

ID	W. O. #	Task	Duration	Predc	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
1		Canada Pulp and Paper Limited	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
2		Pulp Division	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
3		Power and Recovery Area	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
4												
5		May 2015 Shutdown Model	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
6		Version 3.0 Beta by T. Kingston	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
7												
8		Legend	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
9		This colour indicates a safety task	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
10		This colour indicates a value added task routine to most shutdowns	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
11		This colour indicates a value added task specific to May 2000 shutdown only	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
12		This colour indicates an enabling task (to do a red or blue task)	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
13												
14		A red Gantt chart bar (see right).....	24 h			\$0	2000		May 5, 2015 3:00 AM	May 6, 2015 3:00 AM	\$0	
15		indicates a critical path task. Lengthening or shortening the time it takes	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
16		to complete a critical path task will likely lengthen or shorten the overall	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
17		shutdown time from liquor to liquor.	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
18												
19		Power and Recovery	8.71 days			\$0			May 5, 2015 3:00 AM	May 13, 2015 8:00 PM	\$2,752,383	
20												
21		Two Months Before Shutdown	0 days			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
22												
23		Notify WCB of shutdown	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
24		Coordinate camp setup for contractors	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
25		Coordinate hatchwatchers schedule	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
26		Coordinate gas testers schedule	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
27		Coordinate operator schedule	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
28		Analyse oil in large reservoirs	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
29		Ensure all blanks are on hand	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
30	087940	Identify new gasket requirements (ducon scrubber 66-1192)	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
31		Get copies of CSE and lockouts for P&R	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
32	087860	Confirm adequate supply of chains, locks, and clips	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
33		Publish contractors' cell phone numbers	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
34		Schedule meeting rooms and meeting times	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
35		Identify rental radio needs	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
36		Ensure adequate inventory of PB floor grates	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
37		Coordinate liquor inventories prior to shutdown	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
38		Determine vacuum truck and steam cleaner schedule	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
39		Determine nature of cleaning (water, steam, vacuum, etc.)	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
40		Complete all liason, excavation, cutting&welding forms	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
41	081857	Order cranes	0 h		ME	\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
42	087819	Identify transformers requiring cleaning	0 h		EE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
43	087825	Inspect MCC and PDC hot spots	0 h		EE,EL	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
44	089535	Perform a vibration analysis on TG	0 h		ME,SC	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
45		Determine power, air, water, and sewer outages	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
46		Rent portable generators as required	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
47		Rent portable air compressors as required	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	

ID	W. O. #	Task	Duration	Pred	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nf
48												
49		One Week Before Shutdown	0 days			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
50												
51		Indoctrinate all contractors	0 h		ME	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
52	089424	Set up HP line to secondary multiclone nozzles	0 h		OP,PF	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
53	072397	Backup operator interfaces	0 h			\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
54	089426	Inspect sootblower packing	0 h		PF	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
55	087963	Trevi-test all safety valves	0 h		SC	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
