Newport Power Station Indoor 220 kV GIS Replacement

TRR Network Studies Results

VOLT CONSULT

Document History

Revision	Date	Details
1	14/10/2024	Initial Issue
2	16/10/2024	Updated tables to include Arc Furnace loading and Winter Load at Risk
3	29/10/2024	Adjusted the format that load at risk is presented in the results tables

	Date	Details	Designation
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1.0 Introduction

AusNet is preparing business cases for several major station replacement projects in connection with the 2027-2032 Transmission Revenue Reset (TRR). Some of these projects require network studies (steady-state load flow studies) to assess the market impact of asset failures. To that end, VoltConsult Pty Ltd ("VoltConsult") were engaged by AusNet to conduct load flow studies for certain projects and scenarios using software, models, information and equipment provided by AusNet.

The avoided cost of an asset failure will be used to economically justify the investment in support of AusNet's TRR Capex forecast and will be used as supporting information for the TRR revenue application. The economic justification and related calculations for these projects are not included in VoltConsult's scope but will be completed by others.

The results in this document refer to network studies carried out for the potential replacement of the Newport Power Station's (NPSD) Gas Insulated Switchgear (GIS) and are purely technical in nature.

2.0 Network Study Methodology

Using the PSSE transmission network model provided by AusNet, the specific operating scenarios shown in Table A were studied.

Table A – Network Study Scenarios

Study	Network Configuration	Asset Failure Contingency N-1	Asset Failure Contingency N-2	Secure Operating State Contingency
1a	Existing	Generator OFF	None	Summer
1b	Existing	Generator OFF	None	Winter
2a	Existing	Generator OFF	NPSD-BLTS and NPSD-FBTS OOS	Summer
2b	Existing	Generator OFF	NPSD-BLTS and NPSD-FBTS OOS	Winter
3a	Existing	NPSD-BLTS OOS	None	Summer
3b	Existing	NPSD-BLTS OOS	None	Winter
4a	Existing	NPSD-FBTS OOS	None	Summer
4b	Existing	NPSD-FBTS OOS	None	Winter

Each study followed the general procedure outlined below:

1. Conduct a load flow study (with transformer tap stepping and switched shunt adjustments enabled) on the system in its normal operation configuration
2. Configure the system to match the specific scenario to be studied (i.e. disconnect the applicable plant or line)
3. Select the buses to be used as a sub-system for the assessment
4. Conduct a load flow
5. Review the line, bus and transformer voltage and loading results for the sub-system using PSSE's reports function
6. If all parameters are within the required ranges, scale up the sub-system loads by a certain percentage
7. Conduct a load flow
8. Repeat steps 5-7 until the sub-system loads are similar to the forecast loads of a particular year
9. Analyse the load flows and take another key element out of service (OOS) from the network
10. Conduct a load flow
11. Repeat steps 5-7 until a line or transformer reaches its maximum capacity or repeat steps 9-10 if the results show that a different element might be more critical
12. Once the most critical element has been determined and is operating at its maximum capacity while the system is within appropriate voltage limits, record the sub-system loadings
13. Compare the maximum sub-system loadings against the forecast loading and ascertain the power at risk

The buses selected for the sub-system in PSSE were as follows:

302031,303001,304030,302030,302080,314021,314031,314032,314089,323580,323531,326001,326080,341001,341030,341081,341080, 341090,343030,360001,360080,373080,373081,379080,387030,387080

Loads were scaled at ATS, DPTS, BLTS, FBTS, WMTS and KTS when modelling each scenario.

