

ICTE TLR 5 Investigation Report
Flowgate 15732
(Willow Glen 500/230 AT2 for the loss of Willow Glen -Waterford 500 kV)
TLR Level 5: April 22, 2011
Report Issued:

1. Description of purpose/cause of hold/curtailment.

This report is submitted in accordance with the NERC Transmission Loading Relief Investigation Procedure for the TLR 5 event that occurred on Flowgate 15732 on April 22, 2011. Flowgate 15732 is an Entergy flowgate. The TLR 5 was in effect from 10:29 AM until 10:26 PM on April 22, 2011. Projected post-contingent flows on the ISES AT2 500/230 kV line for the loss of the ISES - Dell line exceeded the SOL.

2. Facility/flowgate limitations and flows at the time the TLR was initiated.

At the time the TLR 5b was issued, the Limiting Element was rated at 450 MVA. Flow on the Limiting Element was 327 MVA. Flow on the Contingent Element was 688 MVA. The LODF was approximately 24%. Post-contingent flow on the Limiting Element was approximately 498 MVA.

3. TLR levels, timing, and relief requested amounts.

TLRs levels, timing and relief requested amounts are shown on pages 4 and 5.

4. Transmission and generation outages or changes from prediction that may have contributed.

- There were no unplanned outages on the ICTE system associated with this flowgate.
- There were no abnormal load changes.
- There was 0 mw of non-firm service impacting the flowgate day of since the RC was in a TLR 5 event.
- There was a derate on the Willow Glen AT2.
- There was a planned generator outage.

There was a derate on the Willow Glen AT2 that contributed to the TLR 5 event. There was also a planned generator outage that contributed to the TLR 5 event. Increment Units in the Entergy BA (including internal IPPs and QFs) near the constraint have an average Generator Shift Factor (GSF) of +18%. Decrement units near the constraint have an average Generator Shift Factor (GSF) of -2%. The derate of the Willow Glen AT2, load, and generation patterns contributed to the TLR 5 event.

5. Procedures implemented prior to hold/curtailment.

There were not enough non-firm transactions with greater than 5% TDF available for curtailment to alleviate the flowgate. The system was not re-dispatched to prevent curtailment of firm service. The ICT RC verifies with Entergy's Shift Supervisor before a TLR 5 event is called if there are any re-dispatch options available. The Entergy Shift Supervisor to-date has not offered any re-dispatch solutions to prevent a TLR 5 event.

6. The initial investigation shall compare all transaction curtailment lists as generated by the IDC with the list of transactions flowing as determined by the IDC (Whole Transaction Lists) both before and after curtailment. The reasons for any transactions that were excluded from curtailment shall be provided. For those transactions not curtailed, the Reliability Authority will identify those entities and any affiliation with said entities.

There were transactions excluded from curtailment for this TLR. Excluded the following: EES_TEA01TFV8841_LEPA sourced off a increment unit for the flowgate.

7. List of known transactions not in the IDC with Transaction Contribution Factors greater than the curtailment threshold and actions taken to curtail such transactions.

There were no known transactions not in the IDC.

8. Excerpts from the RA Operations Log containing information relevant to the TLR event.

Information was provided to Reliability Coordinators through the IDC and the RCIS. Also the ICTE Reliability Coordinators logged information describing the actions taken at each issuance of the TLR.

9. Flowgate limitations as identified by security analysis processes conducted by the Reliability Authority for the day prior to the TLR event.

In the next day process, we did not see an issue with this flowgate, based off of the peak study.

10. State Estimator snapshots and security analysis, including any contingency analysis or stability analysis, along with any other recorded data indicating need for TLR.

The ICTE Reliability Coordinator was monitoring their state estimator for potential issues during this time. Screen shots were taken during each issuance of the TLR level 5.

11. ATC limitations before, during, and after the TLR event.

ICT Tariff Administration grants transmission service using an AFC process. This process evaluates each transmission request on a case by case basis. There are no ATC values for individual corridors to or from the Entergy system. ICT Tariff Administration was not granting any transmission requests that impacted the congested flowgate by 3 % or greater at the time of the TLR 5.

