

Presque Isle 2007 RATS Preliminary Stability Study Results, System Intact

Table 1 Presque Isle to Perch Lake											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load (MW)	20	20	20	20	150	150	150	300						
Presque Isle (MW)	352	440	525	556	397	484	556	556						
Marquette Net Export (MW)	30	30	30	30	30	30	30	30						
Flow North (MW)	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-30%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
30-50%	3PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
50-100%	3PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	2PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	1PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 2 Presque Isle to Empire											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 3 Presque Isle to National											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	2 -> 4	2	3	4	3
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 4 Presque Isle to Cedar											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-35%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change
35-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 5 Presque Isle to Freeman											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)															
Mine load	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Presque Isle	20	20	20	20	150	150	150	300							
Marquette Net Export	352	440	525	556	397	484	556	556							
Flow North	30	30	30	30	30	30	30	30							
Flow North + Mine (MW)	294	379	460	490	211	295	364	215							
MW tripped for Level 1 (Curve)	314	399	480	510	361	445	514	515							
MW tripped for Level 2 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 3 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-35%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change
35-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 6 Presque Isle to Empire											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)															
Mine load	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Presque Isle	20	20	20	20	150	150	150	300							
Marquette Net Export	352	440	525	556	397	484	556	556							
Flow North	30	30	30	30	30	30	30	30							
Flow North + Mine (MW)	294	379	460	490	211	295	364	215							
MW tripped for Level 1 (Curve)	314	399	480	510	361	445	514	515							
MW tripped for Level 2 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 3 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 7 Empire to Forsyth											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load		20	20	20	20	150	150	150	300					
Presque Isle		352	440	525	556	397	484	556	556					
Marquette Net Export		30	30	30	30	30	30	30	30					
Flow North		294	379	460	490	211	295	364	215					
Flow North + Mine (MW)		314	399	480	510	361	445	514	515					
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287					
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268					
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162					
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
0-70%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
70-100%	3PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	25.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 8 Dead River 345kV to Plains 34											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load		20	20	20	20	150	150	150	300					
Presque Isle		352	440	525	556	397	484	556	556					
Marquette Net Export		30	30	30	30	30	30	30	30					
Flow North		294	379	460	490	211	295	364	215					
Flow North + Mine (MW)		314	399	480	510	361	445	514	515					
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287					
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268					
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162					
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
0-40%	3PG	100.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2	2	No Change	No Change
	2PG	50.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	2	No Change	No Change
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	No Change	No Change
	OPG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	No Change	No Change
40-100%	3PG	50.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	2	No Change	No Change
	2PG	0.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	2	No Change	No Change
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	No Change	No Change
	OPG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	No Change	No Change

Table 9 Cedar to National											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 10 Freeman to Cedar											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 11 Cedar to Tilden											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 12 Tilden to National											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 13 Empire to National											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 14 Presque Isle to Dead River 13											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split	
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW					
Mine load	20	20	20	20	150	150	150	300							
Presque Isle	352	440	525	556	397	484	556	556							
Marquette Net Export	30	30	30	30	30	30	30	30							
Flow North	294	379	460	490	211	295	364	215							
Flow North + Mine (MW)	314	399	480	510	361	445	514	515							
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287							
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268							
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162							
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	100.0%	1	1	1 -> 2	1 -> 2	1	1	1	1	1	1	1	No Change	No Change
	2PG	100.0%	1	1	1 -> 2	1 -> 2	1 -> 4	1	1 -> 2	1	1	1	1	No Change	No Change
	1PG	50.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	2	No Change	No Change
	OPG	0.0%	2 -> 4	2 -> 4	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	3	3	3

Table 15 Plains 138kV to Nordic											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	2PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	1PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 16 Plains 345kV to Morgan 345kV											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	No Change	No Change
	2PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change
	OPG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	3	4	No Change

Table 17 Plains 138kV to Amberg											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	2PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	1PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 18 White Clay to Morgan 138kV											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	2PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4

Table 19 Plains 138kV to Arnold											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	2PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	1PG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change
	OPG	0.0%	4	4	4	4	4	4	4	4	4	4	No Change	No Change

Table 20 Plains 345kV to Plains 138kV											Original Setting	Recommended Level based on Stability	Recommended New Level Based on System Intact	Recommended New Level Based on System Split
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW				
Mine load	20	20	20	20	150	150	150	300						
Presque Isle	352	440	525	556	397	484	556	556						
Marquette Net Export	30	30	30	30	30	30	30	30						
Flow North	294	379	460	490	211	295	364	215						
Flow North + Mine (MW)	314	399	480	510	361	445	514	515						
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287						
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268						
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162						
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level				
0-100%	3PG	50.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	4	4	4
	2PG	0.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2	4	4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4
	OPG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3	4	4	4

