MISO ICTE Reliability: TLR 5 Event Analysis Report

Event Date: **8/5/2013**

Flowgate ID/Name: **FG 6509 Nelson AT 1 500/230kV flo Hartburg-Cypress 500kV**

Metrics Tables:

TLR Date	8/5/2013 06:00
Return to Zero	8/5/2013 15:00
Duration	9 hours
Hours in TLR 5	4 hours
Highest Level	5A
MW Cut	233
Firm	189
Non-Firm	44

NNL:

EES	119	LEPA	
AECI		ONT	
AMIL		PJM	
CLEC	1	SMEE	
CSWS		SOCO	
EDE		SPA	
LAFA		TVA	
LAGN	12	WSCS	

Flowgate information at the time of the TLR 5 issuance:

Line Rating: 560 LODF: 0.3395 PC MVA: 547 Contingent Element: 574 Monitored Element: 353

Root Cause:

This event was caused by increasing flows north to south heading into the WOTAB load pocket. Contributing to the heavier load across the Nelson transformer AT1 was an increase in generation output that has lower sensitivities outside of the constrained area, unplanned outages and reduced generation in the WOTAB and Western load pockets.

Planned or Unplanned Generation Outage(s): (none, if blank)

Type:

Unplanned Nelson Unit 6 on 8/1/13

Planned or Unplanned Transmission Outage(s): (none, if blank)

Type:

Tags Excluded from the TLR (The following tags were excluded for Reliability)

None

Internal Non-Firm Tags that were curtailed: No Internal Non-Firm tags were curtailed

Non-Firm AFC's suspended: from 07:00 EST to 15:00 EST on 8/5/2013

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AFC Limitations before, during and after the TLR Event:

		Firm AFC available on NELXF_HBCYP (MW)									
	AFC Initialization Summary Report Time Stamp (EST)	8/5 HB 6	7	8	9	10	11	12	13	14	15
Prior to Day Ahead	8/3/2013 17:56	284	266	250	204	318	255	246	84	95	109
Day Ahead	8/4/2013 3:41	266	247	231	185	297	233	222	62	71	85

		Sum of impact of firm reservations and rfcalc baseflow on NELXF_HBCYP (MW)									
	AFC Initialization Summary Report Time Stamp (EST)	8/5 HB 6	7	8	9	10	11	12	13	14	15
Prior to Day Ahead	8/3/2013 17:56	276	294	310	356	242	305	314	476	465	451
Day Ahead	8/4/2013 3:41	294	313	329	375	263	327	338	498	489	475

TFC of NELXF_HBCYP
560

	AFC Initialization Summary Report Time Stamp (EST)	Average Firm AFC available on NELXF_HBCYP (MW)
Prior to Day Ahead	8/3/2013 17:56	211
Day Ahead	8/4/2013 3:41	190
		-21

	AFC Initialization Summary Report Time Stamp (EST)	Average Sum of impact of firm reservations and rfcalc baseflow on NELXF_HBCYP (MW)
Prior to Day Ahead	8/3/2013 17:56	349
Day Ahead	8/4/2013 3:41	370
		21

