115	73002
AKRON	115	73003
ALCOVA	115	73004
ANTON	115	73006
ARAPASUB	115	73007
ARCHER	115	73008
ARCHER	230	73009
ARICKARE	115	73010
AULT	230	73011
AULT	345	73012
B.CK PS	115	73013
B.CK PS	230	73014
B.CK TRI	115	73015
B.CK TRI	230	73016
B.SANDY	115	73017
B.SANDY	230	73018
BEAVERCK	115	73020
BIJOUTAP	115	73023
BLKHLWTP	115	73024
BONNY CK	115	73025
BOYD	115	73026
BRIDGEPT	115	73029
BRIGHTNW	115	73030
BRUSHTAP	115	73031
BURL PSC	115	73034

<u>NAME</u>	<u>BASE KV</u>	<u>BUS#</u>
BURLNGTN	115	73035
BURLNGTN	230	73036
BUSHNELL	115	73037
CARTERLK	115	73039
CASPERLM	115	73042
CHEYENNE	115	73043
COBBLKTP	115	73044
DALTON	115	73046
DIXON CK	115	73051
ECKLEY	115	73053
ESTES	115	73056
FLEMING	115	73059
FORDHAM	115	73060
FRENCHCK	115	73063
GARY	115	73065
GEMCTYTP	115	73066
GERING	115	73067
GLENDO	115	73069
DAVEJTPN	115	73070
DAVEJTPS	115	73071
GUERNTAP	115	73076
HAPPYJCK	115	73077
HARMONY	230	73078
HAXTUN	115	73080
HELL CK	115	73083
HOYT	115	73088
HRSTHTAP	115	73089
HYGIENE	115	73090
IDALIA	115	73091
JACINTO	115	73092
JOES	115	73094
KERSEYTP	115	73095
KIMBALL	115	73096
KIOWA CK	115	73097
KODAK	115	73098
KORTES	115	73099
KORTESTP	115	73100
L.MEADOW	115	73103
LAGRANGE	115	73104
LAPORTE	230	73106
LAR.RIVR	230	73107
LAR.RIVR	345	73108

<u>NAME</u>	<u>BASE KV</u>	<u>BUS#</u>
LARAMIE	115	73109
LINGLE	115	73112
LNGMNTNW	115	73113
LOST CK	115	73117
LOVEWTAP	115	73124
LSCHANCE	115	73125
LYMAN	115	73126
LYONS	115	73127
MAY	115	73128
MBPP-1	24	73129
MBPP-2	24	73130
MCGREW	115	73131
MED BOW	115	73134
MESSEX	115	73136
MIRACLEM	115	73137
MYERS	115	73139
MYERS TP	115	73140
N.YUMA	115	73142
N.YUMA	230	73143
NUNN	115	73145
OASISTAP	115	73146
ORCHARD	115	73147
OVERLAND	115	73149
PEETZ	115	73150
PINEBLUF	115	73152
PODOLAK	115	73153
POLE CK	115	73154
POLEHILL	115	73155
POUDRE	115	73156
POWELLTP	69	73157
PROSPEC	115	73158
PROSPVAL	115	73159
REFNRYTP	115	73167
RICHARDS	115	73169
ROCKPRTP	115	73172
SAGEBRSH	115	73174
SANDHILL	115	73175
SEMINOE	115	73176
SEMINOTP	115	73177
SENTINEL	115	73178
SIDNEY	115	73179
SIDNEY	230	73180

<u>NAME</u>	<u>BASE KV</u>	<u>BUS#</u>
SIDNEYDC	230	73181
SKYLINE	115	73183
SMOKYHLW	115	73184
SO. FORK	115	73185
STEGALDC	230	73188
STEGALL	115	73189
STEGALL	230	73190
STERLING	115	73191
STORY	230	73192
STORY	345	73193
TERRY	115	73196
TIMBERLN	230	73199
TIMNTHTP	115	73201
TORRNGTN	115	73202
TROWBRDG	115	73205
VERNONTP	115	73206
WANIBETP	115	73209
WELD LM	115	73211
