

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 1

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
0	Reserve Shutdown	RS	02/28/2023 18:17	03/10/2023 08:55	230.63	0.00	0.0	0.0
0	Reserve Shutdown	RS	04/01/2023 09:30	04/02/2023 16:14	30.73	0.00	0.0	0.0
0	Reserve Shutdown	RS	05/06/2023 09:56	05/07/2023 08:54	22.97	0.00	0.0	0.0
3	Occurrences for Cause Code	<i>0 reserve shutdown</i>		TOTAL	284.33	0.00	0.0	0.0
				AVERAGE	94.78	0.00	0.0	0.0
3	Occurrences for System-Component	<i>External-Economic</i>		TOTAL	284.33	0.00	0.0	0.0
				AVERAGE	94.78	0.00	0.0	0.0

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300	Pulverizer motor tripped due to ground fault.	D1	07/05/2023 18:54	07/05/2023 23:47	4.88	0.28	17.0	83.1	
1	Occurrences for Cause Code				TOTAL	4.88	0.28	17.0	83.1
					AVERAGE	4.88	0.28	17.0	83.1
344	Pulverizer Inspection PMs	D4	07/12/2023 06:20	07/12/2023 14:51	8.52	1.85	65.0	553.5	
344	Pulverizer Inspection PMs	D4	07/13/2023 06:00	07/13/2023 06:41	0.68	0.15	65.0	44.4	
2	Occurrences for Cause Code				TOTAL	9.20	2.00	130.0	597.9
					AVERAGE	4.60	1.00	65.0	299.0
3	Occurrences for System-Component				TOTAL	14.08	2.28	147.0	681.0
					AVERAGE	4.69	0.76	49.0	227.0

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1000	Waterwall tube leak.	MO	03/29/2023 01:30	04/01/2023 09:30	80.00	80.00	300.0	24000.0	
1	Occurrences for Cause Code				TOTAL	80.00	80.00	300.0	24000.0
					AVERAGE	80.00	80.00	300.0	24000.0
1	Occurrences for System-Component				TOTAL	80.00	80.00	300.0	24000.0
					AVERAGE	80.00	80.00	300.0	24000.0

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1401	FD fan inlet control damper degrading resulting in below normal O2.	D1	06/30/2023 16:10	06/30/2023 23:59	7.82	0.47	18.0	140.7
1401	FD fan inlet control damper issue resulting in below normal O2.	D1	07/01/2023 14:33	07/01/2023 23:59	9.43	0.31	10.0	94.2
1401	Inspected and repaired control damper linkage turnbuckle.	D4	07/11/2023 06:00	07/11/2023 12:18	6.30	3.26	155.0	976.5
3	Occurrences for Cause Code	1401 forced draft fan dampers		TOTAL	23.55	4.04	183.0	1211.4
				AVERAGE	7.85	1.35	61.0	403.8
1455	ID Fan indicated high bearing temperature (thermocouple failed).	D1	06/26/2023 13:39	06/26/2023 14:00	0.35	0.18	155.0	54.3
1	Occurrences for Cause Code	1455 induced draft fans		TOTAL	0.35	0.18	155.0	54.3
				AVERAGE	0.35	0.18	155.0	54.3
1456	ID fan control damper locked up.	D1	02/21/2023 05:35	02/21/2023 17:49	12.23	1.84	45.0	550.5
1456	ID control damper locked up.	D1	02/21/2023 18:17	02/23/2023 23:10	52.88	7.93	45.0	2379.6
1456	Make repairs to ID fan control damper.	MO	02/24/2023 00:15	02/28/2023 18:17	114.03	114.03	300.0	34209.9
3	Occurrences for Cause Code	1456 induced draft fan dampers		TOTAL	179.14	123.80	390.0	37140.0
				AVERAGE	59.71	41.27	130.0	12380.0
1488	Air heater water outage.	MO	04/23/2023 01:36	04/29/2023 08:18	150.70	150.70	300.0	45210.0
1	Occurrences for Cause Code	1488 air heater (regenerative)		TOTAL	150.70	150.70	300.0	45210.0
				AVERAGE	150.70	150.70	300.0	45210.0
8	Occurrences for System-Component	Boiler-Boiler Air and Gas Systems		TOTAL	353.74	278.72	1028.0	83615.7
				AVERAGE	44.22	34.84	128.5	10452.0

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3110	Condenser tube leak.	DI	05/05/2023 03:40	05/06/2023 09:56	30.27	3.42	155.0	1025.7	
3110	Condenser tube leak	UI	05/05/2023 10:17	05/06/2023 09:56	23.65	23.65	300.0	7095.0	
2	Occurrences for Cause Code	<i>3110 condenser tube leaks</i>			TOTAL	53.92	27.07	455.0	8120.7
					AVERAGE	26.96	13.54	227.5	4060.4
2	Occurrences for System-Component	<i>Balance of Plant-Condensing System</i>			TOTAL	53.92	27.07	455.0	8120.7
					AVERAGE	26.96	13.54	227.5	4060.4

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3539	Unit supplying steam to International Paper.	D1	04/02/2023 16:14	04/07/2023 01:06	104.87	17.48	50.0	5243.4
3539	Unit supplying steam to International Paper.	D1	04/08/2023 13:23	04/11/2023 02:40	61.28	10.21	50.0	3064.2
3539	Unit supplying steam to International Paper.	D4	04/13/2023 12:00	04/17/2023 21:34	105.57	17.59	50.0	5278.2
3539	Unit supplying steam to International Paper.	D4	05/08/2023 00:00	06/28/2023 19:04	1243.07	207.18	50.0	62153.4
3539	Unit supplying steam to International Paper.	D1	06/30/2023 04:15	06/30/2023 06:42	2.45	0.41	50.0	122.4
<hr/> 5	Occurrences for Cause Code	<i>3539 other ip extraction steam system problems</i>		TOTAL	<hr/> 1517.24	<hr/> 252.87	<hr/> 250.0	<hr/> 75861.6
				AVERAGE	303.45	50.57	50.0	15172.3
<hr/> 5	Occurrences for System-Component	<i>Balance of Plant-Extraction Steam</i>		TOTAL	<hr/> 1517.24	<hr/> 252.87	<hr/> 250.0	<hr/> 75861.6
				AVERAGE	303.45	50.57	50.0	15172.3

