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Lodi Energy Center Project Participant Committee Operational Report

Agenda Item No.: 3

Date: 07/10/2017

To: Lodi Energy Center Project Participant Committee

Safety

- OSHA Recordable: 0 Accidents

Notice of Violations

- Permits: 0 Violations Issued
- NERC/WECC: 0 Violations Issued

Outage Summaries:

- No Outages

Planned Outage Summaries:

- 2018 – Planning April/May Outage Time Frames and Scope

Generating Unit Statistics:**Report
Date:**

6/1/2017

1. Monthly Production	34,708	MWH
2. Productivity Factor		
a. Service Hours	247	Hours
b. Service Factor	34.4	%
c. Capacity Factor @ 280MW Pmax	17.2	%
d. Capacity Factor @ 302MW Pmax	16.0	%
3. Equivalent Operating Availability (EOA)	100.0	%
4. Forced Outage Rate (FOR)		
a. Total LEC Plant FOR	0.0	%

5. Heat Rate Deviation

a. Fuel Cost (Not Current Market Price) 4.00 \$/mmBTU

MW Range	PMOA HR BTU/kW- Hr	Average HR BTU/kW- Hr	Deviation %	Production MWH	Cost \$
Seg. 1 296 +	6850	0	0.00%	0	\$0
Seg. 2 284 - 296	6870	6,887	0.25%	142	\$10
Seg. 3 275 - 284	6971	6,924	-0.67%	2,347	-\$438
Seg. 4 250 - 275	7081	6,952	-1.83%	16,315	-\$8,439
Seg. 5 225 - 250	7130	7,019	-1.55%	4,693	-\$2,079
Seg. 6 200 - 225	7200	7,108	-1.28%	2,953	-\$1,089
Seg. 7 175 - 225	7450	7,334	-1.55%	3,800	-\$1,760
Seg. 8 165 - 175	7760	7,674	-1.11%	1,948	-\$670
	7,164	7,128	-1.33%	32,197	-\$14,464

6. AGC Control Deviation

MW Range	High Dev MWH	Low Dev MWH	Total Dev MWH	Cost \$
Bad AGC Data for May				
Seg. 1 296 +	0	0	0	\$0
Seg. 2 284 - 296	1	0	1	\$18
Seg. 3 275 - 284	7	-4	11	\$303
Seg. 4 250 - 275	33	-215	248	\$6,898
Seg. 5 225 - 250	28	-12	39	\$1,103
Seg. 6 200 - 225	19	-14	33	\$938
Seg. 7 175 - 225	21	-30	50	\$1,476
Seg. 8 165 - 175	7	-3	10	\$300
	115	-277	392	\$11,037

7. Starting Reliability

Start Type	Hot Starts	Warm Starts	Cold Starts
Number of Starts	0	12	4
Start Time Benchmark (Minutes)	75	110	200
Start Time Actual (Average Minute)	0	96	147
Start Time Deviation (%)	0%	-13%	-27%
Start Fuel Benchmark PMOA (mmBTU)	1,300	1,800	3,500
Start Fuel Actual (Average mmBTU)	1,300	1,744	2,875
Fuel Deviation (%)	0%	-3%	-18%
Costs of Fuel Deviations (\$)	\$0	-\$226	-\$2,500

Definitions:

1. Monthly Production = Plant Net MWH's
2. Capacity Factor
 - a. Service Hours = In Production or in Service State
 - b. Service Factor = $SH / PH \times 100\%$
 - c. Capacity Factor = $Production / 302MW \times PH$
 - d. Capacity Factor = $Production / 280MW \times PH$
3. Monthly Equivalent Availability Factor (EAF) = $(AH - EPDH - EFDH) / PH \times 100\%$
4. Forced Outage Rate = $(FOH / (FOH + SH)) \times 100\%$
5. Heat Rate Deviation (HRD)
 - a. Fuel Cost = Cost of Fuel in \$/mmBTU
 - b. Average Heat Rate = The Average Heat Rate for the given Range
 - c. Heat Rate Deviation = $(Heat\ Rate\ Average - Heat\ Rate\ Expected) / Heat\ Rate\ Expected \times 100\%$
 - d. Production = The Sum of Production for the given Range
 - e. Costs of Heat Rate Deviations = $(Average\ Heat\ Rate - Expected\ Heat\ Rate) \times Production \times Cost\ of\ Fuel$
6. AGC Deviation-
 - a. MWH's = AGC Set Point Generation - LEC Actual Generation
 - b. Cost of Deviations = Fuel Cost x Heat Rate x Generation
7. Starting Reliability
 - a. Number of Starts = Start Count for Hot, Warm, and Cold
 - b. Start Time = Average Time from 0 Fuel Flow to Pmin
 - c. Start Fuel = Average Fuel Consumption to Pmin
 - d. Cost of Fuel Deviation = $(Actual\ Fuel\ Consumed - Expected\ Fuel) \times Cost\ of\ Fuel$