

November 7, 2014

Dear Loss Factor Stakeholders,

Re: **2015 Final Loss Factors**

The 2015 loss factor calculation has been completed and can be found in the attached document. The AESO has reviewed and endorses this work. These loss factors will be effective from January 1, 2015 to December 31, 2015.


Yours truly,

Han Yu, P.Eng
Engineer



Nov. 7, 2014

APEGA
Permit-to-Practice
P-8200



A handwritten signature in blue ink, followed by the date "2/11/14" written below it.

Prepared For:

Alberta Electric System Operator

2015 Loss Factors

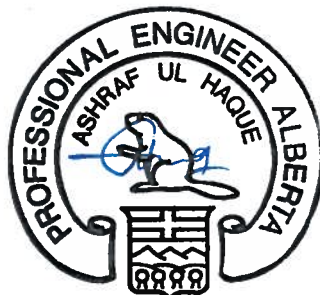
Prepared by:

Teshmont Consultants LP
930, 396-11th Ave SW
Calgary, Alberta, Canada T2R 0C5
www.teshmont.com



2014 November 06

PERMIT TO PRACTICE TESHMONT CONSULTANTS LP
Signature <u>Ashraf</u>
Date <u>Nov 06, 2014</u>
PERMIT NUMBER: P 03012
The Association of Professional Engineers, Geologists and Geophysicists of Alberta



Nov 06, 2014

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1 Purpose

The purpose of this document is to present the 2015 final loss factors along with a brief explanation of the results or changes compared to 2014 recalculated Loss Factors. A loss factor map is included (Appendix III). The loss factors published in this document will be effective from January 01, 2015 to December 31, 2015.

2 Introduction

Teshmont has completed the 2015 loss factor calculation for the AESO. The 2015 loss factors are shown in Table 1, and settlement loss factors of the tie lines are shown in Table 2. Please note values in Table 2 may not add due to rounding. The process includes the application of the 2015 Generic Stacking Order (GSO) published on October 9, 2014 and the 2015 Base Cases published on October 27, 2014 on the AESO web site. Both the GSO and the Base Cases have been updated and posted based on stakeholder input or more current information during the course of the final calculations.

The loss factor calculation uses four key inputs:

- 1) 2015 Generic Stacking Order (GSO)
- 2) New project data
- 3) Loss factor base cases based on 2015 GSO, load and topology forecast
- 4) Annual energy and loss volume forecast

The Rule governing the determination of the loss factors is located at www.aeso.ca > Rules & Standards > ISO Rules > Current ISO Rules.

Table 1 – 2015 Final Loss Factors

MP-ID*	Facility Name	PSS/E Bus	Normalized and Compressed Loss Factor (%)	Loss Factor Asset	Difference % in Loss Factor to System Average
000001511	FT MACLEOD	4237	1.32	Gen	-2.34
000006711	STIRLING	4280	2.88	Gen	-0.79
0000022911	GLENWOOD	4245	1.43	Gen	-2.24
0000025611	HARMATTAN GAS PLANT DG	4124	1.66	Gen	-2.01
0000034911	ALTAGAS PARKLAND	4235	0.90	Gen	-2.76
0000038511	SPRING COULEE	4246	2.57	Gen	-1.10
0000039611	PINCHER CREEK	4224	3.19	Gen	-0.47
0000045411	BUCK LAKE	4080	2.49	Gen	-1.17
0000065911	FORTIS GENALTA CARSON CREEK GENERATOR	4325	1.47	Gen	-2.19
AFG1TX	FORTISALBERTA AL-PAC PULP MILL	2392	0.01	Gen	-3.65
AKE1	MCBRIDE	901	3.28	Gen	-0.38
ANC1	FORTIS ANC (ALBERTA NEWSPRINT COMPANY) - GEN	298	2.76	Gen	-0.91
ARD1	TRANSALTA ARDENVILLE WIND FARM	739	4.15	Gen	0.49
BAR	BARRIER	216	2.60	Gen	-1.07
BCR2	BEAR CREEK G2	10142	-3.93	Gen	-7.59
BCRK	BEAR CREEK G1	10142	-3.93	Gen	-7.59
BIG	BIGHORN	103	4.34	Gen	0.68
BPW	BEARSPAW	183	0.81	Gen	-2.86
BR3	BATTLE RIVER #3	1491	5.01	Gen	1.35
BR4	BATTLE RIVER #4	1491	5.01	Gen	1.35
BR5	BATTLE RIVER #5	1469	4.72	Gen	1.05
BRA	BRAZEAU	56153	2.66	Gen	-1.01
BSR1	BLACKSPRING RIDGE I WIND PROJECT	736	3.65	Gen	-0.02
BTR1	BLUE TRAIL WIND FARM	328	3.89	Gen	0.22
CAS	CASCADE	175	-0.36	Gen	-4.03
CES1	ENMAX CALGARY ENERGY CENTRE CTG	187	1.39	Gen	-2.27
CES2	ENMAX CALGARY ENERGY CENTRE STG	187	1.39	Gen	-2.27
CHIN	CHIN CHUTE	406	3.49	Gen	-0.18
CMH1	CITY OF MEDICINE HAT	680	2.06	Gen	-1.61
CNR5	CNRL HORIZON	1263	2.08	Gen	-1.59
CR1	CASTLE RIVER	234	3.12	Gen	-0.54
CRE1	COWLEY EXPANSION 1	264	4.19	Gen	0.53
CRE2	COWLEY EXPANSION 2	264	4.19	Gen	0.53
CRE3	COWLEY NORTH	264	4.19	Gen	0.53
CRR1	ENEL ALBERTA CASTLE ROCK WIND FARM	221	3.31	Gen	-0.36
CRS1	ENMAX CROSSFIELD ENERGY CENTER	503	1.70	Gen	-1.96
CRS2	ENMAX CROSSFIELD ENERGY CENTER	503	1.70	Gen	-1.96
CRS3	ENMAX CROSSFIELD ENERGY CENTER	503	1.70	Gen	-1.96
CRWD	COWLEY RIDGE WIND POWER PHASE2	264	4.19	Gen	0.53
DAI1	DIASHOWA	1088	-1.84	Gen	-5.50
DOWGEN15M	DOW GTG	61	2.38	Gen	-1.29
DRW1	DRYWOOD 1	4226	1.64	Gen	-2.03
EAGL	WHITE COURT	410	3.16	Gen	-0.51
EC01	CAVAILIER	247	2.45	Gen	-1.22
EC04	FOSTER CREEK G1	1301	1.57	Gen	-2.09
EGC1	ENMAX SHEPARD ENERGY CENTRE	772	1.59	Gen	-2.08
ENC1	CLOVER BAR 1	516	3.06	Gen	-0.61
ENC2	CLOVER BAR 2	516	3.06	Gen	-0.61
ENC3	CLOVER BAR 3	516	3.06	Gen	-0.61
FNG1	FORT NELSON	20000	-2.10	Gen	-5.76
GHO	GHOST	180	1.05	Gen	-2.62
GN1	GENESEE 1	525	4.64	Gen	0.98
GN2	GENESEE 2	525	4.64	Gen	0.98
GN3	GENESEE 3	525	4.64	Gen	0.98
GPEC	GRANDE PRAIRIE ECOPOWER CENTRE	1101	-4.26	Gen	-7.93