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Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
4250	Elevated low pressure turbine bearing vibration.	D1	12/22/2023 22:31	12/23/2023 07:30	8.98	3.59	120.0	1077.9
4250	Elevated low pressure turbine bearing vibration.	D1	12/23/2023 07:30	12/23/2023 16:45	9.25	4.32	140.0	1295.1
4250	Elevated low pressure turbine bearing vibration.	D1	12/23/2023 16:45	12/23/2023 17:30	0.75	0.05	20.0	15.0
3	Occurrences for Cause Code	<i>4250 other low pressure turbine problems</i>		TOTAL	18.98	7.96	280.0	2388.0
				AVERAGE	6.33	2.65	93.3	796.0
3	Occurrences for System-Component	<i>Steam Turbine-Low Pressure Turbine</i>		TOTAL	18.98	7.96	280.0	2388.0
				AVERAGE	6.33	2.65	93.3	796.0

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4261	Turbine control valve failed closed.	DI	05/04/2023 05:00	05/04/2023 05:53	0.88	0.35	120.0	105.9	
4261	Replace #1 turbine control valve servo.	UI	05/04/2023 10:24	05/04/2023 13:30	3.10	3.10	300.0	930.0	
2	Occurrences for Cause Code	4261 control valves			TOTAL	3.98	3.45	420.0	1035.9
					AVERAGE	1.99	1.72	210.0	518.0
2	Occurrences for System-Component	Steam Turbine-Valves			TOTAL	3.98	3.45	420.0	1035.9
					AVERAGE	1.99	1.72	210.0	518.0

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4279	Flange leaking on HP turbine sensing line to 1st pressure transmitter.	SF	03/10/2023 08:55	03/10/2023 18:29	9.57	9.57	300.0	2870.1	
1	Occurrences for Cause Code				TOTAL	9.57	9.57	300.0	2870.1
					AVERAGE	9.57	9.57	300.0	2870.1
1	Occurrences for System-Component				TOTAL	9.57	9.57	300.0	2870.1
					AVERAGE	9.57	9.57	300.0	2870.1

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4293	Replaced EHC system coupling.	MO	01/03/2023 04:49	01/03/2023 09:16	4.45	4.45	300.0	1335.0	
1	Occurrences for Cause Code		<i>4293 hydraulic system pipes and valves</i>		TOTAL	4.45	4.45	300.0	1335.0
					AVERAGE	4.45	4.45	300.0	1335.0
4309	Received Turbine Stress alarm, alarm was determined to be faulty.	DI	07/21/2023 20:02	07/21/2023 20:45	0.72	0.37	155.0	111.0	
1	Occurrences for Cause Code		<i>4309 other turbine instrument and control problems</i>		TOTAL	0.72	0.37	155.0	111.0
					AVERAGE	0.72	0.37	155.0	111.0
2	Occurrences for System-Component		<i>Steam Turbine-Controls</i>		TOTAL	5.17	4.82	455.0	1446.0
					AVERAGE	2.58	2.41	227.5	723.0

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4400	Turbine Major Overhaul	PO	09/21/2023 03:04	12/16/2023 12:21	2074.28	2074.28	300.0	622284.9
<i>1</i>	Occurrences for Cause Code	<i>4400 major turbine overhaul (720 hours or longer) (use for non-specific overhaul only; see page b-cc)</i>		TOTAL	2074.28	2074.28	300.0	622284.9
				AVERAGE	2074.28	2074.28	300.0	622284.9
<i>1</i>	Occurrences for System-Component	<i>Steam Turbine-Miscellaneous (Steam Turbine)</i>		TOTAL	2074.28	2074.28	300.0	622284.9
				AVERAGE	2074.28	2074.28	300.0	622284.9

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8010	Ball mill motor failure.	D1	05/19/2023 22:13	05/21/2023 20:00	45.78	16.02	105.0	4807.2	
8010	Ball mill motor failure.	D1	05/20/2023 06:04	05/21/2023 20:00	37.93	2.53	20.0	758.7	
2	Occurrences for Cause Code	8010 crushers/mills			TOTAL	83.71	18.55	125.0	5565.9
					AVERAGE	41.86	9.28	62.5	2783.0
2	Occurrences for System-Component	Pollution Control Equipment-Wet Scrubbers			TOTAL	83.71	18.55	125.0	5565.9
					AVERAGE	41.86	9.28	62.5	2783.0

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33	Occurrences for Unit:							
	<i>Spurlock 1</i>							
				TOTAL	4499.00	2759.57	4060.0	827869.8
				AVERAGE	136.33	83.62	123.0	25087.0

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Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
0	Reserve Shutdown	RS	04/06/2023 00:24	04/06/2023 11:50	11.43	0.00	0.0	0.0
0	Reserve Shutdown	RS	04/10/2023 11:05	04/12/2023 00:00	36.92	0.00	0.0	0.0
0	Reserve Shutdown	RS	04/16/2023 17:40	04/17/2023 13:50	20.17	0.00	0.0	0.0
3	Occurrences for Cause Code	<i>0 reserve shutdown</i>		TOTAL	68.52	0.00	0.0	0.0
				AVERAGE	22.84	0.00	0.0	0.0
3	Occurrences for System-Component	<i>External-Economic</i>		TOTAL	68.52	0.00	0.0	0.0
				AVERAGE	22.84	0.00	0.0	0.0

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855	Calibrated boiler safety valves	D4	07/21/2023 21:00	07/22/2023 02:18	5.30	2.60	250.0	1325.0
<i>1</i>	Occurrences for Cause Code	<i>855 drum relief/safety valves (single drum only)</i>		TOTAL	5.30	2.60	250.0	1325.0
				AVERAGE	5.30	2.60	250.0	1325.0
<i>1</i>	Occurrences for System-Component	<i>Boiler-Boiler Internals and Structures</i>		TOTAL	5.30	2.60	250.0	1325.0
				AVERAGE	5.30	2.60	250.0	1325.0

