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Lodi Energy Center Project Participant Committee Operational Report

Agenda Item No.: 3

Date: 10/09/2017

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:

- None

Planned Outage Summaries:

- 2018 – April 4th – 15th Steam Turbine , BOP, HRSG Seals, Generator Inspections

Generating Unit Statistics:**Report
Date:**

10/1/2017

1. Monthly Production	136,030	MWH
2. Productivity Factor		
a. Service Hours	545	Hours
b. Service Factor	73.2	%
c. Capacity Factor @ 280MW Pmax	65.3	%
d. Capacity Factor @ 302MW Pmax	60.5	%
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	6,975	1.53%	142	\$60
Seg. 3 275 - 284	6971	6,989	0.26%	2,347	\$168
Seg. 4 250 - 275	7081	7,020	-0.87%	16,315	-\$4,011
Seg. 5 225 - 250	7130	7,058	-1.02%	4,693	-\$1,359
Seg. 6 200 - 225	7200	7,165	-0.49%	2,953	-\$419
Seg. 7 175 - 225	7450	7,419	-0.42%	3,800	-\$474
Seg. 8 165 - 175	7760	7,770	0.13%	1,948	\$77
	7,164	7,199	-0.40%	32,197	-\$5,958

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	46	-132	178	\$4,963
Seg. 3 275 - 284	74	-225	299	\$8,345
Seg. 4 250 - 275	162	-172	334	\$9,375
Seg. 5 225 - 250	96	-33	129	\$3,635
Seg. 6 200 - 225	42	-49	90	\$2,589
Seg. 7 175 - 225	35	-82	117	\$3,470
Seg. 8 165 - 175	7	-3	11	\$331
	462	-695	1,157	\$32,709

7. Starting Reliability

Start Type	Hot Starts	Warm Starts	Cold Starts
Number of Starts	8	12	0
Start Time Benchmark (Minutes)	75	110	200
Start Time Actual (Average Minute)	67	89	0
Start Time Deviation (%)	-11%	-19%	0%
Start Fuel Benchmark PMOA (mmBTU)	1,300	1,800	3,500
Start Fuel Actual (Average mmBTU)	1,180	1,661	0
Fuel Deviation (%)	-9%	-8%	0%
Costs of Fuel Deviations (\$)	-\$481	-\$554	\$0

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