MP-ID*	Facility Name	PSS/E Bus	Normalized and Compressed Loss Factor (%)	Loss Factor Asset	Difference % in Loss Factor to System Average
GWW1	SODERGLLEN	358	3.82	Gen	0.15
HAL1	CAPITAL POWER HALKIRK WIND PROJECT	1435	4.71	Gen	1.05
HRM	HR MILNER	1147	-1.65	Gen	-5.31
HSH	HORSESHOE	171	0.99	Gen	-2.68
IEW1	SUMMERVIEW 1	336	3.52	Gen	-0.14
IEW2	SUMMERVIEW 2	336	3.52	Gen	-0.14
INT	INTERLAKES	376	2.32	Gen	-1.35
IOR1	MAHKESES COLD LAKE	56789	0.51	Gen	-3.16
KAN	KANANASKIS	193	0.75	Gen	-2.92
KH1	KEEPHILLS #1	420	4.78	Gen	1.11
KH2	KEEPHILLS #2	420	4.78	Gen	1.11
KH3	KEEPHILLS #3	610	4.63	Gen	0.96
KHW1	KETTLES HILL WIND ENERGY PHASE 2	402	3.34	Gen	-0.33
MATLIMP	MONTANA TIE LINE	451	2.54	Gen	-1.13
MEG1	MEG ENERGY	405	1.41	Gen	-2.26
MKR1	MUSKEG	1236	2.86	Gen	-0.81
MKRC	MCKAY RIVER	1274	3.00	Gen	-0.67
NEP1	GHOST PINE WIND FARM	603	3.95	Gen	0.28
NOVAGEN15M	NOVA JOFFRE	383	1.72	Gen	-1.95
NPC1	NORTHSTONE ELMWORTH	19134	-6.51	Gen	-10.18
NPP1	NORTHERN PRAIRIE POWER PROJECT	1120	-6.72	Gen	-10.39
NRG3	NRGREEN WINDFALL POWER GENERATING STATION	1674	1.99	Gen	-1.68
NX01	BALZAC	290	1.55	Gen	-2.12
NX02	NEXEN OPTI	1241	1.85	Gen	-1.81
OMRH	OLDMAN	230	3.36	Gen	-0.31
PH1	POPLAR HILL	1118	-6.87	Gen	-10.54
PKNE	COWLEY RIDGE WIND POWER PHASE1	264	4.19	Gen	0.53
POC	POCATERRA	214	1.60	Gen	-2.07
PR1	PRIMROSE	1302	1.00	Gen	-2.67
Project1245_1_GN	CENOVUS SUNDAY CREEK BTF	23752	0.30	Gen	-3.37
Project1472_1_GN	FORTIS GENALTA BELLSHILL DG	4078	4.21	Gen	0.55
Project1523_1_GN	ATCO GENALTA CADOTTED GENERATOR INCREASE	19083	-1.23	Gen	-4.89
RB1	RAINBOW 1	1031	-2.83	Gen	-6.50
RB2	RAINBOW 2	1032	-2.83	Gen	-6.50
RB3	RAINBOW 3	1033	-2.58	Gen	-6.25
RB5	RAINBOW 5	1037	-2.64	Gen	-6.30
RL1	RAINBOW 4	1035	-2.25	Gen	-5.92
RUN	RUNDLE	195	1.42	Gen	-2.25
RYMD	RAYMOND RESERVOIR	413	5.11	Gen	1.45
SCL1	SYNCRUDE	1205	3.32	Gen	-0.35
SCR1	SUNCOR MILLENIUM	1208	3.28	Gen	-0.38
SCR2	SUNCOR MAGRATH	251	3.01	Gen	-0.65
SCR3	SUNCOR HILLRIDGE WIND FARM	389	2.01	Gen	-1.65
SCR4	SUNCOR WINTERING HILLS WIND ENERGY PROJECT	759	5.15	Gen	1.49
SCTG	SHELL SCOTFORD	43	2.26	Gen	-1.41
SD1	SUNDANCE #1	135	5.06	Gen	1.40
SD2	SUNDANCE #2	135	5.06	Gen	1.40
SD3	SUNDANCE #3	135	5.06	Gen	1.40
SD4	SUNDANCE #4	135	5.06	Gen	1.40
SD5	SUNDANCE #5	135	5.06	Gen	1.40
SD6	SUNDANCE #6	135	5.06	Gen	1.40
SH1	SHEERNESS #1	1484	4.54	Gen	0.87
SH2	SHEERNESS #2	1484	4.54	Gen	0.87
SHCG	SHELL CAROLINE	370	-0.10	Gen	-3.77
SPR	SPRAY	310	1.26	Gen	-2.41
ST1	STURGEON 1	1166	-0.54	Gen	-4.21
ST2	STURGEON 2	1166	-0.54	Gen	-4.21