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1000	Waterwall tube leak.	U1	04/02/2023 04:02	04/06/2023 00:24	92.37	92.37	510.0	47107.2
1000	Investigating potential waterwall tube leak.	D1	04/08/2023 13:11	04/08/2023 14:13	1.03	0.17	85.0	87.7
1000	Boiler waterwall tube leak	U1	04/08/2023 14:13	04/10/2023 11:05	44.87	44.87	510.0	22882.2
3	Occurrences for Cause Code	<i>1000 waterwall (furnace wall)</i>		TOTAL	138.27	137.41	1105.0	70077.1
				AVERAGE	46.09	45.80	368.3	23359.0
3	Occurrences for System-Component	<i>Boiler-Boiler Tube Leaks</i>		TOTAL	138.27	137.41	1105.0	70077.1
				AVERAGE	46.09	45.80	368.3	23359.0

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1350	Replace degrading boiler waterwall tubes.	MO	04/12/2023 00:00	04/16/2023 17:40	113.67	113.67	510.0	57970.2
<i>1</i>	Occurrences for Cause Code				TOTAL	113.67	510.0	57970.2
					AVERAGE	113.67	510.0	57970.2
<i>1</i>	Occurrences for System-Component				TOTAL	113.67	510.0	57970.2
					AVERAGE	113.67	510.0	57970.2

1350 other miscellaneous boiler tube problems

Boiler-Miscellaneous Boiler Tube Problems

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1455	Overhaul ID fan.	MO	06/12/2023 00:00	06/17/2023 00:00	120.00	120.00	510.0	61200.0
1	Occurrences for Cause Code	<i>1455 induced draft fans</i>		TOTAL	120.00	120.00	510.0	61200.0
				AVERAGE	120.00	120.00	510.0	61200.0
1488	Elevated air heater amps.	D1	12/27/2023 12:11	12/27/2023 13:57	1.77	0.36	105.0	185.6
1488	Elevated air heater outlet gas temperatures.	D1	12/28/2023 18:21	12/28/2023 21:04	2.72	0.77	145.0	393.7
1488	Elevated air heater outlet gas temperatures.	D1	12/28/2023 21:04	12/29/2023 01:00	3.93	0.27	35.0	137.7
3	Occurrences for Cause Code	<i>1488 air heater (regenerative)</i>		TOTAL	8.42	1.40	285.0	717.0
				AVERAGE	2.81	0.47	95.0	239.0
4	Occurrences for System-Component	<i>Boiler-Boiler Air and Gas Systems</i>		TOTAL	128.42	121.40	795.0	61917.0
				AVERAGE	32.10	30.35	198.8	15479.2

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1812	Annual planned outage. Rebuild all turbine & BFPT valves and routine outage work	PO	05/08/2023 03:14	06/12/2023 00:00	836.77	836.77	510.0	426751.2	
1	Occurrences for Cause Code				TOTAL	836.77	836.77	510.0	426751.2
					AVERAGE	836.77	836.77	510.0	426751.2
1	Occurrences for System-Component				TOTAL	836.77	836.77	510.0	426751.2
					AVERAGE	836.77	836.77	510.0	426751.2

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3412	BFPT tripped due to high HP bearing vibration.	DI	06/30/2023 04:05	06/30/2023 06:50	2.75	1.42	264.0	726.2	
<i>1</i>	Occurrences for Cause Code				TOTAL	2.75	1.42	264.0	726.2
					AVERAGE	2.75	1.42	264.0	726.2
<i>1</i>	Occurrences for System-Component				TOTAL	2.75	1.42	264.0	726.2
					AVERAGE	2.75	1.42	264.0	726.2

3412 feedwater pump drive - steam turbine

Balance of Plant-Feedwater System

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3661	Motor and Breaker to 2D Pulverizer failed.	MO	06/17/2023 00:00	06/24/2023 00:00	168.00	168.00	510.0	85680.0	
1	Occurrences for Cause Code								
	3661 4000-7000 volt circuit breakers								
					TOTAL	168.00	168.00	510.0	85680.0
					AVERAGE	168.00	168.00	510.0	85680.0
3690	Phase 1 of Installing general service cubical, bus and tie breaker.	D4	10/08/2023 07:00	10/08/2023 18:00	11.00	5.39	250.0	2749.9	
3690	Phase 2 of Installing general service cubical, bus and tie breaker.	D4	10/14/2023 20:00	10/15/2023 04:00	8.00	3.92	250.0	2000.2	
3690	Phase 3 of Installing general service cubical, bus and tie breaker.	D4	10/15/2023 12:00	10/15/2023 22:06	10.10	4.95	250.0	2525.0	
3690	Phase 4 of Installing general service cubical, bus and tie breaker.	D4	10/21/2023 19:00	10/22/2023 05:00	10.00	4.90	250.0	2500.0	
3690	Phase 5 of Installing general service cubical, bus and tie breaker.	D4	10/22/2023 12:00	10/23/2023 03:02	15.03	7.37	250.0	3758.2	
3690	Phase 6 of Installing general service cubical, bus and tie breaker.	D4	11/05/2023 07:00	11/05/2023 18:07	11.12	5.45	250.0	2779.0	
6	Occurrences for Cause Code								
	3690 station service power distribution system, general								
					TOTAL	65.25	31.98	1500.0	16312.3
					AVERAGE	10.88	5.33	250.0	2718.7
7	Occurrences for System-Component								
	Balance of Plant-Electrical								
					TOTAL	233.25	199.98	2010.0	101992.3
					AVERAGE	33.32	28.57	287.1	14570.3

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4261	#4 Turbine Control valve not seating properly.	MO	06/24/2023 00:00	06/28/2023 00:51	96.85	96.85	510.0	49393.5
<i>1</i>	Occurrences for Cause Code							
	<i>4261 control valves</i>							
				TOTAL	96.85	96.85	510.0	49393.5
				AVERAGE	96.85	96.85	510.0	49393.5
<i>1</i>	Occurrences for System-Component							
	<i>Steam Turbine-Valves</i>							
				TOTAL	96.85	96.85	510.0	49393.5
				AVERAGE	96.85	96.85	510.0	49393.5