3.0 Results

A summary of the key outcomes of each study are shown in Table B below:

Table B – Network Study Scenarios Summary of Outcomes

Study	Network Configuration	Asset Failure Contingency N-1	Asset Failure Contingency N-2	Secure Operating State Contingency	PSSE Filename	Results Text File
1a	Existing	Generator OFF	None	Summer – KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S1a_DLR_KTS A3 OUT_MAX.sav	NPSD Study 1a PSSE Reports
1b	Existing	Generator OFF	None	Winter–KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S1b_DLR_KTS A3 OUT_MAX.sav	NPSD Study 1b PSSE Reports
2a	Existing	Generator OFF	NPSD-BLTS and NPSD-FBTS OOS	Summer – KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S2a_DLR_KTS A3 OUT_MAX.sav	NPSD Study 2a PSSE Reports
2b	Existing	Generator OFF	NPSD-BLTS and NPSD-FBTS OOS	Winter–KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S2b_DLR_KTS A3 OUT_MAX.sav	NPSD Study 2b PSSE Reports
3a	Existing	NPSD-BLTS OOS	None	Summer – KTS A2 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S3a_DLR_KTS A2 OUT_MAX.sav	NPSD Study 3a PSSE Reports
3b	Existing	NPSD-BLTS OOS	None	Winter–KTS A2 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S3b_DLR_KTS A2 OUT_MAX.sav	NPSD Study 3b PSSE Reports
4a	Existing	NPSD-FBTS OOS	None	Summer – KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_S4a_DLR_KTS A3 OUT_MAX.sav	NPSD Study 4a PSSE Reports
4b	Existing	NPSD-FBTS OOS	None	Winter–KTS A3 Transformer OOS	VAPR2023 max yr1 issue v15_NPSD_4b_DLR_KTS A3 OUT_MAX.sav	NPSD Study 4b PSSE Reports

Table B highlights that the Keilor Terminal Station (KTS) A2 and A3 Transformers are the most critical elements in the safe operation of the Western Metropolitan Ring (WMR) when another element at NPSD is out of service.

3.1 Scenario 1

This scenario assumes that the Newport Generator is not operating.

3.1.1 Scenario 1a – Summer

AEMO's Summer POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table C – Scenario 1a Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 1a Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**294.8**	54.8	90.8	119.8	158.2	169.5	191.6	195.0	199.0	203.3	208.1	228.1
ATS_WEST	Hybrid	66	MW	**183.0**	18.0	57.2	68.1	73.2	80.6	88.4	98.1	110.2	121.8	133.7	146.0
BLTS	Entire	22	MW	**48.4**	0.0	12.9	17.8	23.2	22.7	22.1	21.8	21.7	21.9	22.2	22.7
DPTS	Hybrid	66	MW	**312.2**	0.0	0.0	16.8	21.0	28.3	34.6	46.0	57.1	68.0	81.4	93.7
FBTS	Entire	66	MW	**263.4**	0.0	17.1	35.8	40.8	42.1	42.2	42.9	50.9	61.0	68.8	77.0
KTS	Entire	66	MW	**601.6**	0.0	0.0	0.0	0.0	0.0	0.0	47.5	93.5	152.3	188.4	215.5
WMTS	Entire	66	MW	**323.7**	0.0	0.0	20.3	32.0	43.3	56.8	70.4	84.4	98.4	114.0	132.2
			Yearly Load @ Risk (MW)		**72.8**	**178.0**	**278.6**	**348.4**	**386.5**	**435.7**	**521.7**	**616.8**	**726.7**	**816.6**	**915.2**

At a total WMR loading of approximately 2,027 MW, and with the KTS A3 Transformer OOS, the SMTS H1 Transformer is at its limit with a load of 698 MW, 62.2 MVAr (701.3 MVA). The maximum transformer rating is 700 MVA. Loading at the in-service KTS A Transformers is within rating.

Bus voltages in the WMR do not fall below 0.9pu (except at NPSD) under these conditions. Refer to results text file for more information.

3.1.2 Scenario 1b – Winter

The secure operating contingency in this study is the same as that for Study 1a. The SMTS H1 Transformer has the same summer and winter ratings. Since the SMTS H1 load is the key limiting factor, the ring's winter line and transformer ratings do not allow for larger loadings when the Newport Generator and KTS A3 Transformer are OOS. Refer to results text file for more information.