MP-ID*	Facility Name	PSS/E Bus	Normalized and Compressed Loss Factor (%)	Loss Factor Asset	Difference % in Loss Factor to System Average
TAB1	TABER WIND	343	0.78	Gen	-2.88
TAY1	TAYLOR HYDRO	670	4.06	Gen	0.40
TC01	CARSELAND	5251	1.79	Gen	-1.87
TC02	REDWATER	50	1.96	Gen	-1.70
THS	THREE SISTERS	379	1.14	Gen	-2.53
VVW1	VALLEYVIEW	1172	-0.49	Gen	-4.16
VVW2	ATCO VALLEY VIEW 2	1172	-0.49	Gen	-4.16
WEY1	P&G WEYERHAUSER	1140	-4.04	Gen	-7.70
WST1	WESGEN	14	0.00	Gen	-3.67
321S033	DAISHOWA-MARUBENI INTERNATIONAL LTD.	1087	2.61	DOS	-1.06

NOTES:

* MP-ID - point where loss factors assessed

For loss factors, "-" means credit, "+" means charge

Loss factors effective from January 01, 2015 to December 31, 2015.

System Average Losses, %: **3.67**

For more information, please visit www.aeso.ca

Table 2 – 2015 Tie Loss Factors

Tie	Transaction Type	Loss Factor (%)	Average Loss Charge (%)	Settlement LF (%)
BC	Import	1.77	0.80	2.57
	Export	-	0.77	0.77
SK	Import	3.91	2.50	6.41
	Export	-	2.30	2.30

3 2015 Loss Factors Overview

The following items provide an overview of 2015 loss factor process:

- 1) Load Treatment in the Loss Factor Software – In the 2015 loss factor calculation, only transmission loads are unassigned¹, all non-transmission loads, i.e., “behind-the-fence” loads, are assigned to generators within their facility of operation. The loss factors are based on generation less the non-transmission load while maintaining the appropriate GSO dispatch at the MPID bus.
- 2) Generation & Load Levels – The 2015 Generic Stacking Order was used to populate the loss factor base cases for the 2015 loss factor calculation. The 2015 loss factors use actual average generation levels to determine loss factors based on the AESO Rule². Please refer to Appendix-I for a case comparison. The load for the 2015 cases has been scaled down in two (2) of the twelve (12) cases to meet the total GSO capacity. The seasonal load duration curves are included in Appendix II.
- 3) Additions of Generation – Several new generation facilities were added in the 2015 loss factor base cases, including Fortis Genalta Bellshill DG, Cenovus Sunday Creek BTF, and ATCO Genalta Cadotte Generator increase. These projects were added according to their in-service-date.
- 4) Small Power Research and Development (SPR&D) Generators – The SPR&D Act exempted a number of generators from paying transmission losses based on a SPR&D contract. These contracts were valid for 20 years and starting in 2011, most of the SPR&D contracts have begun to expire.
- 5) ISD Equivalents – In the 2015 cases, Industrial System Designations (ISDs) are modeled in the same way as they were modeled in the 2014 cases. The total ISD load and generation are modeled at the ISD’s AIES interface bus.
- 6) Topology – The major 2015 planned transmission project additions include the large staged reinforcement projects including the transmission development in Central, South, Northeast and Edmonton regions. All other 2015 planned system additions have also been modeled in the 2015 cases.
- 7) Average System Losses and Shift Factor – the annual loss forecast for 2015 is 2.43 TWH or 3.67%. Please refer to Table 3 for a comparison of the system average loss and shift factor.