56	087887	Ensure cleaning hoses and lances are in place	0 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
57		Clean sewers under evaps	0 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
58		Relocate scaffolding to work areas	0 h		ST,CA,MW,WI	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
59		Erect scaffolding where allowable	0 h		ST,CA,MW,WI	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
60		Relocate replacement parts to local area	0 h		CA,MW,WE,PI	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
61		Empty dump pond prior to waterwash	0 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
62		Monitor acid sewer pH during shutdown period	0 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
63	089536	Connect power to contractor trailers	0 h		EE,EL	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
64	081519	Install contractor trailers and washrooms	0 h		SC,GC,ME	\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
65	081572	Deliver contractor welding gases to storage area	0 h		ME	\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
66	081842	Coordinate bus schedule, camp to mill	0 h		ME	\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
67	088065	Install scaffolding to provide access to three TG safety valves	0 h		CA	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
68		Identify all steam leaks to be repaired with red paint in field	0 h		PF	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
69	087862	Service elevators two weeks before shutdown	0 h		EE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
70												
71		12 Hours Before Shutdown	0 days			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
72												
73		Divert sesqui to seal tank #15	0 h		N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
74		Purge sesqui line to WB tanks	0 h		N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
75		Close & lock sesqui valve to WB tanks	0 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
76		Adjust liquor inventories	0 h		N1,SE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
77		Service and monitor elevators during shutdown	0 h		EE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
78												

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79		Recovery Boiler	8.71 days			\$0			May 5, 2015 3:00 AM	May 13, 2015 8:00 PM	\$854,637	
80		Stop feeding liquor	0 h		N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
81		Clean (air lance) economizer outlet turning vane	4 h	80	OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 7:00 AM	\$0	
82		Clean RC precipitator inlet turning vanes	2 h	80	OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 5:00 AM	\$0	
83		Flush liquor lines & IBLH with water	4 h	80	N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 7:00 AM	\$0	
84		Burn bed out completely	4 h	80	N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 7:00 AM	\$0	
85	087863	Overhaul isolation gates from refractometer LCS	6 h	83	IM	\$500	2000		May 5, 2015 7:00 AM	May 5, 2015 1:00 PM	\$770	
86	079122	Rotate spectacle blind on dissolving tank drain to open	1 h	84	PF[200%]	\$0	2000NWO		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$90	
87		Stop burning gas and pull gas burners out when steam load allows	2 h	84	OP	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 9:00 AM	\$0	
88	087870	Remove ignitors and bed cameras	1 h	87	EL	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$45	
89		Lockout for blanking, RB natural gas system	2 h	88	SE,OP	\$0	2000		May 5, 2015 10:00 AM	May 5, 2015 12:00 PM	\$0	
90	087867	Install blanks, RB natural gas system	2 h	89	OP,PF,SE	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 2:00 PM	\$90	
91	080216	Remove boiler insulation and do external repairs	72 h	87	GC[600%]	\$40,000	2000		May 5, 2015 9:00 AM	May 8, 2015 9:00 AM	\$81,040	
92		Open main door and remove brick	6 h	87	GC[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 3:00 PM	\$1,140	
93		Start precipitator bypass fan	1 h	87	OP	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
94		Depressurize boiler and air cool to < 200F	8 h	87	N1	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 5:00 PM	\$0	
95	087878	Open all mandooors, including economizer, penthouse, and vestibule	2 h	94	MW	\$0	2000		May 5, 2015 5:00 PM	May 5, 2015 7:00 PM	\$90	
96		Shutdown FD fan	1 h	94	N1	\$0	2000		May 5, 2015 5:00 PM	May 5, 2015 6:00 PM	\$0	
97		Close main and intermediate stop valves	1 h	87	OP[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
98		Isolate and lockout 80/165 psi steam to SCAH	1 h	87	OP[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
99		Blowdown waterwalls/mud drum at 600 psi	1 h	87	OP	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
100	079186	Test ESP test per checklist	2 h	87	OP[200%],EL,;	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$90	
101		Test fan trips per checklist	4 h	100	OP	\$0	2000		May 5, 2015 11:00 AM	May 5, 2015 3:00 PM	\$0	