Presque Isle 2007 RATS Preliminary Stability Study Results, System Split

Table 1A Presque Isle to Perch Lake (System Split)											Recommended
											New Level
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	300
Mine load (MW)	20	20	20	20	150	150	150	150	150	300	Based on
Presque Isle (MW)	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export (MW)	30	30	30	30	30	30	30	30	30	30	
Flow North (MW)	294	379	460	490	211	295	364	364	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	514	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	286	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	266	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-30%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	
30-50%	3PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	
50-100%	3PG	0.0%	4	4	4	4	4	4	4	4	
	2PG	0.0%	4	4	4	4	4	4	4	4	
	1PG	0.0%	4	4	4	4	4	4	4	4	
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 2A Presque Isle to Empire (System Split)											Recommended
											New Level
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	300
Mine load	20	20	20	20	150	150	150	150	150	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	364	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	514	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	286	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	266	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 3A Presque Isle to National (System Split)											Recommended New Level Based on System Split	
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW		
2007 light load (50% peak)												
Mine load	20	20	20	20	150	150	150	300				
Presque Isle	352	440	525	556	397	484	556	556				
Marquette Net Export	30	30	30	30	30	30	30	30				
Flow North	294	379	460	490	211	295	364	215				
Flow North + Mine (MW)	314	399	480	510	361	445	514	515				
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287				
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268				
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162				
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	2 -> 4	3
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4	4
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4	4

Table 4A Presque Isle to Cedar (System Split)											Recommended New Level Based on System Split	
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW		
2007 light load (50% peak)												
Mine load	20	20	20	20	150	150	150	300				
Presque Isle	352	440	525	556	397	484	556	556				
Marquette Net Export	30	30	30	30	30	30	30	30				
Flow North	294	379	460	490	211	295	364	215				
Flow North + Mine (MW)	314	399	480	510	361	445	514	515				
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287				
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268				
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162				
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-35%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4	4
35-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4	4

Table 5A Presque Isle to Freeman (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-35%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	
35-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 6A Presque Isle to Empire (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-25%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	
25-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 7A Empire to Forsyth (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-70%	3PG	100.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4
70-100%	3PG	75.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	25.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	4

Table 8A Dead River 345kV to Plains 34 (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-40%	3PG	100.0%	2 -> 4	2	2 -> 3	2	2 -> 4	2	2 -> 3	2 -> 3	
	2PG	50.0%	2 -> 4	2	2 -> 3	2	2 -> 4	2 -> 4	2 -> 4	2 -> 4	
	1PG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	0PG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
40-100%	3PG	50.0%	2 -> 4	2	2 -> 3	2	2 -> 4	2 -> 4	2 -> 3	2 -> 4	
	2PG	0.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	
	1PG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	0PG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	

Table 9A Cedar to National (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	300	Based on		
Presque Isle	352	440	525	556	397	484	556	556	System Split		
Marquette Net Export	30	30	30	30	30	30	30	30			
Flow North	294	379	460	490	211	295	364	215			
Flow North + Mine (MW)	314	399	480	510	361	445	514	515			
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287			
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268			
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162			
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 10A Freeman to Cedar (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	300	Based on		
Presque Isle	352	440	525	556	397	484	556	556	System Split		
Marquette Net Export	30	30	30	30	30	30	30	30			
Flow North	294	379	460	490	211	295	364	215			
Flow North + Mine (MW)	314	399	480	510	361	445	514	515			
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287			
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268			
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162			
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 11A Cedar to Tilden (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	0PG	0.0%	4	4	4	4	4	4	4	4	4

Table 12A Tilden to National (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4
	0PG	0.0%	4	4	4	4	4	4	4	4	4

Table 13A Empire to National (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	100.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	50.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	OPG	0.0%	4	4	4	4	4	4	4	4	

Table 14A Presque Isle to Dead River 13 (System Split)											Recommended
2007 light load (50% peak)		MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load		20	20	20	20	150	150	150	300	300	Based on
Presque Isle		352	440	525	556	397	484	556	556	556	System Split
Marquette Net Export		30	30	30	30	30	30	30	30	30	
Flow North		294	379	460	490	211	295	364	215	215	
Flow North + Mine (MW)		314	399	480	510	361	445	514	515	515	
MW tripped for Level 1 (Curve)		92	174	253	282	137	219	286	287	287	
MW tripped for Level 2 (Curve)		0	104	218	261	50	169	266	268	268	
MW tripped for Level 3 (Curve)		0	4	114	155	0	66	161	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	100.0%	1	1	1 -> 2	1 -> 2	1	1	1	1	
	2PG	100.0%	1	1	1 -> 2	1 -> 2	1	1	1 -> 2	1	
	1PG	75.0%	2 -> 4	2	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	
	OPG	0.0%	2 -> 4	2 -> 4	2 -> 3	2 -> 3	2 -> 4	2 -> 4	2 -> 4	2 -> 4	3