WELD LM	230	73212
WIGGINS	115	73213
WILDCAT	115	73214
WINDSOR	115	73218
WOODROW	115	73221
WRAY	115	73223
WRAY	230	73224
WRAY TAP	115	73225
YUMA	115	73230
GREENWOD	115	73236
LYMANTP	115	73256
EFMORGTP	115	73305
ALCOVA1	6.6	73332
GLEND02	6.9	73352
MEDBOWTP	115	73362
EMIGRANT	115	73365
WAGNHNDS	115	73366
LOSTCKTP	115	73370
OTIS LM	115	73372
VALLEYLM	115	73373
WARRENLM	115	73375
FMWEST	115	73379
ROGERSRD	115	73437
ALCOVA2	6.6	73438

<u>NAME</u>	<u>BASE KV</u>	<u>BUS#</u>
SEMINOE3	6.9	73441
BLKFORTP	115	73455
ADENA	115	73464
GALIEN	115	73478
BURL KC	115	73485
SANDCRK	115	73493
ERIE SW	115	73503
PONNEQUI	115	73504
LAPORTAP	115	73506
AULT	115	73552
HAYDEN	138	79038
HAYDEN	230	79039
HAYDEN1	18	79040
HAYDEN2	22	79041

E. Monitored Branches

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
401	CLB1	34.500	90401 CLR_1	0.5750	1 17.5
401	CLB1	34.500	94002 WINDLOW	34.500	1 0.0
402	CLB2	34.500	90402 CLR_2	0.5750	1 17.5
402	CLB2	34.500	94002 WINDLOW	34.500	1 0.0
403	CLB3	34.500	90403 CLR_3	0.5750	1 17.5
403	CLB3	34.500	94002 WINDLOW	34.500	1 0.0
404	CLB4	34.500	90404 CLR_4	0.5750	1 17.5
404	CLB4	34.500	94002 WINDLOW	34.500	1 0.0
405	CLB5	34.500	90405 CLR_5	0.5750	1 17.5
405	CLB5	34.500	94002 WINDLOW	34.500	1 0.0
406	CLB6	34.500	90406 CLR_6	0.5750	1 17.5
406	CLB6	34.500	94002 WINDLOW	34.500	1 0.0
407	CLB7	34.500	90407 CLR_7	0.5750	1 17.5
407	CLB7	34.500	94002 WINDLOW	34.500	1 0.0
408	CLB8	34.500	90408 CLR_8	0.5750	1 17.5
408	CLB8	34.500	94002 WINDLOW	34.500	1 0.0
409	CLB9	34.500	94002 WINDLOW	34.500	1 0.0
65305	CASPERPP	115.00	65306 CASPERPP	69.000	1 50.0
65305	CASPERPP	115.00	65306 CASPERPP	69.000	2 50.0
65305	CASPERPP	115.00	73042 CASPERLM	115.00	1 160.0
65305	CASPERPP	115.00	73167 REFNRYP	115.00	1 137.0
65420	DAVEJOHN	230.00	65425 DAVEJOHN	115.00	1 250.0
65420	DAVEJOHN	230.00	73107 LAR.RIVR	230.00	1 442.0
65420	DAVEJOHN	230.00	94301 2007G5	230.00	1 319.0
65425	DAVEJOHN	115.00	73070 DAVEJTPN	115.00	1 109.0
65425	DAVEJOHN	115.00	73071 DAVEJTPS	115.00	1 109.0
70005	BRUSHCPP	115.00	70498 QF BCP 1	13.800	1 83.0
70005	BRUSHCPP	115.00	70499 QF BCP 2	13.800	1 75.0
70005	BRUSHCPP	115.00	70500 QF CPP 1	13.800	1 56.0
70005	BRUSHCPP	115.00	70501 QF CPP 2	13.800	1 56.0
70005	BRUSHCPP	115.00	70556 QF BCP 3	13.800	1 112.0
70005	BRUSHCPP	115.00	73013 B.CK PS	115.00	1 162.0
70005	BRUSHCPP	115.00	73013 B.CK PS	115.00	2 187.0
70010	QF MNFRT	13.800	70290 MONFORT	115.00	1 40.0