102		Test low water trip on recovery boiler	1 h	101	OP	\$0	2000		May 5, 2015 3:00 PM	May 5, 2015 4:00 PM	\$0	
103		Isolate and lockout steam to sootblowers	1 h	87	OP	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
104		Lockout to install waterwash spoolpiece	1 h	103	OP	\$0	2000		May 5, 2015 10:00 AM	May 5, 2015 11:00 AM	\$0	
105	087875	Install waterwash spoolpiece	2 h	104	OP,PF	\$0	2000		May 5, 2015 11:00 AM	May 5, 2015 1:00 PM	\$90	
106	087873	Remove O2 probe and gas burner scanner	1 h	87	IM	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$45	
107		Close inlet dampers to the east flakt and west flakt precipitators	2 h	84	OP[200%]	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 9:00 AM	\$0	
108		Water wash boiler and economizer	12 h	07,88	N1,OP[400%]	\$0	2000		May 5, 2015 5:00 PM	May 6, 2015 5:00 AM	\$0	
109	087930	Open precipitator bypass dampers on top of boiler	2 h	08FF	OP[200%]	\$0	2000		May 6, 2015 3:00 AM	May 6, 2015 5:00 AM	\$0	
110		Monitor dump pond and pump out as required during waterwash	18 h	08FF	OP	\$0	2000		May 5, 2015 11:00 AM	May 6, 2015 5:00 AM	\$0	
111		Flush IBLH with hot water until clear	12 h	08FF	N1,OP	\$0	2000		May 5, 2015 5:00 PM	May 6, 2015 5:00 AM	\$0	
112		Visually inspect boiler casing for leaks	2 h	08FF	GC[200%]	\$0	2000		May 6, 2015 3:00 AM	May 6, 2015 5:00 AM	\$380	
113	087894	Monitor/Maintain sootblowers during water wash	12 h	08SS	MW,EL	\$0	2000		May 5, 2015 5:00 PM	May 6, 2015 5:00 AM	\$1,080	
114	087874	Remove waterwash spoolpiece	2 h	108	OP,PF	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 7:00 AM	\$90	
115		Inspect precipitator inlet dampers and remove saltcake	1 h	108	GC[200%],OP	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$190	
116		Open drum vent and drain boiler	4 h	108	OP	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 9:00 AM	\$0	
117		Complete water side CSE and lockout	2 h	116	SE,OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
118		Gas test and hatchwatch RB waterside	24 h	117	GT	\$1,000	2000		May 6, 2015 11:00 AM	May 7, 2015 11:00 AM	\$2,488	
119	087869	Open upper and lower drum manhole covers, both sides	2 h	116	PF,OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$90	
120		Insert downcomer covers	1 h	117	OP	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$0	
121		Inspect steam drum internals	4 h	120	ME,CH	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 4:00 PM	\$0	
122		Clean (wet/dry vac) steam drum	4 h	121	OP	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$0	
123		NDT inspect steam drum including accuScan for near drum corrosion	12 h	122	ND,CH	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$960	
124	074151	Repair/replace 80 psi safety valve (currently gagged)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
125	043219	Replace west blow down valve on bottom header of RB (valve is tagged)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	

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126	077655	Inspect/repair/replace top isolation valve east, RB drum level system	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
127	075864	Repair leaking flange at blow down tank from RB	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
128	073762	Repack the RB feedwater stop valve (3rd floor)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
129	081853	Repack the RB auto feedwater valve	0 h	117		\$0	0		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
130	070540	Repair/replace the atmospheric rotork valve on 9th floor (leaks by)	0 h	117		\$0	0		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
131	070480	Replace the orifice plate in the main RB steam line (9th floor)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
132	073544	Inspect inside the 625 psi steam line check valve by TG	12 h	117	GC[200%],ST[	\$200	2000		May 6, 2015 11:00 AM	May 6, 2015 11:00 PM	\$4,520	
133	074030	Replace the RB warmup valve at RB intermediate stop valve (6th floor)	0 h	117		\$0	0		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
134	063051	Repair leaks at gland and body of warmup valve, 625 psi to 625/80 psi PRV (5th floor)	12 h	117	GC[200%],ND	\$5,000	2000		May 6, 2015 11:00 AM	May 6, 2015 11:00 PM	\$8,240	
135	071384	Repair steam leak on warmup valve 625 to 165 psi PRV (5th floor)	24 h	117	GC[200%],ST[	\$5,000	2000		May 6, 2015 11:00 AM	May 7, 2015 11:00 AM	\$13,640	
136	077363	Replace drum controller	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
137	080902	Remove, overhaul, and replace RB superheater outlet safety valve	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
138	080904	Remove, overhaul, replace east TG 80 psi safety valve	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
139	075168	Replace nipple and valve on feedwater chemical injection line; re-pipe SO3 and PO4; i	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
140	081847	Repack valves per list (see work order)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
141	084494	Repair RB mud drum drain line (5th flr)	0 h	117		\$0	2000NWO		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