Table 15A Plains 138kV to Nordic (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	
	2PG	0.0%	4	4	4	4	4	4	4	4	
	1PG	0.0%	4	4	4	4	4	4	4	4	
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 16A Plains 345kV to Morgan 345kV (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	50.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	2PG	0.0%	3 -> 4	3 -> 4	3	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	
	0PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3	3 -> 4	3 -> 4	3 -> 4	3 -> 4	

Table 17A Plains 138kV to Amberg (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	
	2PG	0.0%	4	4	4	4	4	4	4	4	
	1PG	0.0%	4	4	4	4	4	4	4	4	
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 18A White Clay to Morgan 138kV (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	2PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4

Table 19A Plains 138kV to Arnold (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	25.0%	4	4	4	4	4	4	4	4	
	2PG	0.0%	4	4	4	4	4	4	4	4	
	1PG	0.0%	4	4	4	4	4	4	4	4	
	0PG	0.0%	4	4	4	4	4	4	4	4	

Table 20A Plains 345kV to Plains 138kV (System Split)											Recommended
2007 light load (50% peak)	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	New Level
Mine load	20	20	20	20	150	150	150	150	300	300	Based on
Presque Isle	352	440	525	556	397	484	556	556	556	556	System Split
Marquette Net Export	30	30	30	30	30	30	30	30	30	30	
Flow North	294	379	460	490	211	295	364	215	215	215	
Flow North + Mine (MW)	314	399	480	510	361	445	514	515	515	515	
MW tripped for Level 1 (Curve)	92	174	253	282	137	219	286	287	287	287	
MW tripped for Level 2 (Curve)	0	104	218	261	50	169	266	268	268	268	
MW tripped for Level 3 (Curve)	0	4	114	155	0	66	161	162	162	162	
Fault Location	Fault Type	Mine Load Tripped	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	Trip level	
0-100%	3PG	50.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	4
	2PG	0.0%	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	2 -> 4	4
	1PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4
	0PG	0.0%	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	3 -> 4	4

Presque Isle 2007 RATS Preliminary Thermal Study Results

Table		8B Dead River - Plains 345 kV									
Monitored line (ratings in MVA)		SN	SE	WN	WE						
Presque Isle - Perch Lake		161	161	191	199						
Season		100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	
Mine load (MW)		20	20	20	150	150	150	300			
Presq. Output (MW)		556	481	407	556	443	437	556			
Flow North (MW)		448	376	305	321	293	207	172			
Flow North + Mine (MW)		468	396	325	471	443	357	472			
MW tripped for Level 1 (curve)		240	171	102	243	216	133	244			
MW tripped for Level 2 (curve)		201	99	0	130	96	0	111			
MW tripped for Level 3 (curve)		97	0	0	34	1	0	17			
Perch Lake Over load %	No mine load trip	134	108	94	96	68	67	62			
Required lower PIPP (MW)	No mine load trip	450	450	450	556	556	556	556			
Required MW reduction	No mine load trip	106	31	0	0	0	0	0			
Perch Lake Over load %	50% mine load trip	140	110	97	115	85	84	97			
Required lower PIPP (MW)	50% mine load trip	440	440	440	490	490	490	556			
Required MW reduction	50% mine load trip	116	41	0	66	0	0	0			
Perch Lake Over load %	100% mine load trip	143	113	100	143	130	103	143			
Required lower PIPP (MW)	100% mine load trip	430	430	430	430	430	430	430			
Required MW reduction	100% mine load trip	126	51	0	126	13	7	126			
Worst Case % mine loading Beyond Existing RATS		102	108	<100	<100	<100	102	105			
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	
Dead River - Plains	0 to 40%	3PG	100	2	2	2	2	2	2 -> 1 (7 MW)	2 -> 1 (15 MW)	
		2PG	50	2	2	2	2	2	2	2	
		1PG	0	3 -> 2 (9 MW)	3 -> 2 (31 MW)	3	3	3	3	3	
		open line	0	3 -> 2 (9 MW)	3 -> 2 (31 MW)	3	3	3	3	3	
	40 to 100%	3PG	50	2	2	2	2	2	2	2	
		2PG	0	2	2	2	2	2	2	2	
		1PG	0	3 -> 2 (9 MW)	3 -> 2 (31 MW)	3	3	3	3	3	
		open line	0	3 -> 2 (9 MW)	3 -> 2 (31 MW)	3	3	3	3	3	
Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	
		2PG	100	1	1	1	1	1	1	1	
		1PG	50	2	2	2	2	2	2	2	
		open line	0	2	2	2	2	2	2	2	

