

Management Review Preparation Information (example)

Purpose: To provide an example of detailed information compiled for management review that would be summarized further and visually enhanced for presentation to top management. These details would then be maintained as back-up information for the management representative in the event it was needed to answer questions from management during the review.

Current Energy Opportunities - 1/27/2016

Description of Opportunity	Opportunity Rating				
	Anticipated annual energy cost savings	Expected time required for implementation	Simple payback	EHS impact	Total Rating Score (x)
Reduce Boiler Blowdown	3	3	4	4	144
Add Dryer Economizer	3	1	2	3	18
Recover Heat from Boiler Blowdown	3	1	4	3	36
Use Synthetic Lubricants on Compressors	1	4	4	3	48
Replace 40W tubes with 36W energy efficient tubes in office area	1	3	4	3	36
Replace Motors with Premium Efficiency Motors Instead of Rewinding	2	1	2	3	12
Repair Compressed Air Leaks	1	3	3	3	27

Energy Review Data

Natural Gas Consumption and Cost						
		Consumption	Conversion Factor (Btu/CF)		Gas Cost	Total Cost
Start Date:	End Date:	(CCF)		MMBtu	(\$)	(\$)
12/21/2014	1/23/2015	64922	1,030	6,687	\$56,839	\$60,818
1/23/2015	2/24/2015	69589	1,030	7,168	\$60,925	\$65,190
2/24/2015	3/24/2015	74520	1,030	7,676	\$65,243	\$69,810
3/24/2015	4/23/2015	68777	1,030	7,084	\$60,215	\$64,430
4/23/2015	5/22/2015	69617	1,030	7,171	\$60,950	\$65,216
5/22/2015	6/23/2015	63654	1,030	6,556	\$55,729	\$59,630
6/23/2015	7/23/2015	63928	1,030	6,585	\$55,969	\$59,887
7/23/2015	8/22/2015	64365	1,030	6,630	\$56,351	\$60,296
8/22/2015	9/21/2015	60413	1,030	6,223	\$52,892	\$56,594
9/21/2015	10/22/2015	61134	1,030	6,297	\$53,523	\$57,270
10/22/2015	11/22/2015	59988	1,030	6,179	\$52,520	\$56,196
11/22/2015	12/21/2015	59531	1,030	6,132	\$52,120	\$55,768
Totals				80,385	\$683,275	\$731,105

Electricity						
Consumption and Cost						
			Billing	Electricity	Total	
		Consumption	Demand	Cost	Cost	
Start Date:	End Date:	kWh	kW	(\$)	(\$)	MMBtu
12/21/2014	1/23/2015	792247	700	\$67,341	\$72,055	2,704
1/23/2015	2/24/2015	729456	700	\$62,004	\$66,344	2,490
2/24/2015	3/24/2015	724921	700	\$61,618	\$65,932	2,474
3/24/2015	4/23/2015	722250	700	\$61,391	\$65,689	2,465
4/23/2015	5/22/2015	725675	700	\$61,682	\$66,000	2,477
5/22/2015	6/23/2015	775897	700	\$65,951	\$70,568	2,648
6/23/2015	7/23/2015	864007	700	\$73,441	\$78,581	2,949
7/23/2015	8/22/2015	882346	700	\$74,999	\$80,249	3,011
8/22/2015	9/21/2015	885884	700	\$75,300	\$80,571	3,024
9/21/2015	10/22/2015	838777	700	\$71,296	\$76,287	2,863
10/22/2015	11/22/2015	819952	700	\$69,696	\$74,575	2,798
11/22/2015	12/21/2015	812427	700	\$69,056	\$73,890	2,773
Totals		9,573,839		\$813,776	\$870,741	32,676

SEU Identification		
Energy uses exceeding	11,305	MMBtu
Energy Use	MMBtu	Plant %
Motors	17,725	17.28%
Dryer	22,400	21.83%
Boiler	20,329	19.81%

Boiler, Dryer and Facility Natural Gas Consumption		Natural Gas Consumption						Production Data
		Boiler Target	Boiler Actual	Dryer Target	Dryer Actual	Facility Target	Facility Actual	
Start Date:	End Date:	MMBtu	MMBtu	MMBtu	MMBtu	MMBtu	MMBtu	lbs.
12/21/14	1/23/15	3,371	3,506	2,842	2,862	5,613	6,238	609,995
1/23/15	2/24/15	3,440	3,604	2,900	3,043	5,963	6,647	636,200
2/24/15	3/24/15	3,635	3,752	3,064	3,245	6,391	6,997	650,330
3/24/15	4/23/15	3,532	3,719	2,977	3,023	6,023	6,742	657,521
4/23/15	5/22/15	3,339	3,525	2,815	3,160	5,953	6,685	674,675
5/22/15	6/23/15	3,108	3,205	2,620	2,812	5,447	6,017	663,600
6/23/15	7/23/15	2,875	2,935	2,424	2,756	5,480	5,994	625,322
7/23/15	8/22/15	3,012	3,391	2,539	3,059	5,525	6,820	773,329
8/22/15	9/21/15	3,245	3,360	2,736	3,126	5,565	6,756	758,885
9/21/15	10/22/15	3,543	3,728	2,987	3,245	5,735	6,895	759,679
10/22/15	11/22/15	3,616	4,130	3,046	3,332	5,952	7,197	749,291
11/22/15	12/21/15	3,702	4,345	3,120	3,522	6,029	7,397	752,393

2015 Totals	40,418	43,200	34,069	37,185	69,674	80,385	8,311,220
2015 Averages	3,368	3,600	2,839	3,099	5,806	6,699	692,602