142	086170	Repair condensate leak near #1 anion; replace valve	4 h	117	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 3:00 PM	\$180	
143	086771	Repair steam leak on demin pump turbine (SEE WORK ORDER)	4 h	117	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 3:00 PM	\$180	
144	043756	Replace sootblower piping	96 h	117	GC[800%]	\$30,000	2000		May 6, 2015 11:00 AM	May 10, 2015 11:00 AM	\$102,960	
145	087705	Install PRV's on east and west sootblower lines (SEE WORK ORDER)	24 h	117	IM,GC[200%],I	\$8,000	2000		May 6, 2015 11:00 AM	May 7, 2015 11:00 AM	\$13,640	
146	086774	Repair steam leak on manual isolation valve bonnet for #2 deaerator	4 h	117	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 3:00 PM	\$180	
147		Complete fire side CSE and lockout	2 h	18,90	SE,OP	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 7:00 AM	\$0	
148		Visually inspect boiler internals before entering	1 h	147	GC,N1,ME,SE	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 8:00 AM	\$95	
149		Gas test and hatchwatch RB fireside	72 h	148	GT	\$1,000	2000		May 6, 2015 8:00 AM	May 9, 2015 8:00 AM	\$5,464	
150	089582	Install scaffold and temporary lighting in recovery boiler furnace	12 h	148	ST[1,400%]	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 8:00 PM	\$14,280	
151	087899	Open SCAH mandoor	1 h	147	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 8:00 AM	\$45	
152	089429	Open door at base of stack (Use caution, inspect overhead debris)	1 h	147	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 8:00 AM	\$45	
153		Clean primary air ducts	8 h	147	OP	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$0	
154		Clean (steam) inside SCAH	0 h	147		\$0	0		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
155	087898	Inspect SCAH internals, including tube thickness	8 h	154	ND[200%]	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$1,280	
156	087897	Close SCAH mandoor and install new gasket	1 h	155	MW	\$20	2000		May 6, 2015 3:00 PM	May 6, 2015 4:00 PM	\$65	
157	087917	Inspect & lubricate FD fan louvres, verify full stroke	1 h	147	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 8:00 AM	\$45	
158		Gas test and hatchwatch bullnose	12 h	4,147	GT	\$1,000	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 PM	\$1,744	
159	080585	Clean and inspect bullnose area	12 h	4,147	OP,GC[200%]	\$0	2000NWO		May 6, 2015 7:00 AM	May 6, 2015 7:00 PM	\$2,280	
160		Gas test and hatchwatch penthouse	12 h	4,147	GT	\$1,000	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 PM	\$1,744	
161	087876	Clean (vacuum) and inspect penthouse area	12 h	4,147	OP,GC,CL[200	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 PM	\$3,180	
162		Gas test stack	0 h	4,147	GT	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
163	072335	Vacuum base of stack	0 h	162		\$0	2000NWO		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
164	072336	Inspect stack	0 h	163		\$0	2000NWO		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
165	089434	Close door at base of stack	2 h	164	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 9:00 AM	\$90	
166	087884	NDT inspect and repair boiler and economizer to include:	106 h	7,150	ND[800%],GC[	\$50,000	2000		May 6, 2015 8:00 PM	May 11, 2015 6:00 AM	\$238,680	
167		UT front and rear waterwall	48 h	147	ND	\$0	2000		May 6, 2015 7:00 AM	May 8, 2015 7:00 AM	\$3,840	
168	087859	Inspect expansion joints	8 h	147	GC	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$760	
169	087889	Inspect all ducts & windboxes	8 h	147	GC	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$760	
170		Inspect superheaters	8 h	150	GC,ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$1,400	
171		Inspect economizer	8 h	147	GC,ND	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$1,400	
172		Inspect furnace floor tubes (take a sample)	8 h	150	GC,ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$1,400	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utput	Earliest Start	Earliest Finish	Cost	nr
173	087896	Inspect gas burner ignitors and scanners	8 h	150	EL	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
174		Inspect lower vestibule	8 h	147	GC	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$760	
175		Inspect bullnose tubes and fins	8 h	147	GC,ND	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 3:00 PM	\$1,400	
176		Inspect dog house (replace spout cooling water hose)	8 h	150	GC	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$760	
177		Replace furnace refractories	0 h	150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
178		Inspect penthouse roof seals	8 h	150	GC	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$760	
179		Inspect primary air ports, castings, and windboxes	8 h	150	GC	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$760	
180		Inspect primary, secondary, and tertiary air ports and liquor ports	8 h	150	GC,ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$1,400	