Table		8C Dead River - Plains 345 kV										
Monitored line (ratings in MVA)	SN	SE	WN	WE								
Presque Isle - Perch Lake	161	161	191	199								
Season					100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	
Mine load (MW)					20	20	20	150	150	150	300	
Presq. Output (MW)					556	487	413	556	531	442	556	
Flow North (MW)					442	377	306	316	292	208	168	
Flow North + Mine (MW)					462	397	326	466	442	358	468	
MW tripped for Level 1 (curve)					235	172	103	239	215	134	240	
MW tripped for Level 2 (curve)					192	101	0	124	95	0	107	
MW tripped for Level 3 (curve)					89	0	0	28	0	0	13	
Perch Lake Over load %	No mine load trip					128	101	86	87	81	60	54
Required lower PIPP (MW)	No mine load trip					480	480	480	556	556	556	556
Required MW reduction	No mine load trip					76	7	0	0	0	0	0
Perch Lake Over load %	50% mine load trip					133	103	88	106	99	77	88
Required lower PIPP (MW)	50% mine load trip					475	475	475	535	535	535	556
Required MW reduction	50% mine load trip					81	12	0	21	0	0	0
Perch Lake Over load %	100% mine load trip					125	107	91	125	123	94	125
Required lower PIPP (MW)	100% mine load trip					465	465	465	465	465	465	465
Required MW reduction	100% mine load trip					91	22	0	91	66	0	91
Worst Case % mine loading Beyond Existing RATS					<100	102	<100	<100	<100	<100	<100	
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	
Dead River - Plains	0 to 40%	3PG	100	2	2	2	2	2	2	2	2	
		2PG	50	2	2	2	2	2	2	2	2	
		1PG	0	3	3 -> 2 (7 MW)	3	3	3	3	3	3	
		open line	0	3	3 -> 2 (7 MW)	3	3	3	3	3	3	
	40 to 100%	3PG	50	2	2	2	2	2	2	2	2	
		2PG	0	2	2	2	2	2	2	2	2	
		1PG	0	3	3 -> 2 (7 MW)	3	3	3	3	3	3	
		open line	0	3	3 -> 2 (7 MW)	3	3	3	3	3	3	
Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	1	
		2PG	100	1	1	1	1	1	1	1	1	
		1PG	50	2	2	2	2	2	2	2	2	
		open line	0	2	2	2	2	2	2	2	2	

Table		8D Dead River - Plains 345 kV										
Monitored line (ratings in MVA)	SN	SE	WN	WE								
Empire - Forsyth	195	202	201	229								
Season					050 W to E	050 W to E	050 W to E	050 W to E	050 W to E	050 W to E	050 W to E	
Mine load (MW)					20	20	20	150	150	150	300	
Presq. Output (MW)					556	440	352	556	484	397	556	
Flow North (MW)					460	379	294	364	295	211	215	
Flow North + Mine (MW)					480	399	314	514	445	361	515	
MW tripped for Level 1 (curve)					252	174	91	285	218	137	286	
MW tripped for Level 2 (curve)					218	103	0	181	98	0	153	
MW tripped for Level 3 (curve)					114	3	0	84	3	0	59	
Empire-Forsyth Over load %	No mine load trip					161	121	96	114	83	71	69
Required lower PIPP (MW)	No mine load trip					365	365	365	495	495	495	556
Required MW reduction	No mine load trip					191	75	0	61	0	0	0
Empire-Forsyth Over load %	50% mine load trip					165	124	99	139	118	93	115
Required lower PIPP (MW)	50% mine load trip					355	355	355	405	405	405	495
Required MW reduction	50% mine load trip					201	85	0	151	79	0	61
Empire-Forsyth Over load %	100% mine load trip					170	128	101	170	142	115	170
Required lower PIPP (MW)	100% mine load trip					345	345	345	345	345	345	345
Required MW reduction	100% mine load trip					211	95	7	211	139	52	211
Worst Case % mine loading Beyond Existing RATS					121	121	101	108	112	116	116	
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	
Dead River - Plains	0 to 40%	3PG	100	2	2	2 -> 1 (7 MW)	2 -> 1 (30 MW)	2 -> 1 (41 MW)	2 -> 1 (52 MW)	2 -> 1 (58 MW)		
		2PG	50	2	2	2	2	2	2	2		
		1PG	0	3 -> 2 (77 MW)	3 -> 2 (72 MW)	3	3	3	3	3		
		open line	0	3 -> 2 (77 MW)	3 -> 2 (72 MW)	3	3	3	3	3		
	40 to 100%	3PG	50	2	2	2	2	2	2	2		
		2PG	0	2	2	2	2	2	2	2		
		1PG	0	3 -> 2 (77 MW)	3 -> 2 (72 MW)	3	3	3	3	3		
		open line	0	3 -> 2 (77 MW)	3 -> 2 (72 MW)	3	3	3	3	3		
	Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	
			2PG	100	1	1	1	1	1	1	1	
			1PG	50	2	2	2	2	2	2	2	
			open line	0	2	2	2	2	2	2	2	