70116	COBBLAKE	115.00	73044 COBBLKTP	115.00	1 100.0
70139	DANIELPK	230.00	70311 PAWNEE	230.00	1 500.0
70188	FTLUPTON	115.00	70191 FTLUPTON	115.00	1 110.0
70191	FTLUPTON	115.00	70192 FTLUPTON	230.00	1 280.0
70192	FTLUPTON	230.00	70311 PAWNEE	230.00	1 413.5
70192	FTLUPTON	230.00	70410 ST.VRAIN	230.00	1 435.0
70192	FTLUPTON	230.00	70410 ST.VRAIN	230.00	2 435.0
70192	FTLUPTON	230.00	70487 QF TC1	13.800	1 100.0
70192	FTLUPTON	230.00	70490 QF TC2	13.800	1 100.0
70192	FTLUPTON	230.00	70493 QF TI1	13.800	1 100.0
70192	FTLUPTON	230.00	70495 QF TI2	13.800	1 100.0
70192	FTLUPTON	230.00	70529 JLGREEN	230.00	1 495.0
70192	FTLUPTON	230.00	70605 HENRYLAK	230.00	1 527.0
70202	GODFRETP	115.00	70209 GREELEY	115.00	1 136.0
70202	GODFRETP	115.00	70240 JOHNSTN	115.00	1 161.9
70209	GREELEY	115.00	70210 GREELEY1	46.000	1 33.0
70209	GREELEY	115.00	70210 GREELEY1	46.000	2 33.0
70209	GREELEY	115.00	70290 MONFORT	115.00	1 186.6
70209	GREELEY	115.00	70470 WELD PS	115.00	1 186.6
70238	IDEALCEM	46.000	70255 LAPORTE	46.000	1 39.5
70255	LAPORTE	46.000	70256 LAPORTPS	115.00	1 33.0

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
70290	MONFORT	115.00	70439 UNC	115.00	1 186.6
70310	PAWNEE	22.000	70311 PAWNEE	230.00	1 650.0
70310	PAWNEE	22.000	70311 PAWNEE	230.00	2 650.0
70311	PAWNEE	230.00	70314 MANCHEF1	18.000	1 200.0
70311	PAWNEE	230.00	70315 MANCHEF2	18.000	1 200.0
70311	PAWNEE	230.00	73192 STORY	230.00	1 625.0
70368	ROSEDALE	115.00	70439 UNC	115.00	1 207.0
70368	ROSEDALE	115.00	70470 WELD PS	115.00	1 134.8
70410	ST.VRAIN	230.00	70471 WELD PS	230.00	1 500.0
70410	ST.VRAIN	230.00	70474 WINDSOR	230.00	1 495.0
70439	UNC	115.00	70502 QF UNC	13.800	1 76.8
70469	WELD	46.000	70470 WELD PS	115.00	1 46.7
70469	WELD	46.000	70470 WELD PS	115.00	2 150.0
70470	WELD PS	115.00	70471 WELD PS	230.00	2 150.0
70470	WELD PS	115.00	73211 WELD LM	115.00	1 500.0
70471	WELD PS	230.00	73212 WELD LM	230.00	1 637.0
70474	WINDSOR	230.00	73011 AULT	230.00	1 495.0
70605	HENRYLAK	230.00	70606 HENRYLAK	115.00	1 168.0
70606	HENRYLAK	115.00	70607 BROMLEY	115.00	1 135.0
70721	SPRNGCAN	34.500	73579 SPRNGCAN	230.00	1 74.7
73002	AIRPORT	115.00	73026 BOYD	115.00	1 166.0
73003	AKRON	115.00	73020 BEAVERCK	115.00	1 84.9
73003	AKRON	115.00	73372 OTIS LM	115.00	1 84.9
73004	ALCOVA	115.00	73042 CASPERLM	115.00	1 79.7
73004	ALCOVA	115.00	73042 CASPERLM	115.00	2 79.7
73004	ALCOVA	115.00	73137 MIRACLEM	115.00	1 109.0
