



12745 N. Thornton Road
Lodi, CA 95242

phone (209) 333-6370
fax (209) 333-6374
web www.ncpa.com

Lodi Energy Center Project Participant Committee Operational Report

Agenda Item No.: 3

Date: 04/10/2017

To: Lodi Energy Center Project Participant Committee

Safety

- OSHA Recordable: 0 Accidents

Notice of Violations

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

Outage Summaries:

- 3/11/17 – 13.8 Hours, Combustion Turbine Inlet Guide Vane (IGV) actuator replacement.
- 3/31/17 – Forced out of service due to White Slough Waste Water Treatment curtailment.

Planned Outage Summaries:

- 2017 May: Outage will center around Combustion Turbine Inspection, HRSG and valve maintenance.

Generating Unit Statistics:**Report**

3/1/2017

Date:

1. Monthly Production	7,086	MWH
2. Productivity Factor		
a. Service Hours	42	Hours
b. Service Factor	5.6	%
c. Capacity Factor @ 280MW Pmax	3.4	%
d. Capacity Factor @ 302MW Pmax	3.2	%
3. Equivalent Operating Availability (EOA)	98.1	%
4. Forced Outage Rate (FOR)		
a. Total LEC Plant FOR	24.7	%

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	6,850	0.00%	2,505	\$0
Seg. 2 284 - 296	6870	7,060	2.76%	604	\$459
Seg. 3 275 - 284	6971	7,043	1.04%	1,070	\$310
Seg. 4 250 - 275	7081	7,058	-0.33%	2,471	-\$231
Seg. 5 225 - 250	7130	7,139	0.12%	1,874	\$65
Seg. 6 200 - 225	7200	7,240	0.56%	968	\$155
Seg. 7 175 - 225	7450	7,522	0.97%	2,790	\$807
Seg. 8 165 - 175	7760	7,830	0.90%	2,362	\$658
	7,164	7,218	0.86%	14,644	\$2,222

6. AGC Control Deviation

MW Range	High Dev MWH	Low Dev MWH	Total Dev MWH	Cost \$
Seg. 1 296 +	0	0	0	\$0
Seg. 2 284 - 296	0	0	0	\$10
Seg. 3 275 - 284	1	-2	2	\$64
Seg. 4 250 - 275	3	-1	4	\$121
Seg. 5 225 - 250	3	-2	5	\$149
Seg. 6 200 - 225	5	-6	11	\$324
Seg. 7 175 - 225	15	-17	32	\$954
Seg. 8 165 - 175	5	-1	7	\$211
	33	-29	62	\$1,833

7. Starting Reliability

Start Type	Hot Starts	Warm Starts	Cold Starts
Number of Starts	0	2	3
Start Time Benchmark (Minutes)	75	110	200
Start Time Actual (Average Minute)	0.0	93.5	199.3
Start Time Deviation (%)	-100.0%	-15.0%	-0.3%
Start Fuel Benchmark PMOA (mmBTU)	1,300	1,800	3,500
Start Fuel Actual (Average mmBTU)	1,300	1,739	3,989
Fuel Deviation (%)	0.0%	-3.4%	14.0%
Costs of Fuel Deviations (\$)	\$0	-\$243	\$1,955

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