Table		8E Dead River - Plains 345 kV									
Monitored line (ratings in MVA)	SN	SE	WN	WE							
Empire - Forsyth	195	202	201	229							
Season					070 W to E	070 W to E	070 W to E	070 W to E	070 W to E	070 W to E	070 W to E
Mine load (MW)					20	20	20	150	150	150	300
Presq. Output (MW)					556	471	397	556	515	426	556
Flow North (MW)					458	377	306	331	293	207	183
Flow North + Mine (MW)					478	397	326	481	443	357	483
MW tripped for Level 1 (curve)					250	172	103	253	216	133	255
MW tripped for Level 2 (curve)					215	101	0	142	96	0	122
MW tripped for Level 3 (curve)					111	0	0	45	1	0	28
Empire-Forsyth Over load %	No mine load trip				157	129	107	113	103	79	67
Required lower PIPP (MW)	No mine load trip				370	370	370	495	495	495	556
Required MW reduction	No mine load trip				186	101	27	61	20	0	0
Empire-Forsyth Over load %	50% mine load trip				160	131	110	137	127	102	114
Required lower PIPP (MW)	50% mine load trip				360	360	360	405	405	405	495
Required MW reduction	50% mine load trip				196	111	37	151	110	21	61
Empire-Forsyth Over load %	100% mine load trip				165	135	113	165	152	124	165
Required lower PIPP (MW)	100% mine load trip				350	350	350	350	350	350	350
Required MW reduction	100% mine load trip				206	121	47	206	165	76	206
Worst Case % mine loading Beyond Existing RATS					121	129	114	124	124	124	125
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV
Dead River - Plains	0 to 40%	3PG	100	2	2 -> 1 (20 MW)	2 -> 1 (47 MW)	2 -> 1 (64 MW)	2 -> 1 (69 MW)	2 -> 1 (76 MW)	2 -> 1 (84 MW)	
		2PG	50	2	2 -> 1 (10 MW)	2 -> 1 (37 MW)	2 -> 1 (9 MW)	2 -> 1 (14 MW)	2 -> 1 (21 MW)	2	
		1PG	0	3 -> 2 (75 MW)	3 -> 1 (101 MW)	3 -> 1 (27 MW)	3 -> 2 (16 MW)	3 -> 2 (19 MW)	3	3	
		open line	0	3 -> 2 (75 MW)	3 -> 1 (101 MW)	3 -> 1 (27 MW)	3 -> 2 (16 MW)	3 -> 2 (19 MW)	3	3	
	40 to 100%	3PG	50	2	2 -> 1 (10 MW)	2 -> 1 (37 MW)	2 -> 1 (9 MW)	2 -> 1 (14 MW)	2 -> 1 (21 MW)	2	
		2PG	0	2	2 -> 1 (0 MW)	2 -> 1 (27 MW)	2	2	2	2	
		1PG	0	3 -> 2 (75 MW)	3 -> 1 (101 MW)	3 -> 1 (27 MW)	3 -> 2 (16 MW)	3 -> 2 (19 MW)	3	3	
		open line	0	3 -> 2 (75 MW)	3 -> 1 (101 MW)	3 -> 1 (27 MW)	3 -> 2 (16 MW)	3 -> 2 (19 MW)	3	3	
Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	
		2PG	100	1	1	1	1	1	1	1	
		1PG	50	2	2 -> 1 (10 MW)	2 -> 1 (37 MW)	2 -> 1 (9 MW)	2 -> 1 (14 MW)	2 -> 1 (21 MW)	2	
		open line	0	2	2 -> 1 (0 MW)	2 -> 1 (27 MW)	2	2	2	2	