181		Inspect chemical ash hoppers and repair economizer main baffle	8 h	150	GC,ST[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$2,120	
182		Inspect main access door	0 h	150		\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
183		Inspect sootblowers and wallboxes	8 h	150	GC,ND,ST[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$2,760	
184	075083	Inspect all doors and dampers	0 h	150		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
185	047120	Inspect the thermocouples on RB superheaters and floor tubes	0 h	7,150		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
186	067847	Install tertiary air fan system on RB, Phase I only	0 h	147		\$0	0		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
187	073457	Replace expansion joints in secondary air duct, 1st flr, both sides	0 h	147		\$0	1		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
188	076232	Clean (high pressure) west RB mud drum blow line (currently plugged)	0 h	117		\$0	1		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
189	076508	Repair boiler casing leaks at the turning vane, west side worse than east	0 h	147		\$0	1		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
190	079575	Stroke check all de-sup valves, 80 and 165 psi at TG, 2 @ 80 psi PRV, 1 @ 165 psi PRV	6 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 2:00 AM	\$270	
191	079574	Calibrate level control and transmitter for SMT and PMT	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
192	087849	Rebuild black liquor flow control valve	14 h	7,150	PF,IM[67%],S1	\$500	2000		May 6, 2015 8:00 PM	May 7, 2015 10:00 AM	\$3,932	
193	079572	Calibrate TG actuator oil switches	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
194	079571	Calibrate TG 80 and 165 psi transmitters	4 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
195	087850	Blow down all transmitters on 625 psi steam system	6 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 2:00 AM	\$270	
196	087851	Stroke check the four control valves on the liquor divert system	4 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
197	088060	Stroke check the feedwater control valves on RB	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
198	087861	Stroke check all evaporator control valves	8 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
199	080067	Perform annual maintenance on TRS monitor per manufacturer's spec	24 h	7,150	SC	\$0	2000NWO		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$3,000	
200	087893	Calibrate RB drum level transmitter; check the trips	4 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
201	080083	Stroke check gas valves to RB (Main gas valve and pilot gas valve)	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
202	087853	Inspect mag tube on liquor flow to burners	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
203	080529	Replace sesqui injector and section of 10" pipe (2nd flr recovery)	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
204	079676	Repair RB feedwater flow sensing line leak near transmitter 66-050	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
205	080184	Remove, calibrate (send out), and reinstall RB air flow meters	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
206	088688	Stroke check RB damper drives (pri air, sec air, ID fans, FD fans, sec boost fan)	8 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
207	087856	Calibrate all switches on RB ID and FD fans	6 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 2:00 AM	\$270	
208	087846	Calibrate all pneumatic chart recorders in P&R control room	40 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 8, 2015 12:00 PM	\$1,800	
209	079988	Replace gates on LSC meters	24 h	7,150	IM	\$0	2000NWO		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$1,080	
210	087852	Replace felt filters for P&R Inst. Elec. Control panels	12 h	7,150	IM	\$500	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$1,040	
211	070065	Change glasses in the primary and secondary ports	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
212	035649	Remove obsolete 6" 80 psi line from weir pumps, 1st to 3rd floor	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
213	075350	Verify Control Room FD and ID fan trip buttons	4 h	7,150	EL	\$0	2000NWO		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
214	081112	Replace 625 psi isolation valve at M&D thermocompressor and gasket on mixing valve	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
215	078990	Replace gasket on mixing valve at M&D thermocompressor	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
216	082728	Repair steam flow meter	8 h	7,150	IM[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$720	
217	087397	Repair/Replace furnace inspection door on 8th floor, north furnace face, west side	12 h	7,150	MW	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$540	
218	083333	Repair/replace 4th flr econo recirc bypass valve (leaks by)	8 h	7,150	GC[200%]	\$2,000	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$3,520	