		Firm AFC available on TEMP 15 (MW)													
AFC Initialization Summary Report		04/22 HB													
Timestamp		10	11	12	13	14	15	16	17	18	19	20	21	22	23
Prior to Day Ahead	4/20/11 18:53	-897	-816	-815	-819	-812	-815	-801	-751	-764	-756	-742	-748	-791	-778
Day Ahead	4/21/11 11:04	-2	59	60	54	60	58	71	75	64	71	85	80	37	53
		Sum of impact of firm reservations and rfcalc baseflow on TEMP 15 (MW)													
AFC Initialization Summary Report		04/22 HB													
Timestamp		10	11	12	13	14	15	16	17	18	19	20	21	22	23
Prior to Day Ahead	4/20/11 18:53	1297	1216	1215	1219	1212	1215	1201	1151	1164	1156	1142	1148	1191	1178
Day Ahead	4/21/11 11:04	402	341	340	346	340	342	329	325	336	329	315	320	363	347
Difference for Prior to Day Ahead		895	875	875	872	871	872	871	827	828	827	827	828	828	831
		TFC of TEMP15													
		400													
AFC Initialization Summary Report		Average Firm AFC available on TEMP 15 (MW)													
Timestamp															
Prior to Day Ahead	4/20/11 18:53	-793													
Day Ahead	4/21/11 11:04	59													
Difference		852													
AFC Initialization Summary Report		Ave. of impact of firm reservations and rfcalc baseflow on TEMP 15 (MW)													
Timestamp															
Prior to Day Ahead	4/20/11 18:53	1193													
Day Ahead	4/21/11 11:04	341													
Difference		-852													

		AFC available on TEMP 15 (MW)														
AFC Initialization Summary Report		04/22 HB 10														
Timestamp (CDT)		11	12	13	14	15	16	17	18	19	20	21	22	23		
Prior to Day Ahead	4/20/11 18:19	-897	-816	-815	-819	-812	-815	-801	-751	-764	-756	-742	-748	-791	-778	Firm
Day Ahead	4/21/11 11:04	-2	59	60	54	60	58	71	75	64	71	85	80	37	53	Firm
Operating Horizon	4/22/11 0:22	28	17	17	41	86	88	89	86	35	39	39	23	48	64	Non-Firm
Operating Horizon	4/22/11 1:52	27	17	17	41	86	87	89	86	36	40	40	23	48	63	Non-Firm
Operating Horizon	4/22/11 2:24	28	18	18	41	86	88	89	87	36	40	40	24	49	64	Non-Firm
Operating Horizon	4/22/11 3:20	29	18	18	42	87	89	90	87	36	41	41	24	49	65	Non-Firm
Operating Horizon	4/22/11 3:41	29	18	18	42	87	89	90	87	36	41	41	24	49	65	Non-Firm
Operating Horizon	4/22/11 4:19	29	19	19	43	88	90	91	88	37	41	41	25	50	65	Non-Firm
Operating Horizon	4/22/11 5:19	30	14	14	36	82	85	87	84	33	37	37	20	50	65	Non-Firm
Operating Horizon	4/22/11 6:44	27	12	12	34	79	82	84	80	30	34	34	18	47	63	Non-Firm
Operating Horizon	4/22/11 7:18	26	11	11	32	78	81	82	79	28	33	33	17	47	62	Non-Firm
Operating Horizon	4/22/11 8:16	17	19	39	41	86	89	96	94	43	48	53	32	62	79	Non-Firm
Operating Horizon	4/22/11 9:16	7	-14	23	26	71	74	81	78	27	32	38	16	47	63	Non-Firm
Operating Horizon	4/22/11 10:44	-14	-69	-51	27	73	77	85	79	31	31	31	17	50	65	Non-Firm
Operating Horizon	4/22/11 11:15		18	-51	-55	71	75	82	79	30	30	30	16	49	64	Non-Firm
Operating Horizon	4/22/11 12:33			99	8	53	81	88	84	34	35	35	21	54	69	Non-Firm
Operating Horizon	4/22/11 13:28				33	220	225	226	222	177	177	183	161	150	137	Non-Firm
Operating Horizon	4/22/11 14:28					19	66	80	79	32	33	38	19	53	67	Non-Firm
Operating Horizon	4/22/11 15:28						19	75	65	32	34	40	21	55	69	Non-Firm
Operating Horizon	4/22/11 16:28							27	83	8	32	38	19	53	67	Non-Firm
Operating Horizon	4/22/11 17:25								55	83	60	93	45	71	86	Non-Firm
Operating Horizon	4/22/11 19:00									0	0	0	0	0	0	Non-Firm
Operating Horizon	4/22/11 19:28									0	0	0	0	0	0	Non-Firm
Operating Horizon	4/22/11 20:24									0	0	0	0	0	0	Non-Firm
Operating Horizon	4/22/11 21:22											0	0	0	0	Non-Firm
Operating Horizon	4/22/11 22:23												0	0	0	Non-Firm
Operating Horizon	4/22/11 23:24														U	Non-Firm