Table		8F Dead River - Plains 345 kV								
Monitored line (ratings in MVA)	SN	SE	WN	WE						
Empire - Forsyth	195	202	201	229						
Season			100 E to W	100 E to W	100 E to W	100 E to W	100 E to W	100 E to W	100 E to W	100 E to W
Mine load (MW)			20	20	20	150	150	150	300	
Presq. Output (MW)			556	481	407	556	525	446	556	
Flow North (MW)			448	377	306	322	293	207	173	
Flow North + Mine (MW)			468	397	326	472	443	357	473	
MW tripped for Level 1 (curve)			240	172	103	244	216	133	245	
MW tripped for Level 2 (curve)			201	101	0	131	96	0	112	
MW tripped for Level 3 (curve)			97	0	0	35	1	0	18	
Empire-Forsyth Over load %	No mine load trip		151	124	109	104	96	74	58	
Required lower PIPP (MW)	No mine load trip		400	400	400	540	540	540	556	
Required MW reduction	No mine load trip		156	81	7	16	0	0	0	
Empire-Forsyth Over load %	50% mine load trip		155	128	112	130	121	97	105	
Required lower PIPP (MW)	50% mine load trip		390	390	390	460	460	460	530	
Required MW reduction	50% mine load trip		166	91	17	96	65	0	26	
Empire-Forsyth Over load %	100% mine load trip		160	132	116	160	148	121	160	
Required lower PIPP (MW)	100% mine load trip		380	380	380	380	380	380	380	
Required MW reduction	100% mine load trip		176	101	27	176	145	66	176	
Worst Case % mine loading Beyond Existing RATS			118	124	114	116	116	120	118	
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV
Dead River - Plains	0 to 40%	3PG	100	2	2 -> 1 (0 MW)	2 -> 1 (27 MW)	2 -> 1 (45 MW)	2 -> 1 (49 MW)	2 -> 1 (66 MW)	2 -> 1 (64 MW)
		2PG	50	2	2	2 -> 1 (17 MW)	2	2	2	2
		1PG	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3
		open line	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3
	40 to 100%	3PG	50	2	2	2 -> 1 (17 MW)	2	2	2	2
		2PG	0	2	2	2 -> 1 (7 MW)	2	2	2	2
		1PG	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3
		open line	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3
	Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1
2PG			100	1	1	1	1	1	1	1
1PG			50	2	2	2 -> 1 (17 MW)	2	2	2	2
open line			0	2	2	2 -> 1 (7 MW)	2	2	2	2

Table		8G Dead River - Plains 345 kV									
Monitored line (ratings in MVA)	SN	SE	WN	WE							
Empire - Forsyth	195	202	201	229							
Season			100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	100 Split		
Mine load (MW)			20	20	20	150	150	150	300		
Presq. Output (MW)			556	481	407	556	443	437	556		
Flow North (MW)			448	377	306	322	293	207	173		
Flow North + Mine (MW)			468	397	326	472	443	357	473		
MW tripped for Level 1 (curve)			240	172	103	244	216	133	245		
MW tripped for Level 2 (curve)			201	101	0	131	96	0	112		
MW tripped for Level 3 (curve)			97	0	0	35	1	0	18		
Empire-Forsyth Over load %	No mine load trip		155	125	110	105	81	80	60		
Required lower PIPP (MW)	No mine load trip		400	400	400	530	556	556	556		
Required MW reduction	No mine load trip		156	81	7	26	0	0	0		
Empire-Forsyth Over load %	50% mine load trip		159	128	113	130	104	102	106		
Required lower PIPP (MW)	50% mine load trip		390	390	390	450	450	446	530		
Required MW reduction	50% mine load trip		166	91	17	106	0	0	26		
Empire-Forsyth Over load %	100% mine load trip		164	131	117	164	127	126	164		
Required lower PIPP (MW)	100% mine load trip		370	370	370	370	370	370	370		
Required MW reduction	100% mine load trip		186	111	37	186	73	67	186		
Worst Case % mine loading Beyond Existing RATS			118	125	116	117	<100	118	120		
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	
Dead River - Plains	0 to 40%	3PG	100	2	2 -> 1 (10 MW)	2 -> 1 (37 MW)	2 -> 1 (55 MW)	2	2 -> 1 (67 MW)	2 -> 1 (74 MW)	
		2PG	50	2	2	2 -> 1 (17 MW)	2	2	2	2	
		1PG	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3	
	40 to 100%	open line	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3	
		3PG	50	2	2	2 -> 1 (17 MW)	2	2	2	2	
		2PG	0	2	2	2 -> 1 (7 MW)	2	2	2	2	
Presque Isle - Dead River	0 to 100%	1PG	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3	
		open line	0	3 -> 2 (59 MW)	3 -> 2 (81 MW)	3 -> 1 (7 MW)	3	3	3	3	
		3PG	100	1	1	1	1	1	1	1	
		2PG	100	1	1	1	1	1	1	1	
				1PG	50	2	2	2 -> 1 (17 MW)	2	2	2
				open line	0	2	2	2 -> 1 (7 MW)	2	2	2