AEMO's Winter POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table D – Scenario 1b Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 1b Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**294.8**	56.2	90.0	117.8	154.2	168.3	192.8	196.3	200.4	203.8	207.7	224.2
ATS_WEST	Hybrid	66	MW	**183.0**	0.8	23.9	37.7	49.8	62.7	77.5	93.2	109.7	123.3	136.8	152.8
BLTS	Entire	22	MW	**48.4**	11.4	16.2	20.4	26.2	27.0	27.7	28.9	30.3	31.0	32.0	32.0
DPTS	Hybrid	66	MW	**312.2**	0.0	0.0	10.1	24.6	40.4	58.2	77.3	97.2	113.1	129.8	147.5
FBTS	Entire	66	MW	**263.4**	0.0	0.0	0.0	8.4	15.8	22.9	32.3	45.4	55.7	66.5	76.5
KTS	Entire	66	MW	**601.6**	0.0	0.0	0.0	0.0	0.0	0.0	55.5	107.9	167.3	203.9	233.1
WMTS	Entire	66	MW	**323.7**	0.0	0.0	0.0	0.0	0.0	16.8	35.4	54.5	72.8	89.3	112.8
			Yearly Load @ Risk (MW)		**68.4**	**130.1**	**186.0**	**263.2**	**314.2**	**395.8**	**518.9**	**645.4**	**767.0**	**866.0**	**978.8**

3.2 Scenario 2

This scenario assumes that the Newport Generator is not operating and both NPSD-BLTS and NPSD-FBTS lines are OOS.

3.2.1 Scenario 2a – Summer

AEMO's Summer POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table E – Scenario 2a Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 2a Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**279.9**	69.7	105.7	134.7	173.1	184.4	206.5	209.9	213.9	218.2	223	243
ATS_WEST	Hybrid	66	MW	**170.4**	30.6	69.8	80.7	85.8	93.2	101	110.7	122.8	134.4	146.3	158.6
BLTS	Entire	22	MW	**44.9**	0	16.4	21.3	26.7	26.2	25.6	25.3	25.2	25.4	25.7	26.2
DPTS	Hybrid	66	MW	**289.8**	0	0.2	39.2	43.4	50.7	57	68.4	79.5	90.4	103.8	116.1
FBTS	Entire	66	MW	**244.4**	3.4	36.1	54.8	59.8	61.1	61.2	61.9	69.9	80	87.8	96
KTS	Entire	66	MW	**558.0**	0	0	0	0	17.9	40.1	91.1	137.1	195.9	232	259.1
WMTS	Entire	66	MW	**300.3**	0	14.6	43.7	55.4	66.7	80.2	93.8	107.8	121.8	137.4	155.6
			Yearly Load @ Risk (MW)		**103.7**	**242.8**	**374.4**	**444.2**	**500.2**	**571.6**	**661.1**	**756.2**	**866.1**	**956**	**1054.6**

At a total WMR loading is approximately 1,887 MW, and with the KTS A3 Transformer OOS, the SMTS H1 Transformer is at its limit with a load of 698.8 MW, 49.0 MVAr (700.5 MVA). The maximum transformer rating is 700 MVA. Loading at in-service KTS A Transformers is within rating.

Bus voltages in the WMR do not fall below 0.9pu under these conditions. Refer to results text file for more information.

3.2.2 Scenario 2b – Winter

The secure operating contingency in this study is the same as that for Study 2a. The SMTS H1 Transformer has the same summer and winter ratings. Since the SMTS H1 load is the key limiting factor, the ring's winter line and transformer ratings do not allow for larger loadings when the Newport Generator, NPSD-BLTS, NPSD-FBTS and KTS A3 Transformer are OOS. Refer to results text file for more information.

AEMO's Winter POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table F – Scenario 2b Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 2b Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**279.9**	71.1	104.9	132.7	169.1	183.2	207.7	211.2	215.3	218.7	222.6	239.1
ATS_WEST	Hybrid	66	MW	**170.4**	13.4	36.5	50.3	62.4	75.3	90.1	105.8	122.3	135.9	149.4	165.4
BLTS	Entire	22	MW	**44.9**	14.9	19.7	23.9	29.7	30.5	31.2	32.4	33.8	34.5	35.5	35.5
DPTS	Hybrid	66	MW	**289.8**	0.0	11.2	32.5	47.0	62.8	80.6	99.7	119.6	135.5	152.2	169.9
FBTS	Entire	66	MW	**244.4**	0.0	2.2	18.4	27.4	34.8	41.9	51.3	64.4	74.7	85.5	95.5
KTS	Entire	66	MW	**558.0**	0.0	0.0	0.0	0.0	8.8	41.7	99.1	151.5	210.9	247.5	276.7
WMTS	Entire	66	MW	**300.3**	0.0	0.0	0.0	0.6	21.3	40.2	58.8	77.9	96.2	112.7	136.2
			Yearly Load @ Risk (MW)		**99.4**	**174.6**	**257.7**	**336.2**	**416.7**	**533.3**	**658.3**	**784.8**	**906.4**	**1005.4**	**1118.2**