¹ Please see Section 2.2 of [Loss Factor Calculation Methodology - Effective January 01, 2009](#)

² Please see Section 5 of the Appendix 1 of [Section 501.10 Transmission Loss Factor Requirements](#)

Table 3 – 2015 vs. 2014 Final Loss Factors

	2015	2014
System average loss	3.67%	3.39%
Shift Factor	0.87%	0.39%
Loss recovered by Raw Loss Factor	2.80%	3.00%

- 8) Weighting Factor – In a continuing effort to enhance accuracy, Teshmont has applied unequal weighting factors to the raw loss factors based on forecast load levels. Please see Table 4 for 2015 weighting factors used in the loss factor calculation.

Table 4 – 2015 Weighting Factors

	Winter		Spring		Summer		Fall	
	Duration (hr)	Weight	Duration (hr)	Weight	Duration (hr)	Weight	Duration (hr)	Weight
High	50	2.3%	75	3.4%	125	5.7%	125	5.7%
Medium	1950	90.3%	1750	79.3%	1850	83.8%	1475	67.5%
Low	160	7.4%	382	17.3%	233	10.6%	585	26.8%

4 2015 Loss Factor Updates From Draft to Final Base Cases

The difference between the final and draft base cases is that the load mismatches were further adjusted to more closely reflect net-to-grid and GSO dispatch. On this basis the loss factors have undergone some minor changes from the 2015 draft posting to the 2015 final loss factors in Table 1 of this document.

5 2015 Overall Loss Factor Results

There are some changes between the 2015 final loss factors and the Final Alberta Recalculated Loss Factors for 2014. Changes in loss factors can be attributed to changes in: dispatched generation, load and transmission topology resulting from new projects. The high level results are summarized below:

1. The Rainbow area has experienced an increase in loss factor charge. The flow out of the Rainbow area has increased and it is reflected in the loss factors. The Rainbow area loss factors are historically sensitive to load and generation changes. The loss factor sensitivity in the area is consistent with previous years' findings.
2. The Fort McMurray area has seen an increase in loss factor charge relative to the 2014 recalculated loss factors. The increase in charge can be attributed to a large increase in generation compared to transmission load resulting in a higher net flow out of the area.
3. The Wabamun area loss factors are higher due to net flow out of the area.
4. The Battle River area loss factors are lower due to decrease in net flow out of the area.

5. The Calgary and southern Alberta area loss factors are higher due to higher net flow out of Calgary. The generations additions are higher than the load increase from 2014 to 2015.

6 Loss Factor Map

Teshmont has provided a loss factor map in Appendix III showing the maximum and minimum loss factors in each area. The tie lines and DOS loss factors are also shown. Each facility with a loss factor is shown in its designated area.

7 Conclusion

Teshmont has prepared the 2015 loss factors as per the AESO's Loss Factor Rule, and has made the calculation and provided results using the best information available. The data process includes gathering data from the billing system, new customer facilities, and system load and topology features. Teshmont has completed the loss factor calculation process and has had the results independently run for comparison purposes. The results from Teshmont's calculation are identical to the results run independently.

The AESO published the draft values on October 27, 2014 for stakeholders' review. The 2015 loss factors will be applicable from January 01, to December 31, 2015.

Appendix I: Case Comparison - AIL

Winter Peak Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	10309.8	166.2	10476.0	27.9	314.5	398.1	-
2014 Recal	10593.6	170.8	10764.4	25.3	322.5	491.3	-
2015 - 2014	-283.8	-4.6	-288.4	2.6	-8.0		

Winter Medium Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	9301.4	168.2	9469.6	27.8	290.9	147.6	-
2014 Recal	9814.6	166.8	9981.4	25.5	297.9	361.4	-
2015 - 2014	-513.1	1.4	-511.7	2.3	-7.0		

Winter Low Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	7675.0	463.6	8138.6	27.7	288.8	-	341.9
2014 Recal	8774.3	164.6	8938.9	25.4	268.3	84.9	-
2015 - 2014	-1099.3	299.0	-800.3	2.3	20.5		

Spring Peak Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	9501.0	167.0	9668.0	28.3	291.1	122.1	-
2014 Recal	9929.1	164.1	10093.2	25.8	272.6	522.7	-
2015 - 2014	-428.1	2.9	-425.2	2.5	18.5		

Spring Medium Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	8652.5	165.9	8818.4	28.1	237.9	187.6	-
2014 Recal	9094.7	155.6	9250.3	25.8	250.8	356.1	-
2015 - 2014	-442.3	10.3	-432.0	2.3	-12.9		

Spring Low Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	7456.5	167.0	7623.5	28.2	184.9	181.3	-
2014 Recal	8083.1	153.2	8236.3	25.7	225.9	259.5	-
2015 - 2014	-626.6	13.8	-612.8	2.5	-41.0		