Table		8H Dead River - Plains 345 kV										
Monitored line (ratings in MVA)	SN	SE	WN	WE								
Empire - Forsyth	195	202	201	229								
Season			100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E		
Mine load (MW)			20	20	20	150	150	150	300			
Presq. Output (MW)			556	487	413	556	531	442	556			
Flow North (MW)			442	377	306	316	292	208	168			
Flow North + Mine (MW)			462	397	326	466	442	358	468			
MW tripped for Level 1 (curve)			235	172	103	239	215	134	240			
MW tripped for Level 2 (curve)			192	101	0	124	95	0	107			
MW tripped for Level 3 (curve)			89	0	0	28	0	0	13			
Empire-Forsyth Over load %	No mine load trip		167	134	113	112	106	82	68			
Required lower PIPP (MW)	No mine load trip		365	360	360	490	490	490	556			
Required MW reduction	No mine load trip		191	127	53	66	41	0	0			
Empire-Forsyth Over load %	50% mine load trip		174	137	115	138	130	105	113			
Required lower PIPP (MW)	50% mine load trip		350	350	350	400	400	400	490			
Required MW reduction	50% mine load trip		206	137	63	156	131	42	66			
Empire-Forsyth Over load %	100% mine load trip		166	141	119	166	157	127	166			
Required lower PIPP (MW)	100% mine load trip		325	325	325	325	325	325	325			
Required MW reduction	100% mine load trip		231	162	88	231	206	117	231			
Worst Case % mine loading Beyond Existing RATS			130	139	127	127	128	130	132			
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV		
Dead River - Plains	0 to 40%	3PG	100	2 -> 1 (39 MW)	2 -> 1 (61 MW)	2 -> 1 (88 MW)	2 -> 1 (107 MW)	2 -> 1 (111 MW)	2 -> 1 (117 MW)	2 -> 1 (124 MW)		
		2PG	50	2 -> 1 (14 MW)	2 -> 1 (36 MW)	2 -> 1 (63 MW)	2 -> 1 (32 MW)	2 -> 1 (36 MW)	2 -> 1 (42 MW)	2		
		1PG	0	3 -> 2 (102 MW)	3 -> 1 (127 MW)	3 -> 1 (53 MW)	3 -> 2 (38 MW)	3 -> 2 (41 MW)	3	3		
	40 to 100%	open line	0	3 -> 2 (102 MW)	3 -> 1 (127 MW)	3 -> 1 (53 MW)	3 -> 2 (38 MW)	3 -> 2 (41 MW)	3	3		
		3PG	50	2 -> 1 (14 MW)	2 -> 1 (36 MW)	2 -> 1 (63 MW)	2 -> 1 (32 MW)	2 -> 1 (36 MW)	2 -> 1 (42 MW)	2		
		2PG	0	2	2 -> 1 (26 MW)	2 -> 1 (53 MW)	2	2	2	2		
Presque Isle - Dead River	0 to 100%	1PG	0	3 -> 2 (102 MW)	3 -> 1 (127 MW)	3 -> 1 (53 MW)	3 -> 2 (38 MW)	3 -> 2 (41 MW)	3	3		
		open line	0	3 -> 2 (102 MW)	3 -> 1 (127 MW)	3 -> 1 (53 MW)	3 -> 2 (38 MW)	3 -> 2 (41 MW)	3	3		
		3PG	100	1	1	1	1	1	1	1		
		2PG	100	1	1	1	1	1	1	1		
				1PG	50	2 -> 1 (14 MW)	2 -> 1 (36 MW)	2 -> 1 (63 MW)	2 -> 1 (32 MW)	2 -> 1 (36 MW)	2 -> 1 (42 MW)	2
				open line	0	2	2 -> 1 (26 MW)	2 -> 1 (53 MW)	2	2	2	