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Spurlock 2

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
8699	Wet Electrostatic Precipitator inspection.	D1	11/27/2023 11:19	11/27/2023 14:26	3.12	1.53	250.0	779.3
8699	Repair breach in Wet Electrostatic Precipitator.	D4	11/29/2023 12:06	11/30/2023 00:58	12.87	6.31	250.0	3216.6
8699	Repair breach in Wet Electrostatic Precipitator.	D4	11/30/2023 12:00	12/01/2023 00:35	12.58	6.17	250.0	3145.7
8699	Repair breach in Wet Electrostatic Precipitator.	D4	12/01/2023 12:00	12/02/2023 02:37	14.62	7.17	250.0	3654.2
8699	Repair breach in Wet Electrostatic Precipitator.	D4	12/02/2023 12:10	12/02/2023 18:58	6.80	3.33	250.0	1699.8
5	Occurrences for Cause Code	8699 other miscellaneous pollution control equipment problems		TOTAL	49.99	24.51	1250.0	12495.6
				AVERAGE	10.00	4.90	250.0	2499.1
5	Occurrences for System-Component	Pollution Control Equipment-Miscellaneous (Pollution Control Equipment)		TOTAL	49.99	24.51	1250.0	12495.6
				AVERAGE	10.00	4.90	250.0	2499.1

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 2

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
27	Occurrences for Unit:							
	<i>Spurlock 2</i>							
				TOTAL	1673.79	1534.61	7204.0	782648.1
				AVERAGE	61.99	56.84	266.8	28987.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
0	Reserve Shutdown	RS	03/02/2023 03:12	03/18/2023 00:00	379.80	0.00	0.0	0.0	
1	Occurrences for Cause Code				TOTAL	379.80	0.00	0.0	0.0
					AVERAGE	379.80	0.00	0.0	0.0
1	Occurrences for System-Component				TOTAL	379.80	0.00	0.0	0.0
					AVERAGE	379.80	0.00	0.0	0.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
250	Obstruction in coal feeder.	D1	04/30/2023 09:04	04/30/2023 10:32	1.47	0.44	80.0	117.4	
250	Foreign debris (metal) in coal feeder.	D1	12/20/2023 16:30	12/20/2023 19:23	2.88	0.22	20.0	57.6	
2	Occurrences for Cause Code	250 pulverizer feeders			TOTAL	4.35	0.66	100.0	175.0
					AVERAGE	2.18	0.33	50.0	87.5
320	Foreign object (broken plow) in Limestone Mill.	D1	05/03/2023 03:21	05/03/2023 11:27	8.10	0.85	28.0	226.7	
320	Foreign debris (metal) in Limestone mill.	D1	12/19/2023 17:35	12/19/2023 20:58	3.38	0.38	30.0	101.6	
320	Foreign debris (metal) in Limestone mill.	D1	12/19/2023 20:58	12/20/2023 04:12	7.23	1.35	50.0	361.8	
3	Occurrences for Cause Code	320 foreign object in pulverizers mill			TOTAL	18.71	2.58	108.0	690.1
					AVERAGE	6.24	0.86	36.0	230.0
344	Performed limestone mill PM.	D4	09/19/2023 07:00	09/19/2023 14:54	7.90	0.88	30.0	236.9	
344	Limestone mill PM	D4	12/22/2023 08:00	12/22/2023 13:52	5.87	2.80	128.0	750.9	
2	Occurrences for Cause Code	344 pulverizer inspection			TOTAL	13.77	3.68	158.0	987.8
					AVERAGE	6.88	1.84	79.0	493.9
7	Occurrences for System-Component	Boiler-Boiler Fuel Supply from Bunkers to Boiler			TOTAL	36.83	6.92	366.0	1852.9
					AVERAGE	5.26	0.99	52.3	264.7

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
855	Check/calibrate drum safety valve	D4	05/05/2023 10:00	05/05/2023 11:43	1.72	0.38	60.0	102.9
855	Calibrate boiler safety valve	D4	06/14/2023 07:00	06/14/2023 12:03	5.05	2.41	128.0	646.4
2	Occurrences for Cause Code	<i>855 drum relief/safety valves (single drum only)</i>		TOTAL	6.77	2.79	188.0	749.3
				AVERAGE	3.38	1.40	94.0	374.6
2	Occurrences for System-Component	<i>Boiler-Boiler Internals and Structures</i>		TOTAL	6.77	2.79	188.0	749.3
				AVERAGE	3.38	1.40	94.0	374.6

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
880	Made repairs to flyash transport piping.	D4	11/03/2023 11:00	11/03/2023 13:07	2.12	1.01	128.0	270.9	
880	Flyash removal system feeders failed to operate (faulty solenoids).	D1	11/15/2023 21:09	11/16/2023 03:00	5.85	0.66	30.0	175.5	
2	Occurrences for Cause Code	<i>880 fly ash removal system (not precipitators, scrubbers, mechanical collectors, or baghouses)</i>			TOTAL	7.97	1.67	158.0	446.4
				AVERAGE	3.98	0.84	79.0	223.2	
890	Bed ash screw conveyor cooling water leak.	D1	05/09/2023 19:48	05/10/2023 09:44	13.93	2.50	48.0	668.9	
890	Bed ash screw conveyor repair.	MO	05/13/2023 02:03	05/25/2023 00:54	286.85	286.85	268.0	76875.8	
2	Occurrences for Cause Code	<i>890 bottom ash systems (wet or dry)</i>			TOTAL	300.78	289.35	316.0	77544.7
				AVERAGE	150.39	144.68	158.0	38772.4	
4	Occurrences for System-Component	<i>Boiler-Slag and Ash Removal</i>			TOTAL	308.75	291.02	474.0	77991.1
				AVERAGE	77.19	72.76	118.5	19497.8	

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
931	Repair Ash System Leaks	D4	07/19/2023 06:00	07/19/2023 09:10	3.17	1.51	128.0	405.2
1	Occurrences for Cause Code				TOTAL	3.17	128.0	405.2
					AVERAGE	3.17	128.0	405.2
950	High furnace D/P	D1	12/21/2023 04:33	12/21/2023 06:17	1.73	0.25	38.0	65.9
950	High furnace D/P	D1	12/21/2023 06:17	12/21/2023 09:13	2.93	0.74	68.0	199.4
950	High furnace D/P	D1	12/21/2023 09:13	12/21/2023 15:07	5.90	1.94	88.0	519.1
3	Occurrences for Cause Code				TOTAL	10.56	194.0	784.4
					AVERAGE	3.52	64.7	261.5
4	Occurrences for System-Component				TOTAL	13.73	322.0	1189.6
					AVERAGE	3.43	80.5	297.4