Summer Peak Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	9658.3	166.0	9824.3	28.3	284.6	473.1	-
2014 Recal	10061.3	158.6	10219.9	25.8	293.6	467.2	-
2015 - 2014	-403.0	7.4	-395.6	2.5	-9.0		

Summer Medium Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	8584.7	168.5	8753.2	28.3	197.7	187.1	-
2014 Recal	8985.6	163.0	9148.6	25.9	249.2	428.5	-
2015 - 2014	-400.9	5.5	-395.4	2.4	-51.5		

Summer Low Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	7499.8	166.0	7665.8	28.5	163.5	149.4	-
2014 Recal	8040.4	154.9	8195.3	25.6	208.4	450.9	-
2015 - 2014	-540.6	11.1	-529.5	2.9	-44.9		

Fall Peak Case

	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	9960.7	159.1	10119.8	28.6	303.2	219.8	-
2014 Recal	10344.0	165.1	10509.1	26.1	292.0	544.6	-
2015 - 2014	-383.3	-6.0	-389.3	2.5	11.2		

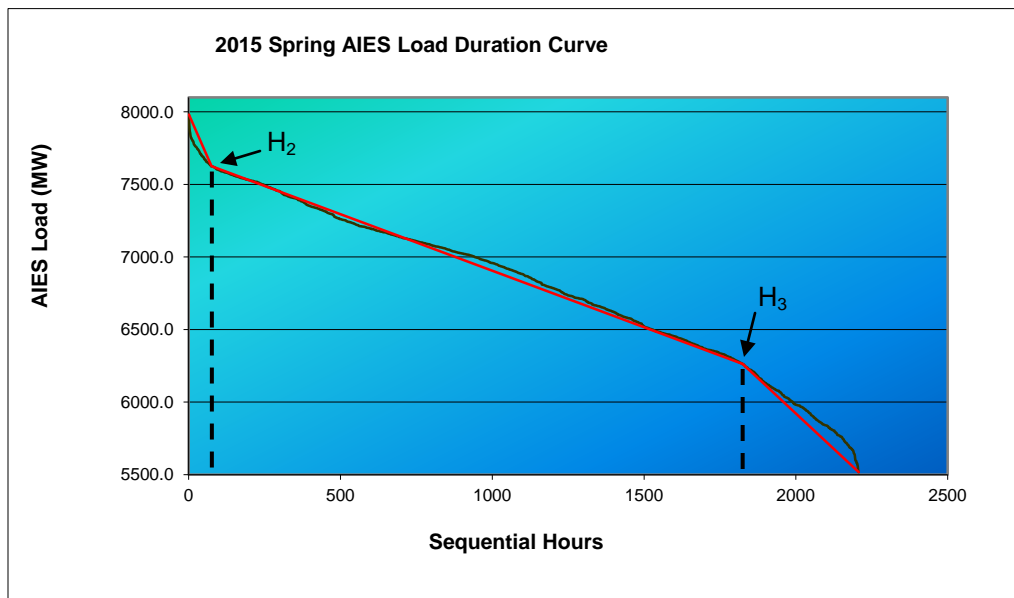
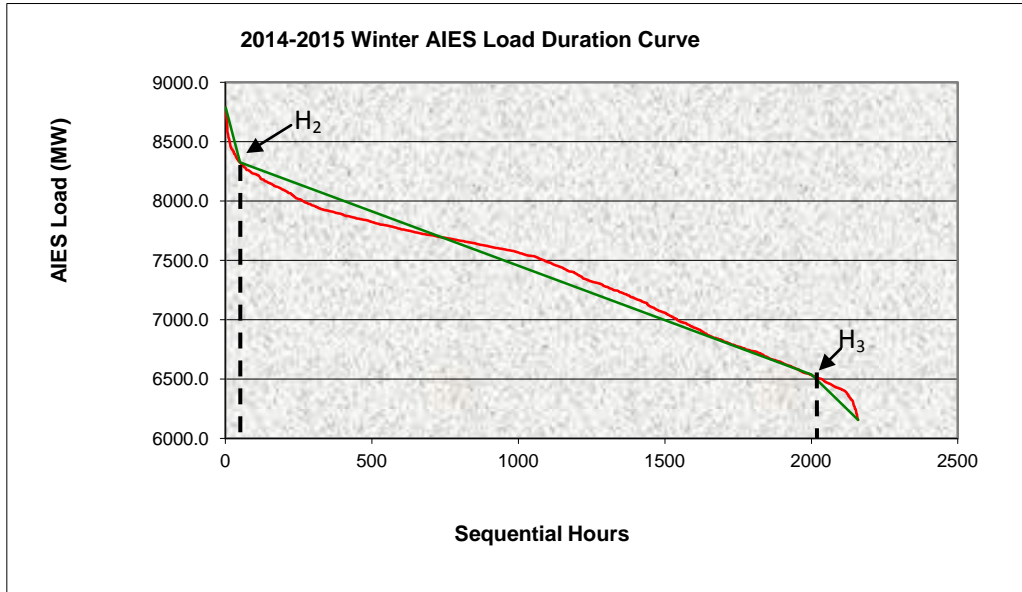
Fall Medium Case