3.3 Scenario 3

This scenario assumes that the Newport Generator is operating and the NPSD-BLTS line is OOS.

3.3.1 Scenario 3a – Summer

AEMO's Summer POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table G – Maximum Load and Load at Risk at Secure Operating Contingency

	Location Type			Study 3a Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**342.4**	7.2	43.2	72.2	110.6	121.9	144.0	147.4	151.4	155.7	160.5	180.5
ATS_WEST	Hybrid	66	MW	**222.6**	0.0	17.6	28.5	33.6	41.0	48.8	58.5	70.6	82.2	94.1	106.4
BLTS	Entire	22	MW	**59.2**	0.0	2.1	7.0	12.4	11.9	11.3	11.0	10.9	11.1	11.4	11.9
DPTS	Hybrid	66	MW	**382.4**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	23.5
FBTS	Entire	66	MW	**322.5**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	9.7	17.9
KTS	Entire	66	MW	**736.6**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	53.4	80.5
WMTS	Entire	66	MW	**396.2**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	25.9	41.5	59.7
			Yearly Load @ Risk (MW)		**7.2**	**62.9**	**107.7**	**156.6**	**174.8**	**204.1**	**216.9**	**244.8**	**294.1**	**381.8**	**480.4**

At a total WMR loading of approximately 2,462 MW, and with the KTS A2 Transformer OOS, the KTS A3 Transformer is at its limit with a load of 722.2 MW, 200 MVAr (749.4 MVA). The maximum transformer rating is 750 MVA. Bus voltages in the WMR do not fall below 0.9pu under these conditions. DPTS B Transformers are close to being overloaded. KTS B3 and B4 Transformers are overloaded. Refer to results text file for more information.

3.3.2 Scenario 3b – Winter

The secure operating contingency in this study is the same as that for Study 3a. KTS A Transformers have the same summer and winter ratings. Since the KTS loads are the key limiting factors, the ring's winter line and transformer ratings do not allow for larger loadings when the NPSD-BLTS Line and KTS A2 Transformer are OOS. Refer to results text file for more information.

AEMO's Winter POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table H – Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 3b Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**342.4**	8.6	42.4	70.2	106.6	120.7	145.2	148.7	152.8	156.2	160.1	176.6
ATS_WEST	Hybrid	66	MW	**222.6**	0.0	0.0	0.0	10.2	23.1	37.9	53.6	70.1	83.7	97.2	113.2
BLTS	Entire	22	MW	**59.2**	0.6	5.4	9.6	15.4	16.2	16.9	18.1	19.5	20.2	21.2	21.2
DPTS	Hybrid	66	MW	**382.4**	0.0	0.0	0.0	0.0	0.0	0.0	7.1	27.0	42.9	59.6	77.3
FBTS	Entire	66	MW	**322.5**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	17.4
KTS	Entire	66	MW	**736.6**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.3	68.9	98.1
WMTS	Entire	66	MW	**396.2**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	16.8	40.3
			Yearly Load @ Risk (MW)		**9.2**	**47.8**	**79.8**	**132.2**	**160.0**	**200.0**	**227.5**	**269.4**	**335.6**	**431.2**	**544.0**

3.4 Scenario 4

This scenario assumes that the Newport Generator is operating and the NPSD-FBTS line is OOS.