931 bed material transport piping/valves

950 other bed material system problems

Boiler-Bed Material Removal System

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
1360	Boiler drain valve leaking-by (replacing drain).	MO	11/18/2023 01:31	11/21/2023 04:46	75.25	75.25	268.0	20167.0	
1	Occurrences for Cause Code				TOTAL	75.25	75.25	268.0	20167.0
					AVERAGE	75.25	75.25	268.0	20167.0
1	Occurrences for System-Component				TOTAL	75.25	75.25	268.0	20167.0
					AVERAGE	75.25	75.25	268.0	20167.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
1812	Annual Planned Outage	PO	03/18/2023 00:00	04/16/2023 04:41	700.68	700.68	268.0	187783.0	
					TOTAL	700.68	700.68	268.0	187783.0
					AVERAGE	700.68	700.68	268.0	187783.0
					TOTAL	700.68	700.68	268.0	187783.0
					AVERAGE	700.68	700.68	268.0	187783.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
3211	Circulating Water Pump 3B Trip	D1	07/14/2023 17:21	07/14/2023 22:22	5.02	0.90	48.0	240.9	
<i>1</i>	Occurrences for Cause Code				TOTAL	5.02	0.90	48.0	240.9
					AVERAGE	5.02	0.90	48.0	240.9
<i>1</i>	Occurrences for System-Component				TOTAL	5.02	0.90	48.0	240.9
					AVERAGE	5.02	0.90	48.0	240.9

3211 circulating water pump motors

Balance of Plant-Circulating Water Systems

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
3411	Boiler feed pump motor tripped due to high outboard bearing temperature.	DI	07/29/2023 22:00	08/01/2023 17:03	67.05	29.52	118.0	7911.9	
1	Occurrences for Cause Code				TOTAL	67.05	29.52	118.0	7911.9
					AVERAGE	67.05	29.52	118.0	7911.9
1	Occurrences for System-Component				TOTAL	67.05	29.52	118.0	7911.9
					AVERAGE	67.05	29.52	118.0	7911.9

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
8650	Repair Baghouse fluid trough.	D4	10/04/2023 05:00	10/04/2023 08:03	3.05	1.46	128.0	390.5	
8650	Repair Baghouse fluid trough.	D4	10/07/2023 07:00	10/07/2023 10:24	3.40	1.62	128.0	435.2	
8650	Repaired fluid trough leak in baghouse.	D4	12/30/2023 08:00	12/30/2023 11:12	3.20	1.53	128.0	409.5	
3	Occurrences for Cause Code	8650 baghouse systems, general			TOTAL	9.65	4.61	384.0	1235.2
					AVERAGE	3.22	1.54	128.0	411.7
8651	Baghouse / Opacity issues.	D1	10/01/2023 08:45	10/01/2023 09:14	0.48	0.17	93.0	45.0	
8651	Baghouse / Opacity issues.	D1	10/01/2023 09:14	10/01/2023 10:07	0.88	0.44	133.0	117.4	
2	Occurrences for Cause Code	8651 bag failures and rebagging			TOTAL	1.36	0.61	226.0	162.4
					AVERAGE	0.68	0.30	113.0	81.2
5	Occurrences for System-Component	Pollution Control Equipment-Miscellaneous (Pollution Control Equipment)			TOTAL	11.01	5.22	610.0	1397.6
					AVERAGE	2.20	1.04	122.0	279.5

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 3

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
27	Occurrences for Unit:							
	<i>Spurlock 3</i>							
				TOTAL	1604.89	1116.74	2662.0	299283.3
				AVERAGE	59.44	41.36	98.6	11084.6

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
0	Reserve Shutdown	RS	02/20/2023 09:00	02/26/2023 22:19	157.32	0.00	0.0	0.0
0	Reserve Shutdown	RS	03/26/2023 14:44	03/27/2023 10:53	20.15	0.00	0.0	0.0
0	Reserve Shutdown	RS	08/12/2023 15:13	08/13/2023 04:00	12.78	0.00	0.0	0.0
3	Occurrences for Cause Code	<i>0 reserve shutdown</i>		TOTAL	190.25	0.00	0.0	0.0
				AVERAGE	63.42	0.00	0.0	0.0
3	Occurrences for System-Component	<i>External-Economic</i>		TOTAL	190.25	0.00	0.0	0.0
				AVERAGE	63.42	0.00	0.0	0.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
250	Feeder discharge plugged.	D1	03/07/2023 20:36	03/08/2023 08:22	11.77	3.64	83.0	976.6
250	Feeder discharge plugged.	D1	03/10/2023 04:40	03/10/2023 09:00	4.33	0.65	40.0	173.4
250	Feeder discharge plugged.	D1	03/10/2023 09:00	03/15/2023 09:42	119.70	39.30	88.0	10533.5
250	Feeder discharge plugged	D1	03/15/2023 09:42	03/16/2023 10:56	25.23	6.40	68.0	1715.7
250	Feeder discharge plugged.	D2	03/16/2023 10:56	03/16/2023 15:04	4.13	0.90	58.0	239.9
250	Replaced coal feeder cleanout conveyor bearing.	D4	07/11/2023 06:00	07/11/2023 09:26	3.43	0.51	40.0	137.2
250	Limestone feeder belt failed.	D1	07/31/2023 09:00	07/31/2023 12:58	3.97	1.15	78.0	309.3
250	Foreign debris in coal feeder.	D1	08/31/2023 14:31	08/31/2023 16:39	2.13	0.24	30.0	64.1
250	Replaced limestone feeder drive motor.	D4	10/01/2023 07:00	10/01/2023 10:50	3.83	0.43	30.0	115.0
250	Foreign debris in coal feeder.	D1	12/26/2023 13:58	12/26/2023 14:07	0.15	0.01	20.0	2.9
250	Foreign debris in coal feeder.	D1	12/26/2023 14:07	12/26/2023 15:54	1.78	0.20	30.0	53.6
11	Occurrences for Cause Code	250 pulverizer feeders		TOTAL	180.45	53.43	565.0	14321.2
				AVERAGE	16.40	4.86	51.4	1301.9
267	Lost primary air flow signal to the DCS.	D1	06/23/2023 15:36	06/23/2023 17:20	1.73	1.28	198.0	343.3
1	Occurrences for Cause Code	267 primary air flow instrumentation		TOTAL	1.73	1.28	198.0	343.3
				AVERAGE	1.73	1.28	198.0	343.3
310	Limestone mill PM's	D4	06/21/2023 07:00	06/21/2023 14:35	7.58	2.49	88.0	667.3
1	Occurrences for Cause Code	310 pulverizer mills		TOTAL	7.58	2.49	88.0	667.3
				AVERAGE	7.58	2.49	88.0	667.3
320	Limestone Mill floor bolts broken off.	D1	09/20/2023 13:26	09/20/2023 16:49	3.38	0.25	20.0	67.5