Table		8I Dead River - Plains 345 kV										
Monitored line (ratings in MVA)	SN	SE	WN	WE								
Perch Lake - Nordic	160	191	191	191								
Season					100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	100 Peak W to E	
Mine load (MW)					20	20	20	150	150	150	300	
Presq. Output (MW)					556	487	413	556	531	442	556	
Flow North (MW)					442	377	306	316	292	208	168	
Flow North + Mine (MW)					462	397	326	466	442	358	468	
MW tripped for Level 1 (curve)					235	172	103	239	215	134	240	
MW tripped for Level 2 (curve)					192	101	0	124	95	0	107	
MW tripped for Level 3 (curve)					89	0	0	28	0	0	13	
Perch-Nordic Overload %	No mine load trip					107	82	68	67	61	40	32
Required lower PIPP (MW)	No mine load trip					540	540	540	556	556	556	556
Required MW reduction	No mine load trip					16	0	0	0	0	0	0
Perch-Nordic Overload %	50% mine load trip					112	85	70	86	79	58	68
Required lower PIPP (MW)	50% mine load trip					535	535	535	556	556	556	556
Required MW reduction	50% mine load trip					21	0	0	0	0	0	0
Perch-Nordic Overload %	100% mine load trip					109	88	72	109	103	75	109
Required lower PIPP (MW)	100% mine load trip					520	520	520	520	520	520	520
Required MW reduction	100% mine load trip					36	0	0	36	11	0	36
Worst Case % mine loading Beyond Existing RATS					<100	<100	<100	<100	<100	<100	<100	
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	
Dead River - Plains	0 to 40%	3PG	100	2	2	2	2	2	2	2	2	
		2PG	50	2	2	2	2	2	2	2	2	
		1PG	0	3	3	3	3	3	3	3	3	
		open line	0	3	3	3	3	3	3	3	3	
	40 to 100%	3PG	50	2	2	2	2	2	2	2	2	
		2PG	0	2	2	2	2	2	2	2	2	
		1PG	0	3	3	3	3	3	3	3	3	
		open line	0	3	3	3	3	3	3	3	3	
Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	1	
		2PG	100	1	1	1	1	1	1	1	1	
		1PG	50	2	2	2	2	2	2	2	2	
		open line	0	2	2	2	2	2	2	2	2	

Table		8J Dead River - Plains 345 kV									
Monitored line (ratings in MVA)	SN	SE	WN	WE							
Perch Lake - Nordic	160	191	191	191							
Season					100 Split	100 Split	100 Split	100 Split	100 Split	100 Split	100 Split
Mine load (MW)					20	20	20	150	150	150	300
Presq. Output (MW)					556	481	407	556	443	437	556
Flow North (MW)					448	377	306	322	293	207	173
Flow North + Mine (MW)					468	397	326	472	443	357	473
MW tripped for Level 1 (curve)					240	172	103	244	216	133	245
MW tripped for Level 2 (curve)					201	101	0	131	96	0	112
MW tripped for Level 3 (curve)					97	0	0	35	1	0	18
Perch-Nordic Overload %	No mine load trip				107	80	66	67	41	39	32
Required lower PIPP (MW)	No mine load trip				540	540	540	556	556	556	556
Required MW reduction	No mine load trip				16	0	0	0	0	0	0
Perch-Nordic Overload %	50% mine load trip				112	83	70	86	58	57	68
Required lower PIPP (MW)	50% mine load trip				535	535	535	556	556	556	556
Required MW reduction	50% mine load trip				21	0	0	0	0	0	0
Perch-Nordic Overload %	100% mine load trip				123	86	70	123	75	73	123
Required lower PIPP (MW)	100% mine load trip				520	520	520	520	520	520	520
Required MW reduction	100% mine load trip				36	0	0	36	0	0	36
Worst Case % mine loading Beyond Existing RATS					<100	<100	<100	<100	<100	<100	<100
	Flt location	Flt type	% mine load trip	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV	Required LV
Dead River - Plains	0 to 40%	3PG	100	2	2	2	2	2	2	2	2
		2PG	50	2	2	2	2	2	2	2	2
		1PG	0	3	3	3	3	3	3	3	3
		open line	0	3	3	3	3	3	3	3	3
	40 to 100%	3PG	50	2	2	2	2	2	2	2	2
		2PG	0	2	2	2	2	2	2	2	2
		1PG	0	3	3	3	3	3	3	3	3
		open line	0	3	3	3	3	3	3	3	3
Presque Isle - Dead River	0 to 100%	3PG	100	1	1	1	1	1	1	1	1
		2PG	100	1	1	1	1	1	1	1	1
		1PG	50	2	2	2	2	2	2	2	2
		open line	0	2	2	2	2	2	2	2	2