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		AFC available on NELXF_HBCYP (MW)										
	AFC Initialization Summary Report Timestamp (EST)	8/5 HB 6	7	8	9	10	11	12	13	14	15	
Prior to Day Ahead	8/3/2013 17:56	284	266	250	204	318	255	246	84	95	109	Firm
Day Ahead	8/4/2013 3:41	266	247	231	185	297	233	222	62	71	85	Firm
Operating Horizon	8/5/2013 0:13	387	384	363	329	355	331	314	195	202	194	Firm
Operating Horizon	8/5/2013 1:17	406	403	383	350	378	355	339	220	229	227	Firm
Operating Horizon	8/5/2013 2:12	408	404	385	352	380	357	341	224	232	229	Firm
Operating Horizon	8/5/2013 3:12	413	410	390	358	386	363	347	230	238	233	Firm
Operating Horizon	8/5/2013 3:41	413	410	390	358	386	363	347	230	238	233	Firm
Operating Horizon	8/5/2013 4:12	407	393	373	339	365	341	323	206	206	206	Firm
Operating Horizon	8/5/2013 5:11	420	418	386	353	381	381	381	381	381	381	Firm
Operating Horizon	8/5/2013 6:13	300	416	421	376	406	384	370	253	263	260	Firm
Operating Horizon	8/5/2013 7:13		240	415	419	398	375	359	243	260	246	Firm
Operating Horizon	8/5/2013 8:12			0	0	0	0	0	0	0	0	Firm
Operating Horizon	8/5/2013 9:09				0	0	0	0	0	0	0	Firm
Operating Horizon	8/5/2013 10:10					0	0	0	0	0	0	Firm
Operating Horizon	8/5/2013 11:10						0	0	0	0	0	Firm
Operating Horizon	8/5/2013 12:25							0	0	0	0	Firm
Operating Horizon	8/5/2013 13:16								0	0	0	Firm
Operating Horizon	8/5/2013 14:15									0	0	Firm
Operating Horizon	8/5/2013 15:16										434	Firm
		Indicates TLR Avoidance (Non-sale of Non-Firm)										

Event History:

TLR Event History

6509 - Nelson AT1 500/230 (ftlo) Hartburg 500kv - Cypress

	Status	TLR	Effective Time	Confirmation Time	Run Time	Flow Change Requested	Requested Relief	Remaining Relief	Relief Provided	Total Cuts			RC Ack Cuts			MF	NNL
										Tags	MW	Relief	Tags	MW	Relief		
NH	SUPERSEDED	1	08/05/2013 06:00	08/05/2013 06:02	08/05/2013 05:32	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
NH	SUPERSEDED	5A	08/05/2013 07:00	08/05/2013 06:33	08/05/2013 06:32	-20.0	27.0	0.0	28	20	44	4	20	44	4	0	24
NH	SUPERSEDED	5A	08/05/2013 08:00	08/05/2013 07:31	08/05/2013 07:26	+15.0	31.0	0.0	55	24	68	8	24	68	8	0	48
NH	SUPERSEDED	5A	08/05/2013 08:00	08/05/2013 07:34	08/05/2013 07:33	+35.0	10.0	0.0	34	24	49	5	24	49	5	0	29
NH	SUPERSEDED	5A	08/05/2013 09:00	08/05/2013 08:28	08/05/2013 08:26	+19.0	0.0	0.0	28	22	43	5	22	43	5	0	24
NH	SUPERSEDED	5A	08/05/2013 10:00	08/05/2013 09:29	08/05/2013 09:27	+33.0	0.0	0.0	14	19	29	3	19	29	3	0	11
NH	SUPERSEDED	3A	08/05/2013 11:00	08/05/2013 10:33	08/05/2013 10:30	+100.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
NH	SUPERSEDED	3A	08/05/2013 12:00	08/05/2013 11:29	08/05/2013 11:29	+30.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
NH	SUPERSEDED	3A	08/05/2013 13:00	08/05/2013 12:28	08/05/2013 12:26	+5.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
NH	SUPERSEDED	3A	08/05/2013 14:00	08/05/2013 13:29	08/05/2013 13:29	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
NH	TERMINATED	0	08/05/2013 15:00	08/05/2013 14:25	08/05/2013 14:25	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0

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Event Summary:

Event Summary

FILE SAVED AS: MISO_6509_20130805_0500.htm

Incident:	MISO_6509_20130805_0500	Date: 08/05/2013 (EST)	Reliability Coordinator: MISO
Initial Conditions:	N/A		
Flowgate:	6509 - Nelson AT1 500/230 (ftlo) Hart...	Rating: 0	LODF: 33.95%
TLR Direction:	Normal		
Effective StartTime:	08/05/2013 06:00 (EST)	Effective EndTime: 08/05/2013 15:00 (EST)	TLR Duration: 9 Hours and 0 Minutes

TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule							NNL Relief			Market Relief				Flow		Cont. Flow	TLR Action Comments
				Total Tags Cut / Hold	IDC Cut MW	IDC Cut Relief	RC Cut Acknowledge MW	RC Cut Acknowledge Relief	Hold MW	Hold Relief	CA	IDC MW	RC Ackn MW	Type	Mkt	IDC MW	RC Ackn MW	Current	Post Cont.		
Aug 05 06:02 (EST)	TLR 1	CURRENT		NONE							NONE			NONE				326	506	532	N/A
Aug 05 06:33 (EST)	TLR 5A	NEXT	6-NN	3 / 0	18	1.1	18	1.1	0	0.0	CLEC	1.0	0.0	NONE				353	547	574	N/A
			7-F	17 / 0	26	3.1	26	3.1	0	0.0	EES	21.0	21.0								
			Total	20 / 0	44	4.2	44	4.2	0	0.0	LAGN	2.0	2.0								
											Total	24.0	23.0								
Aug 05 07:31 (EST)	TLR 5A	NEXT	6-NN	2 / 0	7	0.5	7	0.5	0	0.0	CLEC	1.0	0.0	NONE				348	541	569	N/A
			7-F	22 / 0	61	7.1	61	7.1	0	0.0	EES	42.0	21.0								
			Total	24 / 0	68	7.5	68	7.5	0	0.0	LAGN	4.0	2.0								
											Total	47.0	23.0								
Aug 05 07:34 (EST)	TLR 5A	NEXT	6-NN	2 / 0	7	0.5	7	0.5	0	0.0	CLEC	1.0	0.0	NONE				341	531	562	N/A
			7-F	22 / 0	42	4.9	42	4.9	0	0.0	EES	26.0	26.0								
			Total	24 / 0	49	5.4	49	5.4	0	0.0	LAGN	3.0	3.0								
											Total	30.0	29.0								
Aug 05 08:28 (EST)	TLR 5A	NEXT	6-NN	2 / 0	7	0.5	7	0.5	0	0.0	CLEC	1.0	0.0	NONE				337	525	555	N/A
			7-F	20 / 0	36	4.2	36	4.2	0	0.0	EES	21.0	21.0								
			Total	22 / 0	43	4.7	43	4.7	0	0.0	LAGN	2.0	2.0								
											Total	24.0	23.0								
Aug 05 09:29 (EST)	TLR 5A	NEXT	6-NN	1 / 0	5	0.3	5	0.3	0	0.0	EES	9.0	9.0	NONE				353	541	556	N/A
			7-F	18 / 0	24	2.8	24	2.8	0	0.0	LAGN	1.0	1.0								
			Total	19 / 0	29	3.1	29	3.1	0	0.0	Total	10.0	10.0								
Aug 05 10:33 (EST)	TLR 3A	NEXT		NONE							NONE			NONE				208	373	487	N/A
Aug 05 11:29 (EST)	TLR 3A	NEXT		NONE							NONE			NONE				255	446	565	N/A
Aug 05 12:28 (EST)	TLR 3A	NEXT	7-F	0 / 1	0	0.0	0	0.0	4	0.3	NONE			NONE				288	489	595	N/A
			Total	0 / 1	0	0.0	0	0.0	4	0.3											
Aug 05 13:29 (EST)	TLR 3A	NEXT	7-F	0 / 1	0	0.0	0	0.0	1	0.1	NONE			NONE				199	403	603	N/A
			Total	0 / 1	0	0.0	0	0.0	1	0.1											
Aug 05 14:25 (EST)	TLR 0	CURRENT		NONE							NONE			NONE				181	391	620	N/A

TLR Schedule Totals

Priority	Schedule			
	Total Tags Cut / Hold	IDC Cut MW	RC Cut Acknowledge MW	Hold MW
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	10	44	44	0
7	99	189	189	5
Total	109	233	233	5

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
CLEC	4.0	1.0
EES	119.0	119.0
LAGN	12.0	12.0
Total	135.0	132.0