3.4.1 Scenario 4a – Summer

AEMO's Summer POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table I – Maximum Load and Load at Risk at Secure Operating Contingency

	Location Type			Study 4a Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**316.6**	33.0	69.0	98.0	136.4	147.7	169.8	173.2	177.2	181.5	186.3	206.3
ATS_WEST	Hybrid	66	MW	**199.8**	1.2	40.4	51.3	56.4	63.8	71.6	81.3	93.4	105.0	116.9	129.2
BLTS	Entire	22	MW	**53.0**	0.0	8.3	13.2	18.6	18.1	17.5	17.2	17.1	17.3	17.6	18.1
DPTS	Hybrid	66	MW	**342.0**	0.0	0.0	0.0	0.0	0.0	4.8	16.2	27.3	38.2	51.6	63.9
FBTS	Entire	66	MW	**288.5**	0.0	0.0	10.7	15.7	17.0	17.1	17.8	25.8	35.9	43.7	51.9
KTS	Entire	66	MW	**658.7**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.4	95.2	131.3	158.4
WMTS	Entire	66	MW	**354.4**	0.0	0.0	0.0	1.3	12.6	26.1	39.7	53.7	67.7	83.3	101.5
			Yearly Load @ Risk (MW)		**34.2**	**117.7**	**173.2**	**228.4**	**259.2**	**306.9**	**345.4**	**430.9**	**540.8**	**630.7**	**729.3**

At a total WMR loading of approximately 2,213 MW, and with the KTS A3 Transformer OOS, the SMTS H1 Transformer is at its limit with a load of 699 MW, 49.1 MVAr (700.8 MVA). The maximum transformer rating is 700 MVA. Loading at in-service KTS A Transformers is within rating. Bus voltages in the WMR do not fall below 0.9pu under these conditions. Refer to results text file for more information.

3.4.2 Scenario 4b – Winter

The secure operating contingency in this study is the same as that for Study 4a. The SMTS H1 Transformer has the same summer and winter ratings. Since the SMTS H1 load is the key limiting factor, the ring's winter line and transformer ratings do not allow for larger loadings when the NPSD-FBTS Line and KTS A3 Transformer are OOS. Refer to results text file for more information.

AEMO's Winter POE50 forecasts have been used to calculate load at risk. The ATS_BLTS forecast values used include 90 MW for the arc furnace load. The load at risk for this scenario is shown below.

Table J – Maximum Load and Load at Risk at Secure Operating Contingency

LOCATIONID	Location Type	VOLTAGE	UNIT	Study 4b Max Load (MW)	2023 Load At Risk (MW)	2024 Load At Risk (MW)	2025 Load At Risk (MW)	2026 Load At Risk (MW)	2027 Load At Risk (MW)	2028 Load At Risk (MW)	2029 Load At Risk (MW)	2030 Load At Risk (MW)	2031 Load At Risk (MW)	2032 Load At Risk (MW)	2033 Load At Risk (MW)
ATS_BLTS	Hybrid	66	MW	**316.6**	34.4	68.2	96.0	132.4	146.5	171.0	174.5	178.6	182.0	185.9	202.4
ATS_WEST	Hybrid	66	MW	**199.8**	0.0	7.1	20.9	33.0	45.9	60.7	76.4	92.9	106.5	120.0	136.0
BLTS	Entire	22	MW	**53.0**	6.8	11.6	15.8	21.6	22.4	23.1	24.3	25.7	26.4	27.4	27.4
DPTS	Hybrid	66	MW	**342.0**	0.0	0.0	0.0	0.0	10.6	28.4	47.5	67.4	83.3	100.0	117.7
FBTS	Entire	66	MW	**288.5**	0.0	0.0	0.0	0.0	0.0	0.0	7.2	20.3	30.6	41.4	51.4
KTS	Entire	66	MW	**658.7**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.8	110.2	146.8	176.0
WMTS	Entire	66	MW	**354.4**	0.0	0.0	0.0	0.0	0.0	0.0	4.7	23.8	42.1	58.6	82.1
			Yearly Load @ Risk (MW)		**41.2**	**86.9**	**132.7**	**187.0**	**225.4**	**283.2**	**334.6**	**459.5**	**581.1**	**680.1**	**792.9**