73004	ALCOVA	115.00	73137 MIRACLEM	115.00	2 109.0
73004	ALCOVA	115.00	73332 ALCOVA1	6.6000	1 20.0
73004	ALCOVA	115.00	73438 ALCOVA2	6.6000	1 20.0
73005	ALVIN	115.00	73175 SANDHILL	115.00	1 95.0
73005	ALVIN	115.00	73210 WAUNETA	115.00	1 67.0
73005	ALVIN	115.00	73304 CRETESWT	115.00	1 95.0
73006	ANTON	115.00	73125 LSCHANCE	115.00	1 67.0
73007	ARAPASUB	115.00	73207 WAANIBE	115.00	1 67.0
73008	ARCHER	115.00	73009 ARCHER	230.00	1 167.0
73008	ARCHER	115.00	73009 ARCHER	230.00	2 167.0
73008	ARCHER	115.00	73043 CHEYENNE	115.00	1 148.4
73008	ARCHER	115.00	73140 MYERS TP	115.00	1 121.7
73008	ARCHER	115.00	73152 PINEBLUF	115.00	1 133.0
73008	ARCHER	115.00	73183 SKYLINE	115.00	1 121.0
73009	ARCHER	230.00	73011 AULT	230.00	1 462.0
73009	ARCHER	230.00	73190 STEGALL	230.00	1 459.0
73010	ARICKARE	115.00	73094 JOES	115.00	1 95.0
73011	AULT	230.00	73012 AULT	345.00	1 500.0
73011	AULT	230.00	73012 AULT	345.00	2 500.0
73011	AULT	230.00	73012 AULT	345.00	3 560.0
73011	AULT	230.00	73199 TIMBERLN	230.00	1 543.0
73011	AULT	230.00	73212 WELD LM	230.00	1 478.0
73011	AULT	230.00	73212 WELD LM	230.00	2 478.0
73012	AULT	345.00	73108 LAR.RIVR	345.00	1 1200.0
73013	B.CK PS	115.00	73014 B.CK PS	230.00	1 224.0
73013	B.CK PS	115.00	73020 BEAVERCK	115.00	1 319.0
73014	B.CK PS	230.00	73192 STORY	230.00	1 413.5
73015	B.CK TRI	115.00	73016 B.CK TRI	230.00	1 224.0
73015	B.CK TRI	115.00	73020 BEAVERCK	115.00	1 200.0
73016	B.CK TRI	230.00	73192 STORY	230.00	1 413.5
73017	B.SANDY	115.00	73018 B.SANDY	230.00	1 167.0
73017	B.SANDY	115.00	73125 LSCHANCE	115.00	1 109.0
73017	B.SANDY	115.00	73318 LIMON	115.00	1 85.1
73018	B.SANDY	230.00	73036 BURLNGTN	230.00	1 281.0
73018	B.SANDY	230.00	73531 LINCOLNT	230.00	1 336.0

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
73020	BEAVERCK	115.00	73031 BRUSHTAP	115.00	1 188.0
73020	BEAVERCK	115.00	73065 GARY	115.00	1 109.0
73020	BEAVERCK	115.00	73136 MESSEX	115.00	1 121.7
73020	BEAVERCK	115.00	73464 ADENA	115.00	1 220.0
73023	BIJOUTAP	115.00	73097 KIOWA CK	115.00	1 121.7
73023	BIJOUTAP	115.00	73379 FMWEST	115.00	1 120.0
73024	BLKHLWTP	115.00	73044 COBBLKTP	115.00	1 110.0
73024	BLKHLWTP	115.00	73552 AULT	115.00	1 110.0
73025	BONNY CK	115.00	73035 BURLNGTN	115.00	1 146.0
73025	BONNY CK	115.00	73185 SO. FORK	115.00	1 146.0
73026	BOYD	115.00	73373 VALLEYLM	115.00	1 236.0
73029	BRIDGEPT	115.00	73131 MCGREW	115.00	1 109.0