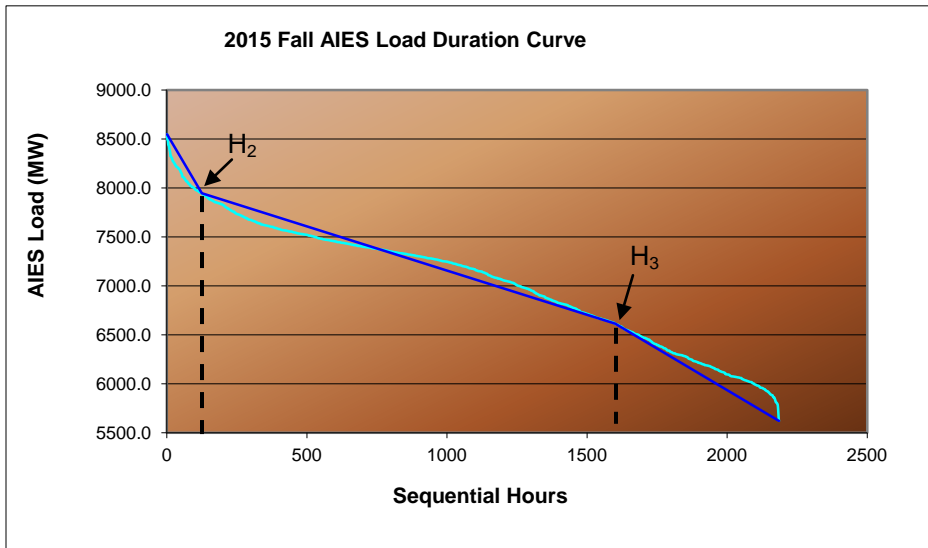
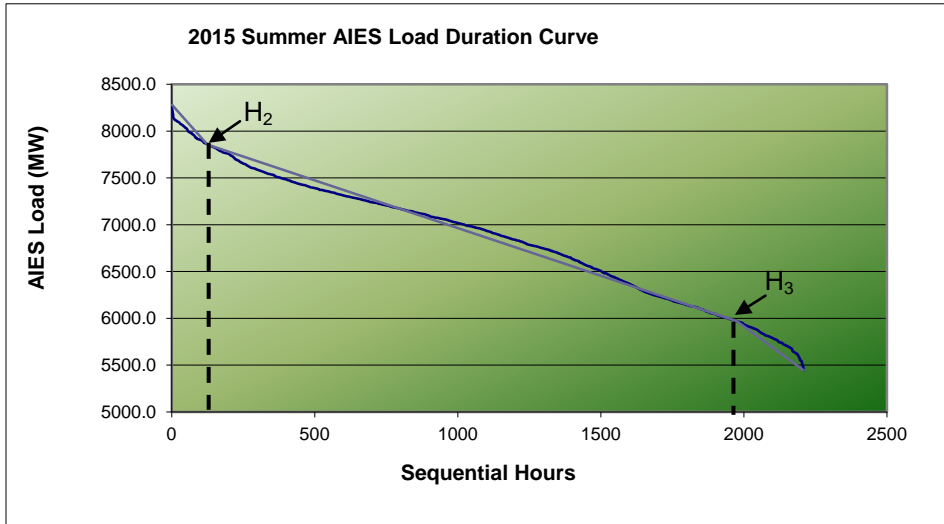
	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	8962.4	165.3	9127.7	28.5	224.0	126.1	-
2014 Recal	9401.2	163.6	9564.8	26.1	264.6	309.7	-
2015 - 2014	-438.9	1.7	-437.2	2.4	-40.6		