12. Description of actions taken to avoid future hold/curtailments.

This TLR was caused by a combination of generation patterns, load, and system flows along with planned generation outage. The ICTE RC has held conference calls with the entities involved to explain the situation and offer the opportunity for the entities to understand what generation could be brought online to help provide their NNL obligations which in turn helps them maintain their reserve margin. The ICTE RC also coordinated

with the TO to help facilitate required transmission outages so they would not adversely impact the flowgate.

13. Provide IDC generated Congestion Management Reports showing transaction curtailment list and Control Area NNL (network and native load) curtailment responsibility.

Congestion Management Reports for each issuance of the TLR have been reviewed and kept on file. These screen shots are not being provided to reduce the size of this report.

14. Re-dispatch actions taken.

Entergy had 872 MW of NNL.

Event History								
Issuing RC:		ICTE						
Flowgate:		15732 - Willow Glen 500/230 AT2 flo Willow Glen-Waterford 500kV						
Event Begin:		2011-04-22 10:45						
Event End:		2011-04-22 23:35						
Event Duration:		13 Hours						
TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
TLR Level 5B	04/22/2011 10:45	04/22/2011 10:33	04/22/2011 10:32:43	70.0	0.0	70.3	13	247
TLR Level 5A	04/22/2011 12:00	04/22/2011 11:28	04/22/2011 11:27:33	31.0	0.0	86.9	4	22
TLR Level 5A	04/22/2011 13:00	04/22/2011 12:27	04/22/2011 12:26:40	21.0	0.0	106.5	27	419
TLR Level 5A	04/22/2011 14:00	04/22/2011 13:26	04/22/2011 13:26:03	37.0	0.0	112.8	27	469
TLR Level 5A	04/22/2011 15:00	04/22/2011 14:27	04/22/2011 14:25:33	31.0	0.0	108.7	28	428
TLR Level 5A	04/22/2011 16:00	04/22/2011 15:29	04/22/2011 15:26:51	23.0	0.0	104.5	26	396
TLR Level 5A	04/22/2011 17:00	04/22/2011 16:26	04/22/2011 16:25:36	14.0	0.0	91.5	4	23
TLR Level 5A	04/22/2011 18:00	04/22/2011 17:27	04/22/2011 17:25:59	4.0	0.0	93.0	4	24
TLR Level 5A	04/22/2011 19:00	04/22/2011 18:31	04/22/2011 18:27:01	0.0	0.0	82.6	4	23
TLR Level 5A	04/22/2011 20:00	04/22/2011 19:33	04/22/2011 19:27:13	0.0	0.0	70.2	4	19
TLR Level 5A	04/22/2011 21:00	04/22/2011 20:29	04/22/2011 20:28:37	0.0	0.0	60.3	3	16
TLR Level 5A	04/22/2011 22:00	04/22/2011 21:30	04/22/2011 21:26:46	0.0	0.0	35.7	3	10
TLR Level 5A	04/22/2011 23:00	04/22/2011 22:26	04/22/2011 22:25:32	0.0	0.0	0.0	0	0
TLR Level 0	04/22/2011 23:35	04/22/2011 23:26	04/22/2011 23:25:48	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: ICTE_15732_20110422_0945.htm