73029	BRIDGEPT	115.00	73236 GREENWOD	115.00	1 109.0
73030	BRIGHTNW	115.00	73493 SANDCRK	115.00	1 109.0
73030	BRIGHTNW	115.00	73503 ERIE SW	115.00	1 109.0
73031	BRUSHTAP	115.00	73305 EFMORGTP	115.00	1 210.0
73034	BURL PSC	115.00	73209 WANIBETP	115.00	1 67.0
73034	BURL PSC	115.00	73485 BURL KC	115.00	1 67.0
73035	BURLNGTN	115.00	73036 BURLNGTN	230.00	1 100.0
73035	BURLNGTN	115.00	73036 BURLNGTN	230.00	2 167.0
73035	BURLNGTN	115.00	73302 BRLNGTN1	13.800	1 70.0
73035	BURLNGTN	115.00	73303 BRLNGTN2	13.800	1 70.0
73035	BURLNGTN	115.00	73485 BURL KC	115.00	1 67.0
73037	BUSHNELL	115.00	73038 BUSHNLTP	115.00	1 95.0
73038	BUSHNLTP	115.00	73096 KIMBALL	115.00	1 121.7
73038	BUSHNLTP	115.00	73152 PINEBLUF	115.00	1 121.7
73039	CARTERLK	115.00	73124 LOVEWTAP	115.00	1 165.7
73042	CASPERLM	115.00	73070 DAVEJTPN	115.00	1 109.0
73043	CHEYENNE	115.00	73077 HAPPYJCK	115.00	1 160.0
73043	CHEYENNE	115.00	73504 PONNEQUI	115.00	1 160.0
73044	COBBLKTP	115.00	73201 TIMNTHTP	115.00	1 109.0
73046	DALTON	115.00	73179 SIDNEY	115.00	1 109.0
73046	DALTON	115.00	73236 GREENWOD	115.00	1 109.0
73047	DEERINGL	115.00	73142 N.YUMA	115.00	1 146.0
73047	DEERINGL	115.00	73230 YUMA	115.00	1 55.0
73047	DEERINGL	115.00	73372 OTIS LM	115.00	1 84.9
73047	DEERINGL	115.00	95101 E YUMA TP	115.00	1 84.9
73051	DIXON CK	115.00	73089 HRSTHTAP	115.00	1 236.0
73051	DIXON CK	115.00	73149 OVERLAND	115.00	1 236.0
73053	ECKLEY	115.00	73225 WRAY TAP	115.00	1 84.9
73053	ECKLEY	115.00	73326 ROBB	115.00	1 67.0
73053	ECKLEY	115.00	73371 BETHELLM	115.00	1 67.0
73053	ECKLEY	115.00	95101 E YUMA TP	115.00	1 84.9
73056	ESTES	115.00	73155 POLEHILL	115.00	1 80.0
73059	FLEMING	115.00	73478 GALIEN	115.00	1 121.0
73060	FORDHAM	115.00	73113 LNGMNTNW	115.00	1 109.0
73060	FORDHAM	115.00	73437 ROGERSRD	115.00	1 159.0
73063	FRENCHCK	115.00	73080 HAXTUN	115.00	1 121.7
73063	FRENCHCK	115.00	73210 WAUNETA	115.00	1 121.0
73065	GARY	115.00	73221 WOODROW	115.00	1 109.0
73066	GEMCTYTP	115.00	73077 HAPPYJCK	115.00	1 120.0
73067	GERING	115.00	73131 MCGREW	115.00	1 109.0
73067	GERING	115.00	73189 STEGALL	115.00	1 109.0
73067	GERING	115.00	73365 EMIGRANT	115.00	1 109.0
73069	GLENDO	115.00	73070 DAVEJTPN	115.00	1 80.0
73069	GLENDO	115.00	73076 GUERNTAP	115.00	1 80.0
73069	GLENDO	115.00	73153 PODOLAK	115.00	1 80.0
73069	GLENDO	115.00	73352 GLENDO2	6.9000	1 30.0
73069	GLENDO	115.00	73366 WAGNHNDS	115.00	1 80.0
73071	DAVEJTPS	115.00	73167 REFNRYP	115.00	1 109.0