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
1	Occurrences for Cause Code								
	320 foreign object in pulverizers mill				TOTAL	3.38	0.25	20.0	67.5
					AVERAGE	3.38	0.25	20.0	67.5
340	Broken wind vanes and plows.	D1	04/10/2023 08:55	04/11/2023 16:56	32.02	5.14	43.0	1376.7	
1	Occurrences for Cause Code								
	340 other pulverizer problems				TOTAL	32.02	5.14	43.0	1376.7
					AVERAGE	32.02	5.14	43.0	1376.7
350	Coal feed transport piping to the combustor plugged, once cleared, large portion of fuel entered the combustor resulting in a furnace pressure excursion that caused a MFT.	U1	07/28/2023 23:28	07/29/2023 10:45	11.28	11.28	268.0	3023.8	
1	Occurrences for Cause Code								
	350 pulverized fuel and air piping (from pulverizer to wind box) (see code 0898 for pulverizer reje				TOTAL	11.28	11.28	268.0	3023.8
					AVERAGE	11.28	11.28	268.0	3023.8
16	Occurrences for System-Component								
	Boiler-Boiler Fuel Supply from Bunkers to Boiler				TOTAL	236.44	73.87	1182.0	19799.8
					AVERAGE	14.78	4.62	73.9	1237.5

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
894	Repair ash removal conveying system leak.	D4	04/28/2023 10:00	04/28/2023 12:07	2.12	0.70	88.0	186.3
894	Ash conveying system repairs.	D4	05/11/2023 11:00	05/11/2023 12:42	1.70	0.56	88.0	149.5
2	Occurrences for Cause Code	<i>894 bottom ash piping and valves</i>		TOTAL	3.82	1.26	176.0	335.8
				AVERAGE	1.91	0.63	88.0	167.9
2	Occurrences for System-Component	<i>Boiler-Slag and Ash Removal</i>		TOTAL	3.82	1.26	176.0	335.8
				AVERAGE	1.91	0.63	88.0	167.9

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
989	Broken bed nozzle(s) in combustor resulting in inadequate bed material in circulation.	MO	12/01/2023 01:37	12/08/2023 19:34	185.95	185.95	268.0	49834.6	
<i>1</i>	Occurrences for Cause Code				TOTAL	185.95	185.95	268.0	49834.6
					AVERAGE	185.95	185.95	268.0	49834.6
<i>1</i>	Occurrences for System-Component				TOTAL	185.95	185.95	268.0	49834.6
					AVERAGE	185.95	185.95	268.0	49834.6

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
1421	SA fan tripped due to loss of status signal to the running lube oil pump, while stand-by pump was out of service.	UI	11/12/2023 09:20	11/12/2023 11:50	2.50	2.50	268.0	670.0
1	Occurrences for Cause Code							
	1421 secondary air fans/blowers							
					TOTAL	2.50	268.0	670.0
					AVERAGE	2.50	268.0	670.0
1455	ID fan tripped due to high furnace pressure. Furnace pressure excursion occurred when baghouse compartment lid was reinstalled.	DI	09/01/2023 10:55	09/01/2023 13:18	2.38	1.49	168.0	400.4
1	Occurrences for Cause Code							
	1455 induced draft fans							
					TOTAL	2.38	168.0	400.4
					AVERAGE	2.38	168.0	400.4
1488	Elevated main drive motor amps.	DI	02/03/2023 09:08	02/03/2023 12:16	3.13	1.03	88.0	275.8
1488	Replace air heater gear box.	MO	08/10/2023 00:41	08/12/2023 15:13	62.53	62.53	268.0	16758.8
2	Occurrences for Cause Code							
	1488 air heater (regenerative)							
					TOTAL	65.66	356.0	17034.6
					AVERAGE	32.83	178.0	8517.3
1599	Furnace pressure excursion due to excess limestone mill air flow.	UI	11/05/2023 16:22	11/05/2023 17:14	0.87	0.87	268.0	232.4
1	Occurrences for Cause Code							
	1599 other miscellaneous boiler air and gas system problems							
					TOTAL	0.87	268.0	232.4
					AVERAGE	0.87	268.0	232.4
5	Occurrences for System-Component							
	Boiler-Boiler Air and Gas Systems							
					TOTAL	71.41	1060.0	18337.4
					AVERAGE	14.28	212.0	3667.5

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
1812	Annual planned outage (routine inspections and maintenance).	PO	10/07/2023 00:57	11/05/2023 02:29	698.53	698.53	268.0	187206.8
<i>1</i>	Occurrences for Cause Code							
	<i>1812 boiler inspections - scheduled or routine</i>							
				TOTAL	698.53	698.53	268.0	187206.8
				AVERAGE	698.53	698.53	268.0	187206.8
<i>1</i>	Occurrences for System-Component							
	<i>Boiler-Boiler Overhaul and Inspections</i>							
				TOTAL	698.53	698.53	268.0	187206.8
				AVERAGE	698.53	698.53	268.0	187206.8