Boiler, Dryer and Facility EnPIs		Energy Performance Indicator					
		Boiler Target	Boiler Actual	Dryer Target	Dryer Actual	Facility Target	Facility Actual
Start Date:	End Date:	Btu/lb	Btu/lb	MMBtu	MMBtu	Btu/lb	Btu/lb
12/21/14	1/23/15	5,243	5,748	4,420	4,692	8,730	10,226
1/23/15	2/24/15	5,350	5,665	4,510	4,783	9,274	10,448
2/24/15	3/24/15	5,654	5,769	4,766	4,990	9,940	10,759
3/24/15	4/23/15	5,493	5,656	4,631	4,598	9,367	10,254
4/23/15	5/22/15	5,193	5,225	4,378	4,684	9,259	9,908
5/22/15	6/23/15	4,834	4,830	4,075	4,237	8,472	9,067
6/23/15	7/23/15	4,472	4,694	3,770	4,407	8,523	9,585
7/23/15	8/22/15	4,685	4,385	3,949	3,956	8,593	8,819
8/22/15	9/21/15	5,047	4,428	4,255	4,119	8,656	8,903
9/21/15	10/22/15	5,511	4,907	4,645	4,272	8,919	9,076
10/22/15	11/22/15	5,624	5,512	4,738	4,447	9,257	9,605
11/22/15	12/21/15	5,758	5,775	4,853	4,681	9,377	9,831
2015 Averages		5,239	5,216	4,416	4,489	9,031	9,707

		SEU Current Energy Performance		
SEU	Relevant Variables	Current Energy Performance	Evaluation Date	Evaluation Basis
Motors	Voltage, Washer load	55% Average Load	1/15/16	Engineering estimate - Weekly motor amperage measurement
Dryer	Inside air temperature, air/fuel ratio, material moisture content	80% Efficient	12/30/15	Stack gas analysis
Boiler	Air/fuel ratio, feed water temperature, production	75% Efficient	12/30/15	Stack gas analysis

Future Estimates January - March 2016					
		Future Energy Use		Future Energy Consumption	
SEU	Use	Estimate Basis	Consumption	Estimate Basis	
Motors	Continue to use electric motors	No change in production methods	Increase to 6,126,614 kWh/yr. Facility increase to 11,297,660 kWh and \$1,027,222/yr	18% increased production in last half of the year due to increased sales	
Dryer	Continue to use gas dryer	No change in production methods	Increase to 43,880 MMBtu/yr. Facility increase to 94,859 MMBtu and \$806,303/yr	18% increased production in last half of the year due to increased sales	
Boiler	Continue to use steam boiler	No change in production methods	Increase to 50,978 MMBtu/yr. Facility increase to 94,859 MMBtu and \$806,303/yr	18% increased production in last half of the year due to increased sales	

Corrective/Preventive Actions

Finding: Failure to meet stated objective and targets

Source: Energy review of 1/14/16

Action: Engineering analyzed data and determined that weather conditions (temperature) have a significant impact on energy consumption. Also the last half of 2015 saw a large increase in production attributing to an increase in energy consumption.

Status: Energy performance indicators to be modified to account for temperature changes.

Finding: Two out of date process control documents were being used on line #2

Source: Internal audit of 12/19/15 finding number 101219-1 and 101219-2

Action: Current versions of the documents were obtained, placed in appropriate floor locations and old documents were destroyed

Status: Corrective action has been completed.

Finding: Dryer was not being loaded according to operational procedure

Source: Internal audit of 12/19/15 finding number 101219-3

Status: A new employee on the line had not received complete training and was incorrectly loading the dryer.

Action: Employee has undergone training, his technique has been reviewed by his supervisor and he is now performing the operation according to procedure. New employee checklist modified to include all details of required training for dryer operations. Corrective action has been completed.

Legal and other requirements compliance evaluation-Evaluations of compliance with all legal requirements were conducted during 3rd quarter 2015. There were no negative findings. There have been no changes in legal requirements or other energy requirements subscribe to. Maintenance Manager is monitoring County consideration of outdoor lighting proposed ordinance.

Legal and Other Requirements – Identification, Responsibility and Tracking Matrix						
(1) Title of Legal or Other Requirement (include legal citation or reference, if applicable)	(2) Type of Requirement Legal = L Other = O	(3) Permit Number/ Issue Date (if applicable)	(4) Applies To: (List Affected Operations)	(5) Required Reports/ Report Due Dates	(6) Responsible Position	(7) Review Frequency
Greenhouse Gas Emissions Reporting (40 CFR 86, 87, 89)	L	N/A	Entire facility	Annual report due March 31	Energy Manager	Quarterly
Air Permit Emission Limits for Boilers, Generators, Diesel Air Compressors	L	45726	Boilers, Generators	Quarterly reporting of air emissions	Environmental Manager	Quarterly
State Boiler and Unfired Pressure Vessel Inspection Law, Rules and Regulations (Title 68, Chapter 122)	L	N/A	Boilers	Annual boiler inspection	Energy Manager	Quarterly
City Fuel Guidelines due to Nonattainment	L	N/A	Generators	Annual reporting	Energy Manager	Quarterly
Monthly Natural Gas Load Forecast	O	N/A	Entire facility	Submit to City 5 days before the end of each month	Energy Manager	Quarterly
Better Buildings, Better Plants Challenge Partner	O	N/A	Entire facility	Designate BBBP energy manager; Determine BBBP baseline; Develop energy management plan; Report energy intensity improvement annually by March 31.	Energy Manager	Quarterly
ENERGY STAR Plant Labeling	O	N/A	Entire facility	Annually by March 31 submit the Statement of Energy Performance,	Energy Manager	Quarterly

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				Safe lighting levels, and assessment of facility’s environmental record.		
Corporate Energy Performance Improvement Requirements	O	N/A	Entire facility	Quarterly submission of energy consumption and energy intensity improvement	Energy Manager	Quarterly