73071	DAVEJTPS	115.00	73366 WAGNHNDS	115.00	1 109.0

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
73077	HAPPYJCK	115.00	94541 HJACK_LOW	34.500	1 150.0
73078	HARMONY	230.00	73199 TIMBERLN	230.00	1 472.0
73083	HELL CK	115.00	73084 HELL TAP	115.00	1 95.0
73083	HELL CK	115.00	73174 SAGEBRSH	115.00	1 95.0
73084	HELL TAP	115.00	73110 LIBERTY	115.00	1 95.0
73084	HELL TAP	115.00	73185 SO. FORK	115.00	1 95.0
73088	HOYT	115.00	73103 L.MEADOW	115.00	1 121.0
73088	HOYT	115.00	73464 ADENA	115.00	1 220.0
73088	HOYT	115.00	73493 SANDCRK	115.00	1 109.0
73090	HYGIENE	115.00	73113 LNGMNTNW	115.00	1 85.0
73090	HYGIENE	115.00	73127 LYONS	115.00	1 109.0
73091	IDALIA	115.00	73185 SO. FORK	115.00	1 146.0
73091	IDALIA	115.00	73206 VERNONTP	115.00	1 146.0
73092	JACINTO	115.00	73096 KIMBALL	115.00	1 121.7
73092	JACINTO	115.00	73179 SIDNEY	115.00	1 121.7
73094	JOES	115.00	73110 LIBERTY	115.00	1 60.0
73095	KERSEYTP	115.00	73158 PROSPEC	115.00	1 109.0
73096	KIMBALL	115.00	73355 KIMBALLC	115.00	1 10.0
73097	KIOWA CK	115.00	73147 ORCHARD	115.00	1 121.7
73097	KIOWA CK	115.00	73158 PROSPEC	115.00	1 121.7
73097	KIOWA CK	115.00	73213 WIGGINS	115.00	1 80.0
73099	KORTES	115.00	73100 KORTESTP	115.00	1 109.0
73099	KORTES	115.00	73137 MIRACLEM	115.00	1 109.0
73100	KORTESTP	115.00	73137 MIRACLEM	115.00	1 109.0
73100	KORTESTP	115.00	73176 SEMINOE	115.00	1 109.0
73103	L.MEADOW	115.00	73213 WIGGINS	115.00	1 121.0
73104	LAGRANGE	115.00	73189 STEGALL	115.00	1 121.7
73107	LAR.RIVR	230.00	73108 LAR.RIVR	345.00	1 600.0
73107	LAR.RIVR	230.00	73190 STEGALL	230.00	1 478.0
73108	LAR.RIVR	345.00	73129 MBPP-1	24.000	1 705.0
73108	LAR.RIVR	345.00	73130 MBPP-2	24.000	1 705.0
73108	LAR.RIVR	345.00	73193 STORY	345.00	1 956.1
73109	LARAMIE	115.00	73146 OASISTAP	115.00	1 120.0
73117	LOST CK	115.00	73370 LOSTCKTP	115.00	1 5.0
73124	LOVEWTAP	115.00	73373 VALLEYLM	115.00	1 166.0
73125	LSCHANCE	115.00	73194 SWOODROW	115.00	1 109.0
73126	LYMAN	115.00	73202 TORRNGTN	115.00	1 40.0
73126	LYMAN	115.00	73256 LYMANTP	115.00	1 109.0
73128	MAY	115.00	73146 OASISTAP	115.00	1 20.0
73134	MED BOW	115.00	73362 MEDBOWTP	115.00	1 110.0
73136	MESSEX	115.00	73191 STERLING	115.00	1 121.7
73137	MIRACLEM	115.00	73177 SEMINOTP	115.00	1 100.0
73137	MIRACLEM	115.00	73362 MEDBOWTP	115.00	1 120.0
73139	MYERS	115.00	73140 MYERS TP	115.00	1 40.0
73140	MYERS TP	115.00	73154 POLE CK	115.00	1 121.7
73142	N.YUMA	115.00	73143 N.YUMA	230.00	1 167.0