Incident: ICTE_15732_20110422_0945	Date: 04/22/2011	Reliability Coordinator: ICTE
Initial Conditions: N/A		
Flowgate: 15732 - Willow Glen 500/230 AT2 flo Wl...	Rating: 450	LODF: 23.91%
TLR Direction: Normal		
Effective StartTime: 04/22/2011 10:45	Effective EndTime: 04/22/2011 23:35	TLR Duration: 12 Hours and 50 Minutes

TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule						NNL Relief			Market Relief				Flow			TLR Action Comments		
				Total Tags Cut / Hold	IDC Cut		RC Cut Acknowledge		Hold		CA	IDC MV	RC Actn MV	Type	Mkt	IDC MV	RC Actn MV	Current	Post Cont.		Cont. Flow	
					MV	Relief	MV	Relief	MV	Relief												
Apr 22 10:33	TLR 5B	CURRENT	6-NN	1 / 0	75	3.8	75	3.8	0	0.0	EES	56.0	56.0	NONE				327	491	588	N/A	
			7-F	12 / 0	172	10.8	172	10.8	0	0.0												Total
		NEXT	2-NH	1 / 0	75	3.8	75	3.8	0	0.0	NONE			NONE								
			7-F	10 / 0	318	18.4	318	18.4	0	0.0												Total
Apr 22 11:26	TLR 5A	NEXT	7-F	4 / 0	22	2.4	22	2.4	0	0.0	EES	84.0	85.0	NONE				322	449	532	N/A	
				Total	4 / 0	22	2.4	22	2.4	0	0.0	Total	84.0	85.0								
Apr 22 12:27	TLR 5A	NEXT	7-F	27 / 0	419	31.7	419	31.7	0	0.0	EES	75.0	75.0	NONE				285	410	527	N/A	
				Total	27 / 0	419	31.7	419	31.7	0	0.0	Total	75.0	75.0								
Apr 22 13:26	TLR 5A	NEXT	7-F	27 / 0	469	36.0	469	36.0	0	0.0	EES	77.0	77.0	NONE				297	428	549	N/A	
				Total	27 / 0	469	36.0	469	36.0	0	0.0	Total	77.0	77.0								
Apr 22 14:27	TLR 5A	NEXT	7-F	28 / 0	428	28.1	428	28.1	0	0.0	EES	81.0	81.0	NONE				305	437	548	N/A	
				Total	28 / 0	428	28.1	428	28.1	0	0.0	Total	81.0	81.0								
Apr 22 15:29	TLR 5A	NEXT	7-F	26 / 0	396	27.1	396	27.1	0	0.0	EES	77.0	77.0	NONE				303	434	550	N/A	
				Total	26 / 0	396	27.1	396	27.1	0	0.0	Total	77.0	77.0								
Apr 22 15:26	TLR 5A	NEXT	7-F	4 / 0	23	2.5	23	2.5	0	0.0	EES	89.0	89.0	NONE				301	433	554	N/A	
				Total	4 / 0	23	2.5	23	2.5	0	0.0	Total	89.0	89.0								
Apr 22 17:27	TLR 5A	NEXT	7-F	4 / 0	24	2.6	24	2.6	0	0.0	EES	90.0	90.0	NONE				288	414	531	N/A	
				Total	4 / 0	24	2.6	24	2.6	0	0.0	Total	90.0	90.0								
Apr 22 18:31	TLR 5A	NEXT	7-F	4 / 0	23	2.5	23	2.5	0	0.0	EES	80.0	80.0	NONE				273	388	485	N/A	
				Total	4 / 0	23	2.5	23	2.5	0	0.0	Total	80.0	80.0								
Apr 22 19:33	TLR 5A	NEXT	7-F	4 / 0	19	2.1	19	2.1	0	0.0	EES	68.0	68.0	NONE				253	357	438	N/A	
				Total	4 / 0	19	2.1	19	2.1	0	0.0	Total	68.0	68.0								
Apr 22 20:29	TLR 5A	NEXT	7-F	3 / 0	16	1.8	16	1.8	0	0.0	EES	59.0	59.0	NONE				272	387	483	N/A	
				Total	3 / 0	16	1.8	16	1.8	0	0.0	Total	59.0	59.0								
Apr 22 21:30	TLR 5A	NEXT	7-F	3 / 0	10	1.1	10	1.1	0	0.0	EES	35.0	35.0	NONE				285	375	461	N/A	
				Total	3 / 0	10	1.1	10	1.1	0	0.0	Total	35.0	35.0								
Apr 22 22:25	TLR 5A	NEXT									NONE			NONE				248	354	444	N/A	
Apr 22 23:26	TLR 0	CURRENT									NONE			NONE				242	383	510	N/A	