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
3245	Power supply transformer to Cooling Tower faulted.	DI	06/05/2023 19:43	06/06/2023 16:19	20.60	4.84	63.0	1297.9
<hr/> 1	Occurrences for Cause Code				<hr/> TOTAL	<hr/> 4.84	<hr/> 63.0	<hr/> 1297.9
	3245 other cooling tower problems				AVERAGE	20.60	4.84	1297.9
<hr/> 1	Occurrences for System-Component				<hr/> TOTAL	<hr/> 4.84	<hr/> 63.0	<hr/> 1297.9
	Balance of Plant-Circulating Water Systems				AVERAGE	20.60	4.84	1297.9

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
3407	Repaired Boiler Feed Pump suction strainer drain valve.	D4	01/18/2023 07:00	01/18/2023 17:00	10.00	4.78	128.0	1280.0	
1	Occurrences for Cause Code				TOTAL	10.00	4.78	128.0	1280.0
					AVERAGE	10.00	4.78	128.0	1280.0
3409	Boiler Feed Pump Beck Drive Replacement	D4	07/19/2023 06:00	07/19/2023 09:10	3.17	1.54	130.0	411.6	
1	Occurrences for Cause Code				TOTAL	3.17	1.54	130.0	411.6
					AVERAGE	3.17	1.54	130.0	411.6
3414	Control board on the Beck drive failed.	D1	06/28/2023 10:45	06/28/2023 16:33	5.80	2.01	93.0	539.5	
3414	Control board on the Beck drive failed.	D1	06/28/2023 16:33	06/28/2023 16:50	0.28	0.02	18.0	5.1	
2	Occurrences for Cause Code				TOTAL	6.08	2.03	111.0	544.6
					AVERAGE	3.04	1.02	55.5	272.3
3415	Boiler feed pump lube oil piping leak.	D1	02/28/2023 22:08	03/01/2023 03:35	5.45	2.50	123.0	670.3	
3415	Inspect and repair lube oil piping.	D4	03/05/2023 07:00	03/05/2023 16:05	9.08	2.98	88.0	799.4	
2	Occurrences for Cause Code				TOTAL	14.53	5.48	211.0	1469.7
					AVERAGE	7.27	2.74	105.5	734.8
3454	Boiler Feed Booster Pump outboard bearing cooling fan blades sheared.	D1	01/05/2023 15:44	01/05/2023 16:12	0.47	0.28	163.0	76.1	
3454	Boiler Feed Booster Pump outboard bearing cooling fan blades sheared.	D1	01/05/2023 16:12	01/05/2023 18:32	2.33	1.16	133.0	310.3	
2	Occurrences for Cause Code				TOTAL	2.80	1.44	296.0	386.4
					AVERAGE	1.40	0.72	148.0	193.2
8	Occurrences for System-Component				TOTAL	36.58	15.27	876.0	4092.3
					AVERAGE	4.57	1.91	109.5	511.5

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
3661	4160V electrical breaker bound up in the cubical requiring a dead bus to safely repair. The Unit was taken off line to accommodate the dead bus requirement.	MO	03/26/2023 01:42	03/26/2023 14:44	13.03	13.03	268.0	3492.8	
<i>1</i>	Occurrences for Cause Code				TOTAL	13.03	13.03	268.0	3492.8
					AVERAGE	13.03	13.03	268.0	3492.8
<i>1</i>	Occurrences for System-Component				TOTAL	13.03	13.03	268.0	3492.8
					AVERAGE	13.03	13.03	268.0	3492.8

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
3979	Lost power to DCS client computers	UI	05/02/2023 08:06	05/02/2023 11:44	3.63	3.63	268.0	973.6	
1	Occurrences for Cause Code				TOTAL	3.63	3.63	268.0	973.6
					AVERAGE	3.63	3.63	268.0	973.6
1	Occurrences for System-Component				TOTAL	3.63	3.63	268.0	973.6
					AVERAGE	3.63	3.63	268.0	973.6

3979 other dcs problems

Balance of Plant-Miscellaneous (Balance of Plant)

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
4293	Hydraulic leak on turbine control valve piping/fitting.	DI	04/17/2023 04:43	04/18/2023 11:48	31.08	5.21	68.0	1395.2
4293	Hydraulic leak on turbine control valve piping/fitting.	MO	04/18/2023 01:14	04/18/2023 21:32	20.30	20.30	268.0	5440.4
2	Occurrences for Cause Code	<i>4293 hydraulic system pipes and valves</i>		TOTAL	51.38	25.51	336.0	6835.6
				AVERAGE	25.69	12.76	168.0	3417.8
2	Occurrences for System-Component	<i>Steam Turbine-Controls</i>		TOTAL	51.38	25.51	336.0	6835.6
				AVERAGE	25.69	12.76	168.0	3417.8

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
4520	Generator bushing hydrogen leak.	MO	02/11/2023 01:19	02/20/2023 09:00	223.68	223.68	268.0	59947.0
<i>1</i>	Occurrences for Cause Code	<i>4520 stator windings, bushings, and terminals</i>		TOTAL	223.68	223.68	268.0	59947.0
				AVERAGE	223.68	223.68	268.0	59947.0
<i>1</i>	Occurrences for System-Component	<i>Generator-Generator</i>		TOTAL	223.68	223.68	268.0	59947.0
				AVERAGE	223.68	223.68	268.0	59947.0

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
8650	Excess ash buildup in ash hoppers.	D1	11/06/2023 10:40	11/06/2023 11:37	0.95	0.07	20.0	19.0
8650	Excess ash buildup in ash hoppers.	D1	11/06/2023 11:37	11/06/2023 17:25	5.80	1.08	50.0	290.0
2	Occurrences for Cause Code	<i>8650 baghouse systems, general</i>		TOTAL	6.75	1.15	70.0	309.0
				AVERAGE	3.38	0.58	35.0	154.5
8651	Filter bag failed in baghouse compartment.	D1	04/01/2023 17:41	04/01/2023 17:52	0.18	0.06	83.0	15.3
1	Occurrences for Cause Code	<i>8651 bag failures and rebagging</i>		TOTAL	0.18	0.06	83.0	15.3
				AVERAGE	0.18	0.06	83.0	15.3
3	Occurrences for System-Component	<i>Pollution Control Equipment-Miscellaneous (Pollution Control Equipment)</i>		TOTAL	6.93	1.21	153.0	324.3
				AVERAGE	2.31	0.40	51.0	108.1