73142	N.YUMA	115.00	73166 REDWILLW	115.00	1 166.0
73143	N.YUMA	230.00	73192 STORY	230.00	1 281.0
73143	N.YUMA	230.00	73224 WRAY	230.00	1 281.0
73143	N.YUMA	230.00	73579 SPRNGCAN	230.00	1 566.0
73145	NUNN	115.00	73172 ROCKPRTP	115.00	1 160.0
73145	NUNN	115.00	73552 AULT	115.00	1 160.0
73146	OASISTAP	115.00	73362 MEDBOWTP	115.00	1 133.0
73149	OVERLAND	115.00	73506 LAPORTAP	115.00	1 236.0
73150	PEETZ	115.00	73179 SIDNEY	115.00	1 109.0
73150	PEETZ	115.00	73191 STERLING	115.00	1 109.0
73152	PINEBLUF	115.00	94441 07G10_LOW	34.500	1 140.0
73156	POUDRE	115.00	73506 LAPORTAP	115.00	1 120.0
73158	PROSPEC	115.00	73370 LOSTCKTP	115.00	1 59.6
73159	PROSPVAL	115.00	73493 SANDCRK	115.00	1 124.0
73166	REDWILLW	115.00	73208 WAGES	115.00	1 166.0

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
73175 SANDHILL	115.00	73223 WRAY	115.00	1	95.0
73176 SEMINOE	115.00	73177 SEMINOTP	115.00	1	80.0
73176 SEMINOE	115.00	73441 SEMINOE3	6.9000	1	45.0
73179 SIDNEY	115.00	73180 SIDNEY	230.00	1	167.0
73180 SIDNEY	230.00	73181 SIDNEYDC	230.00	1	240.0
73180 SIDNEY	230.00	73190 STEGALL	230.00	1	319.0
73180 SIDNEY	230.00	73579 SPRNGCAN	230.00	1	566.0
73183 SKYLINE	115.00	73375 WARRENLM	115.00	1	161.9
73184 SMOKYHLW	115.00	73209 WANIBETP	115.00	1	67.0
73188 STEGALDC	230.00	73190 STEGALL	230.00	1	150.0
73189 STEGALL	115.00	73190 STEGALL	230.00	1	100.0
73189 STEGALL	115.00	73190 STEGALL	230.00	2	167.0
73189 STEGALL	115.00	73256 LYMANTP	115.00	1	109.0
73189 STEGALL	115.00	73365 EMIGRANT	115.00	1	109.0
73190 STEGALL	230.00	94301 2007G5	230.00	1	319.0
73191 STERLING	115.00	73478 GALIEN	115.00	1	121.0
73192 STORY	230.00	73193 STORY	345.00	1	500.0
73192 STORY	230.00	73193 STORY	345.00	2	500.0
73194 SWOODROW	115.00	73221 WOODROW	115.00	1	109.0
73196 TERRY	115.00	73437 ROGERSRD	115.00	1	109.0
73196 TERRY	115.00	73503 ERIE SW	115.00	1	109.0
73206 VERNONTP	115.00	73223 WRAY	115.00	1	146.0
73206 VERNONTP	115.00	73374 VERNONLM	115.00	1	67.0
73207 WAANIBE	115.00	73209 WANIBETP	115.00	1	67.0
73208 WAGES	115.00	73210 WAUNETA	115.00	1	67.0
73211 WELD LM	115.00	73212 WELD LM	230.00	1	150.0
73214 WILDCAT	115.00	73365 EMIGRANT	115.00	1	146.0
73223 WRAY	115.00	73224 WRAY	230.00	1	186.0
73223 WRAY	115.00	73225 WRAY TAP	115.00	1	95.0
73225 WRAY TAP	115.00	73331 WRAYWAPA	115.00	1	85.0
73305 EFMORGTP	115.00	73309 BARLOW	115.00	1	60.0
73305 EFMORGTP	115.00	73378 FMN	115.00	1	60.0