TLR Schedule Totals

Priority	Schedule			
	Total Tags Cut / Hold	IDC Cut MV	RC Cut Acknowledge MV	Hold MV
0	0	0	0	0
1	0	0	0	0
2	1	75	75	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	1	75	75	0
7	158	2339	2339	0
Total	160	2414	2414	0

TLR NNL Totals

CA	NNL Relief	
	IDC MV	RC Actn MV
EES	871.0	872.0
Total	871.0	872.0

Date	Time	Category	Issue
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			EES (Sean) called to have RC assess FG 15732. OASIS security summary still showing active LAP-3 (opened 09:56 04/21/11). In TRA the FG had been reset. I explained that as long as there is an active LAP posting we are not to assess FG. EES (Sean) looked back thru his notes and did not find that the LAP had been closed. EES (Sean) stated that he then wanted to close the LAP posting at 10:12hrs & to have RC reassess FG. At this time the FG was at 110% and EES (Sean) stated that he was NOT going to take action to relieve the loading. RC reassessed the FG and Issued TLR5B to relieve loading. Sean stated that he then wanted to close the LAP posting at 10:12hrs & to have RC reassess FG. At this time the FG was at 110% and Sean stated that he was NOT going to take action to relieve the loading.
04/22/11	1010	Other	
04/22/11	1012	LAP	Closed LAP per (EES)Sean. OASIS Ref 413808.
04/22/11	1029	TLR - 5b Initial	Issued TLR 5B. PC 110%. EES NNL 55.8. OASIS Ref 414568 Excluded EES to LEPA schedule 8841.
04/22/11	1127	TLR - 5a Reissue	Re-issued TLR5A. PC 100%. EES NNL 84.5. OASIS Ref 414568.
04/22/11	1226	TLR - 5a Reissue	Re-issued TLR5A. PC 92%. EES NNL . 74.9
04/22/11	1226	No Internal NonFirm Tags	
04/22/11	1326	TLR - 5a Reissue	Re-issued TLR5A. PC 95%. EES NNL . 76.7.
04/22/11	1326	No Internal NonFirm Tags	
04/22/11	1425	TLR - 5a Reissue	Re-issued TLR5A. PC 97%. EES NNL 80.7.
04/22/11	1526	No Internal NonFirm Tags	
04/22/11	1526	TLR - 5a Reissue	Re-issued TLR5A. PC 97%. EES NNL 77.4
04/22/11	1625	TLR - 5a Reissue	Re-issued TLR5A. PC 97%. EES NNL 88.9.
04/22/11	1725	TLR - 5a Reissue	Re-issued TLR5A. PC 92%. EES NNL 90.4.
04/22/11	1800	TA Notification	Suspended AFCs till 24:00
04/22/11	1831	No Internal NonFirm Tags	
04/22/11	1831	TLR - 5a Reissue	reissued TLR 5a PC 87%. EES NNL 80.1
04/22/11	1933	TLR - 5a Reissue	reissued TLR 5a PC 80% EES NNL 68.2
04/22/11	1933	No Internal NonFirm Tags	

04/22/11	2029	No Internal NonFirm Tags	
04/22/11	2029	TLR - 5a Reissue	reissued TLR 5a PC 86%. EES NNL 58.5
04/22/11	2130	No Internal NonFirm Tags	
04/22/11	2130	TLR - 5a Reissue	reissued TLR 5a PC 84%. EES NNL 34.6
04/22/11	2226	No Internal NonFirm Tags	
04/22/11	2226	TLR - 5a Reissue	reissued TLR 5a PC 79%. EES NNL 0.
04/22/11	2335	TLR - 0	reissued TLR 0 PC 81%. Notified John EES. REF. 414568.
04/22/11	2335	TA Notification	Talked to ED ICT Tariff and told him we went to TLR 0 and to return the AFC's back normal.