Fall Low Case

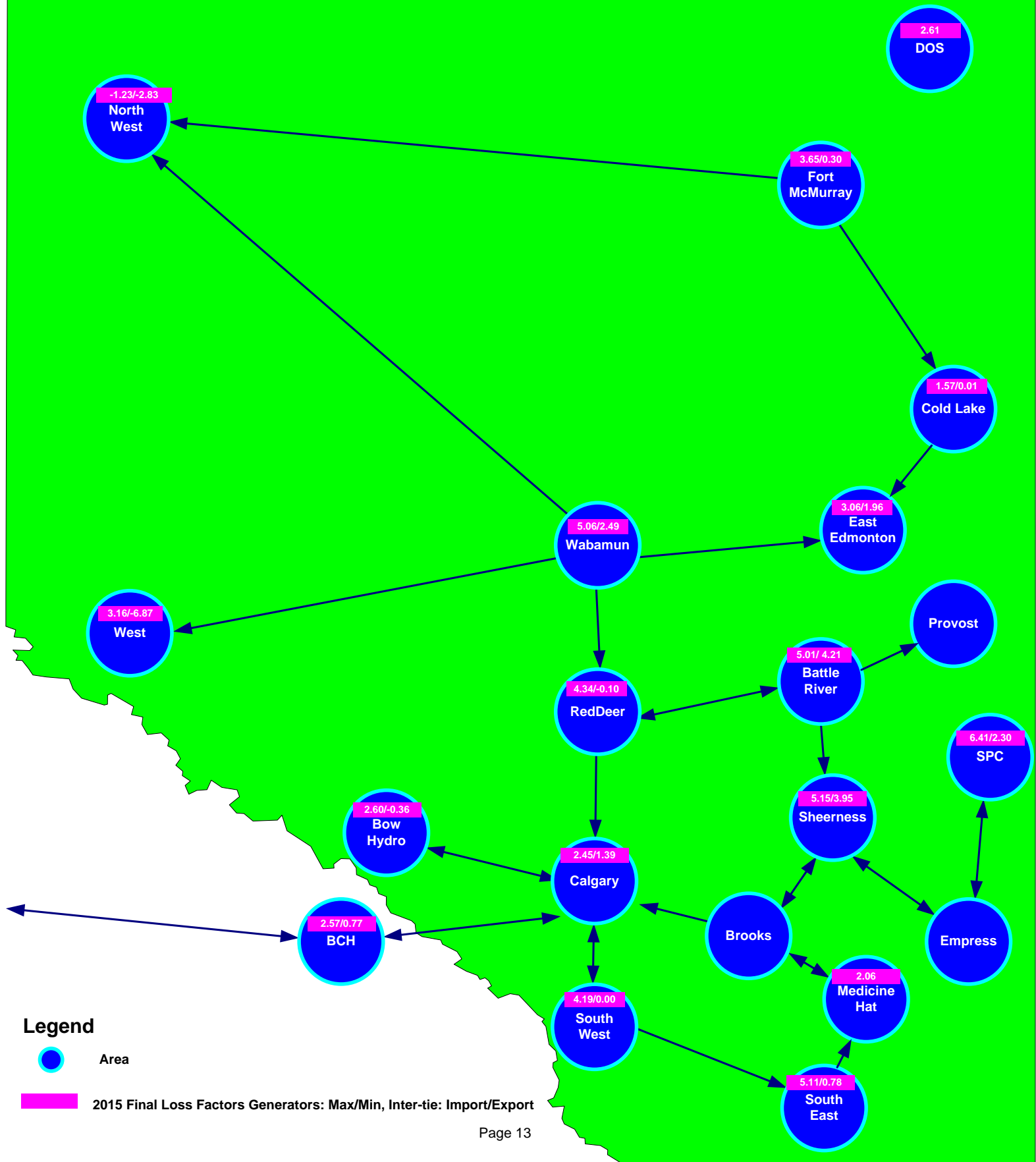
	Load (MW)			Loss (MW)		BC Import (MW)	BC Export (MW)
	Static	Motor	Total	Shunt	Transmission		
2015	7948.5	248.1	8196.6	28.5	183.2	-	123.8
2014 Recal	8461.7	164.4	8626.1	25.9	224.8	33.4	
2015 - 2014	-513.2	83.7	-429.5	2.6	-41.6		

Appendix II: Load Duration Curves





Teshmont Appendix III: 2015 Loss Factor Map



Location	MPID	Loss Factor(%)	Gen Name
North West	RB1	-2.83	RAINBOW 1
	RB2	-2.83	RAINBOW 2
	RB3	-2.58	RAINBOW 3
	RL1	-2.25	RAINBOW 4
	RB5	-2.64	RAINBOW 5
	FNG1	-2.10	FORT NELSON
	Project1523_1_GN	-1.23	ATCO GENALTA CADOTTED GENERATOR INCREASE
West	HRM	-1.65	HR MILNER
	PH1	-6.87	POPLAR HILL
	NPC1	-6.51	NORTHSTONE ELMWORTH
	DAI1	-1.84	DIASHOWA
	BCR2	-3.93	BEAR CREEK G2
	BCRK	-3.93	BEAR CREEK G1
	GPEC	-4.26	GRANDE PRAIRIE ECOPOWER CENTRE
	ST1	-0.54	STURGEON 1
	ST2	-0.54	STURGEON 2
	VVW1	-0.49	VALLEYVIEW
	VVW2	-0.49	ATCO VALLEY VIEW 2
	WEY1	-4.04	P&G WEYERHAUSER
	NPP1	-6.72	NORTHERN PRAIRIE POWER PROJECT
	NRG3	1.99	NRGREEN WINDFALL POWER GENERATING STATION
	EAGL	3.16	WHITE COURT
ANC1	2.76	FORTIS ANC (ALBERTA NEWSPRINT COMPANY)	
Fort McMurray	MKR1	2.86	MUSKEG
	MKRC	3.00	MCKAY RIVER
	SCL1	3.32	SYNCRUDE
	SCR1	3.28	SUNCOR MILLENIUM
	NX02	1.85	NEXEN OPTI
	MEG1	1.41	MEG ENERGY
	CNR5	2.08	CNRL HORIZON
	BSR1	3.65	BLACKSPRING RIDGE I WIND PROJECT
	Project1245_1_GN	0.30	CENOVUS SUNDAY CREEK BTF
Wabamun	GN1	4.64	GENESEE 1
	GN2	4.64	GENESEE 2
	GN3	4.64	GENESEE 3
	KH1	4.78	KEEPPHILLS #1
	KH2	4.78	KEEPPHILLS #2
	KH3	4.63	KEEPPHILLS #3
	SD1	5.06	SUNDANCE #1
	SD2	5.06	SUNDANCE #2
	SD3	5.06	SUNDANCE #3
	SD4	5.06	SUNDANCE #4
	SD5	5.06	SUNDANCE #5
	SD6	5.06	SUNDANCE #6