73305 EFMORGTP	115.00	73379 FMWEST	115.00	1	121.0
73309 BARLOW	115.00	73310 FME	115.00	1	60.0
73310 FME	115.00	73377 EXCEL	115.00	1	60.0
73311 FMS	115.00	73379 FMWEST	115.00	1	60.0
73501 RINNVALL	115.00	73502 DACONO	115.00	1	166.0
73502 DACONO	115.00	73503 ERIE SW	115.00	1	166.0
73531 LINCOLNT	230.00	73532 LINCOLN1	13.800	1	120.0
73531 LINCOLNT	230.00	73533 LINCOLN2	13.800	1	120.0
79038 HAYDEN	138.00	79039 HAYDEN	230.00	1	150.0
79038 HAYDEN	138.00	79039 HAYDEN	230.00	2	150.0
79039 HAYDEN	230.00	79040 HAYDEN1	18.000	1	235.0
79039 HAYDEN	230.00	79041 HAYDEN2	22.000	1	307.0
94301 2007G5	230.00	94341 07G5_LOW	34.500	1	112.0
94302 CLR_1	0.5750	94342 CB1	34.500	1	29.8
94303 CLR_2	0.5750	94343 CB2	34.500	1	29.8
94306 CLR_3	0.5750	94344 CB3	34.500	1	29.8
94341 07G5_LOW	34.500	94342 CB1	34.500	1	100.0
94341 07G5_LOW	34.500	94343 CB2	34.500	1	100.0
94341 07G5_LOW	34.500	94344 CB3	34.500	1	100.0
94341 07G5_LOW	34.500	94345 CB4	34.500	1	100.0
94341 07G5_LOW	34.500	94346 CAPS	34.500	1	100.0
94345 CB4	34.500	94352 CLR_4	0.5750	1	29.8
94402 CLR_1	0.5750	94442 CB1	34.500	1	29.8
94403 CLR_2	0.5750	94443 CB2	34.500	1	29.8
94406 CLR_3	0.5750	94444 CB3	34.500	1	29.8
94407 CLR_5	0.5750	94447 CB5	34.500	1	29.8
94441 07G10_LOW	34.500	94442 CB1	34.500	1	100.0
94441 07G10_LOW	34.500	94443 CB2	34.500	1	100.0
94441 07G10_LOW	34.500	94444 CB3	34.500	1	100.0

<u>FROM</u>		<u>TO</u>		<u>CKT</u>	<u>RATING</u>
94441	07G10_LOW	34.500	94445 CB4	34.500	1 100.0
94441	07G10_LOW	34.500	94446 CAPS	34.500	1 100.0
94441	07G10_LOW	34.500	94447 CB5	34.500	1 100.0
94445	CB4	34.500	94452 CLR_4	0.5750	1 29.8
94502	CLR_1	0.5750	94542 CB1	34.500	1 29.8
94503	CLR_2	0.5750	94543 CB2	34.500	1 29.8
94506	CLR_3	0.5750	94544 CB3	34.500	1 29.8
94507	CLR_5	0.5750	94547 CB5	34.500	1 29.8
94508	CLR_6	0.5750	94548 CB6	34.500	1 29.8
94541	HJACK_LOW	34.500	94542 CB1	34.500	1 100.0
94541	HJACK_LOW	34.500	94543 CB2	34.500	1 100.0
94541	HJACK_LOW	34.500	94544 CB3	34.500	1 100.0
94541	HJACK_LOW	34.500	94545 CB4	34.500	1 100.0
94541	HJACK_LOW	34.500	94546 CAPS	34.500	1 100.0
94541	HJACK_LOW	34.500	94547 CB5	34.500	1 100.0
94541	HJACK_LOW	34.500	94548 CB6	34.500	1 100.0
94545	CB4	34.500	94552 CLR_4	0.5750	1 29.8
	INTERFACE TOT3				1680.0
	INTERFACE TOT7				890.0
1100	WRAY_HIGH	115.00	1101 WRAY_LOW	34.500	1 112.0
1100	WRAY_HIGH	115.00	73331 WRAYWAPA	115.00	1 109.0
1101	WRAY_LOW	34.500	91101 CLR_1	0.5750	1 117.2