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)	
8802	Ammonia system PLC failed	DI	03/22/2023 10:24	03/22/2023 11:00	0.60	0.20	88.0	52.8	
<i>1</i>	Occurrences for Cause Code				TOTAL	0.60	0.20	88.0	52.8
					AVERAGE	0.60	0.20	88.0	52.8
<i>1</i>	Occurrences for System-Component				TOTAL	0.60	0.20	88.0	52.8
					AVERAGE	0.60	0.20	88.0	52.8

East Kentucky Power
Cause Code Summary Report
01/01/2023 To 12/31/2023 (Inc. OMC)

Spurlock 4

Cause Code	Description	Event Type	Start Date	End Date	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
46	Occurrences for Unit:							
	<i>Spurlock 4</i>							
				TOTAL	1742.83	1315.40	5274.0	352530.7
				AVERAGE	37.89	28.60	114.7	7663.7

Final Summary

Cause Code	Occurences	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
0	10	922.9	0	0	0
Cause: Reserve shutdown					
250	13	184.82	54.09	51.15	14496.12
Cause: Pulverizer feeders					
267	1	1.73	1.28	198	343.31
Cause: Primary air flow instrumentation					
300	1	4.88	.28	17	83.1
Cause: Pulverizer motors and drives					
310	1	7.58	2.49	88	667.32
Cause: Pulverizer mills					
320	4	22.1	2.83	32	757.64
Cause: Foreign object in Pulverizers mill					
340	1	32.02	5.14	43	1376.72
Cause: Other pulverizer problems					
344	4	22.97	5.68	72	1585.75
Cause: Pulverizer inspection					
350	1	11.28	11.28	268	3023.84
Cause: Pulverized fuel and air piping (from pulverizer to wind box) (see code 0898 for pulverizer reject system problems)					
855	3	12.07	5.39	146	2074.31
Cause: Drum relief/safety valves (single drum only)					
880	2	7.97	1.67	79	446.49
Cause: Fly Ash Removal System (not precipitators, scrubbers, mechanical collectors, or baghouses)					

Final Summary

Cause Code	Occurences	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
890	2	300.78	289.35	158	77544.73
Cause: Bottom ash systems (wet or dry)					
894	2	3.82	1.25	88	335.8
Cause: Bottom ash piping and valves					
931	1	3.17	1.51	128	405.22
Cause: Bed material transport piping/valves					
950	3	10.57	2.93	64.67	784.44
Cause: Other bed material system problems					
989	1	185.95	185.95	268	49834.6
Cause: Other bed solids recirculation problems					
1000	4	218.27	217.41	351.25	94077.06
Cause: Waterwall (Furnace wall)					
1350	1	113.67	113.67	510	57970.17
Cause: Other miscellaneous boiler tube problems					
1360	1	75.25	75.25	268	20167
Cause: Boiler drains system					
1401	3	23.55	4.04	61	1211.4
Cause: Forced draft fan dampers					
1421	1	2.5	2.5	268	670
Cause: Secondary air fans/blowers					
1455	3	122.73	121.68	277.67	61654.69

Final Summary

Cause Code	Occurences	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
Cause: Induced draft fans					
1456	3	179.15	123.8	130	37140
Cause: Induced draft fan dampers					
1488	6	224.78	215.67	156.83	62961.68
Cause: Air heater (regenerative)					
1599	1	.87	.87	268	232.36
Cause: Other miscellaneous boiler air and gas system problems					
1812	3	2235.98	2235.98	348.67	801741.06
Cause: Boiler Inspections - scheduled or routine					
3110	2	53.92	27.07	227.5	8120.7
Cause: Condenser tube leaks					
3211	1	5.02	.9	48	240.93
Cause: Circulating water pump motors					
3245	1	20.6	4.84	63	1297.92
Cause: Other cooling tower problems					
3407	1	10	4.78	128	1279.97
Cause: Feedwater pump suction screens					
3409	1	3.17	1.54	130	411.65
Cause: Feedwater pump drive motor - variable speed					
3411	1	67.05	29.52	118	7911.9
Cause: Feedwater pump drive - motor					

Final Summary

Cause Code	Occurences	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
3412	1	2.75	1.42	264	726.24
Cause: Feedwater pump drive - steam turbine					
3414	2	6.08	2.03	55.5	544.58
Cause: Feedwater pump local controls					
3415	2	14.53	5.48	105.5	1469.71
Cause: Feedwater pump/drive lube oil system					
3454	2	2.8	1.44	148	386.46
Cause: Feedwater booster pump					
3539	5	1517.23	252.87	50	75861.6
Cause: Other IP extraction steam system problems					
3661	2	181.03	181.03	389	89172.84
Cause: 4000-7000 volt circuit breakers					
3690	6	65.25	31.99	250	16312.35
Cause: Station Service Power Distribution System, General					
3979	1	3.63	3.63	268	973.64
Cause: Other DCS problems					
4250	3	18.98	7.96	93.33	2388
Cause: Other low pressure turbine problems					
4261	3	100.83	100.3	310	50429.4
Cause: Control valves					
4279	1	9.57	9.57	300	2870.1
Cause: Miscellaneous turbine piping					

Final Summary

Cause Code	Occurences	Duration (HOURS)	Duration (EQ HRS)	Reduction (AVG MW)	Loss (MWH)
4293	3	55.83	29.96	212	8170.61
Cause: Hydraulic system pipes and valves					
4309	1	.72	.37	155	111
Cause: Other turbine instrument and control problems					
4400	1	2074.28	2074.28	300	622284.9
Cause: Major turbine overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)					
4520	1	223.68	223.68	268	59947.04
Cause: Stator windings, bushings, and terminals					
8010	2	83.72	18.55	62.5	5565.9
Cause: Crushers/mills					
8650	5	16.4	5.76	90.8	1544.22
Cause: Baghouse systems, general					
8651	3	1.55	.66	103	177.68
Cause: Bag failures and rebagging					
8699	5	49.98	24.5	250	12495.51
Cause: Other miscellaneous pollution control equipment problems					
8802	1	.6	.2	88	52.8
Cause: SNCR NOx Control system					