Location	MPID	Loss Factor(%)	Gen Name
	0000045411	2.49	BUCK LAKE
Cold Lake	IOR1	0.51	MAHKESES COLD LAKE
	PR1	1.00	PRIMROSE
	EC04	1.57	FOSTER CREEK G1
	AFG1TX	0.01	FORTISALBERTA AL-PAC PULP MILL
East Edmonton	SCTG	2.26	SHELL SCOTFORD
	TC02	1.96	REDWATER
	ENC1	3.06	CLOVER BAR 1
	ENC2	3.06	CLOVER BAR 2
	ENC3	3.06	CLOVER BAR 3
	DOWGEN15M	2.38	DOW GTG
Red Deer	NOVAGEN15M	1.72	NOVA JOFFRE
	BIG	4.34	BIGHORN
	BRA	2.66	BRAZEAU
	SHCG	-0.10	SHELL CAROLINE
Calgary	CES1	1.39	ENMAX CALGARY ENERGY CENTRE CTG
	CES2	1.39	ENMAX CALGARY ENERGY CENTRE STG
	TC01	1.79	CARSELAND
	EC01	2.45	CAVAILIER
	NX01	1.55	BALZAC
	CRS1	1.70	ENMAX CROSSFIELD ENERGY CENTER
	CRS2	1.70	ENMAX CROSSFIELD ENERGY CENTER
	CRS3	1.70	ENMAX CROSSFIELD ENERGY CENTER
	0000025611	1.66	HARMATTAN GAS PLANT DG
EGC1	1.59	ENMAX SHEPARD ENERGY CENTRE	
Bow Hydro	BAR	2.60	BARRIER
	BPW	0.81	BEARSPAW
	CAS	-0.36	CASCADE
	GHO	1.05	GHOST
	HSH	0.99	HORSESHOE
	KAN	0.75	KANANASKIS
	POC	1.60	POCATERRA
	INT	2.32	INTERLAKES
	RUN	1.42	RUNDLE
	THS	1.14	THREE SISTERS
SPR	1.26	SPRAY	
South East	SCR2	3.01	SUNCOR MAGRATH
	TAY1	4.06	TAYLOR HYDRO
	0000006711	2.88	STIRLING
	SCR3	2.01	SUNCOR HILLRIDGE WIND FARM
	TAB1	0.78	TABER WIND
	MATLIMP	2.54	MONTANA TIE LINE
	CHIN	3.49	CHIN CHUTE
	RYMD	5.11	RAYMOND RESERVOIR

Location	MPID	Loss Factor(%)	Gen Name
Battle River	BR3	5.01	BATTLE RIVER #3
	BR4	5.01	BATTLE RIVER #4
	BR5	4.72	BATTLE RIVER #5
	Project1472_1_GN	4.21	FORTIS GENALTA BELLSHILL DG
Medicine Hat	CMH1	2.06	CITY OF MEDICINE HAT
Sheerness	SH1	4.54	SHEERNESS #1
	SH2	4.54	SHEERNESS #2
	NEP1	3.95	GHOST PINE WIND FARM
	HAL1	4.71	CAPITAL POWER HALKIRK WIND PROJECT
	SCR4	5.15	SUNCOR WINTERING HILLS WIND ENERGY PROJECT
South West	AKE1	3.28	MCBRIDE
	DRW1	1.64	DRYWOOD 1
	IEW1	3.52	SUMMERVIEW 1
	IEW2	3.52	SUMMERVIEW 2
	CR1	3.12	CASTLE RIVER
	OMRH	3.36	OLDMAN
	0000022911	1.43	GLENWOOD
	0000039611	3.19	PINCHER CREEK
	0000038511	2.57	SPRING COULEE
	CRE1	4.19	COWLEY EXPANSION 1
	CRE2	4.19	COWLEY EXPANSION 2
	CRE3	4.19	COWLEY NORTH
	CRWD	4.19	COWLEY RIDGE WIND POWER PHASE2
	0000001511	1.32	FT MACLEOD
	PKNE	4.19	COWLEY RIDGE WIND POWER PHASE1
	GWW1	3.82	SODERGLEN
	0000034911	0.90	ALTAGAS PARKLAND
	BTR1	3.89	BLUE TRAIL WIND FARM
	ARD1	4.15	TRANSALTA ARDENVILLE WIND FARM
	KHW1	3.34	KETTLES HILL WIND ENERGY PHASE 2
CRR1	3.31	Enel Alberta Castle Rock Wind Farm	
0000065911	1.47	FORTIS GENALTA CARSON CREEK GENERATOR	
BCH	BCHIMP	2.57	BCH - Import
	BCHEXP	0.77	BCH - Export
SPC	SPCIMP	6.41	SPC - Import
	SPCEXP	2.30	SPC - Export
DOS	321S033	2.61	DAISHOWA-MARUBENI INTERNATIONAL LTD.