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Lodi Energy Center Project Participant Committee Operational Report

Agenda Item No.: 3

Date: 08/14/2017

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:

- July 19th, 20th, 21st, and 22nd (61hours) forced out of service due to water supply curtailment.
- July 29th and 30th (7 hours) forced out of service due to an inlet guide vane (IGV) servo actuator positioning error.

Planned Outage Summaries:

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

Generating Unit Statistics:**Report
Date:**

7/1/2017

1. Monthly Production	52,294	MWH
2. Productivity Factor		
a. Service Hours	249	Hours
b. Service Factor	33.4	%
c. Capacity Factor @ 280MW Pmax	25.1	%
d. Capacity Factor @ 302MW Pmax	23.3	%
3. Equivalent Operating Availability (EOA)	90.9	%
4. Forced Outage Rate (FOR)		
a. Total LEC Plant FOR	21.5	%

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	0	0.00%	142	-\$3,910
Seg. 3 275 - 284	6971	6,932	-0.56%	2,347	-\$364
Seg. 4 250 - 275	7081	6,965	-1.64%	16,315	-\$7,578
Seg. 5 225 - 250	7130	7,034	-1.34%	4,693	-\$1,797
Seg. 6 200 - 225	7200	7,149	-0.70%	2,953	-\$597
Seg. 7 175 - 225	7450	7,416	-0.46%	3,800	-\$519
Seg. 8 165 - 175	7760	7,723	-0.48%	1,948	-\$290
	7,164	7,203	-0.86%	32,197	-\$15,055

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	0	0	0	\$0
Seg. 3 275 - 284	10	-84	94	\$2,602
Seg. 4 250 - 275	51	-228	279	\$7,780
Seg. 5 225 - 250	27	-13	40	\$1,123
Seg. 6 200 - 225	22	-18	40	\$1,148
Seg. 7 175 - 225	27	-35	62	\$1,849
Seg. 8 165 - 175	5	-3	7	\$226
	141	-382	523	\$14,728

7. Starting Reliability

Start Type	Hot Starts	Warm Starts	Cold Starts
Number of Starts	0	21	2
Start Time Benchmark (Minutes)	75	110	200
Start Time Actual (Average Minute)	0	149	133
Start Time Deviation (%)	0%	35%	-33%
Start Fuel Benchmark PMOA (mmBTU)	1,300	1,800	3,500
Start Fuel Actual (Average mmBTU)	1,300	1,657	2,651
Fuel Deviation (%)	0%	-8%	-24%
Costs of Fuel Deviations (\$)	\$0	-\$570	-\$3,397

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 = $(Actual\ Fuel\ Consumed - Expected\ Fuel) \times Cost\ of\ Fuel$