219	089539	Repair sagging spacer tube on middle superheater elements	24 h	7,150	GC[200%]	\$2,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$6,560	
220	089540	Repair right wall wind box floor	24 h	7,150	GC[200%]	\$40,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$44,560	
221	089541	Remove tube samples of from screen tube pass	36 h	7,150	GC[300%],ND	\$2,000	2000		May 6, 2015 8:00 PM	May 8, 2015 8:00 AM	\$15,140	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nf
222	089542	Remove tube samples from the 1 or 2 deg zone in furnace	24 h	7,150	GC[300%],ND	\$2,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$10,760	
223		Repair/modify gas burners	0 h	7,150		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
224	089543	Install steam flow meters	72 h	7,150	GC[600%],SC|	\$100,000	2000		May 6, 2015 8:00 PM	May 9, 2015 8:00 PM	\$206,560	
225		Flow scan P&R control valves	0 h	7,150		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
226	088586	Correct ESP deficiency - remote start black hopper flush pump	2 h	7,150	EL	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
227	088587	Correct ESP deficiency - remote start #1 black liquor burner pump	2 h	7,150	EL	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
228	088588	Correct ESP deficiency - remote start #2 black liquor burner pump	2 h	7,150	EL	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
229	088589	Correct ESP deficiency - remote start IBLH steam supply	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
230	088591	Correct ESP deficiency - remote operation and stayed in open position, sec air damper	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
231	088593	Correct ESP deficiency - damper did not go fully open- tert air damper	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
232	088594	Correct ESP deficiency - visibility of 80# steam valve to SCAH	0 h	7,150		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
233	088596	Repair/replace RB feed stop rotork valve	8 h	7,150	PF	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
234	088620	Remove and repair ESP rotork valve (3rd floor)	0 h	7,150		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
235	088860	Repair furnace leak near #14 IK	4 h	7,150	MW	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
236	087932	Stroke check the LCV and steam flow control valve at the spout cooling water head tar	2 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
237	088943	Repair leaking tertiary air duct north side, east corner	12 h	7,150	CA,WE[50%],L	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$1,350	
238	082456	Repair RB steam flow meter temperature element	24 h	7,150	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$1,080	
239	086969	Relocate (raise) #3 and #4 gas valve assemblies (SEE OPERATORS!!)	48 h	7,150	SC,PF	\$0	2000		May 6, 2015 8:00 PM	May 8, 2015 8:00 PM	\$8,160	
240	087561	Repack both westdie isolation valves on 625# line, 6th and 8th floor	8 h	7,150	PF	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
241	088322	Repair crack in forced draft duct 5th floor	4 h	7,150	GC[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$760	
242		Make demineralized water	1 h	3,828	N1	\$0	2000		May 11, 2015 6:00 AM	May 11, 2015 7:00 AM	\$0	
243	087868	Install drum manhole covers with new gaskets, both drums, both sides	2 h	66FF	PF,OP	\$0	2000		May 11, 2015 4:00 AM	May 11, 2015 6:00 AM	\$90	
244		Undo water side CSE for hydro test	2 h	3,243	OP,SE	\$0	2000		May 11, 2015 6:00 AM	May 11, 2015 8:00 AM	\$0	
245		Fill Boiler with demineralized water	4 h	4,242	N1	\$0	2000		May 11, 2015 8:00 AM	May 11, 2015 12:00 PM	\$0	
246		Hydrostatic test and repair	8 h	245	GC	\$1,000	2000		May 11, 2015 12:00 PM	May 11, 2015 8:00 PM	\$1,760	
247	089583	Remove scaffolding and temporary lighting from RB furnace	6 h	246	ST[1,200%]	\$0	2000		May 11, 2015 8:00 PM	May 12, 2015 2:00 AM	\$6,120	
248	087877	Close all mandos incl penthouse, economizer, and vestibule	2 h	47FF	MW	\$0	2000		May 12, 2015 12:00 AM	May 12, 2015 2:00 AM	\$90	
249	087888	Install new floor refractory	8 h	247	GC[400%]	\$5,000	2000		May 12, 2015 2:00 AM	May 12, 2015 10:00 AM	\$8,040	
250	087883	Re-brick main door	4 h	249	GC[200%]	\$1,000	2000		May 12, 2015 10:00 AM	May 12, 2015 2:00 PM	\$1,760	
251	087931	Close the three slides dampers on the precipitator bypass fan	2 h	50FF	MW	\$0	2000		May 12, 2015 12:00 PM	May 12, 2015 2:00 PM	\$90	
252		Undo fire side CSE and lockout	4 h	251	OP,SE	\$0	2000		May 12, 2015 2:00 PM	May 12, 2015 6:00 PM	\$0	
253	087866	Remove natural gas blinds, to burners and to ign	2 h	3,365	PF,OP	\$0	2000		May 12, 2015 4:00 PM	May 12, 2015 6:00 PM	\$90	
254	087872	Install RB O2 probe and gas burner scanner	1 h	252	IM	\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 7:00 PM	\$45	
255	087871	Install ignitors and bed cameras	1 h	252	EL	\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 7:00 PM	\$45	
256		Ignite RB gas burners and warm boiler	10 h	3,400	N1	\$0	2000		May 13, 2015 2:00 AM	May 13, 2015 12:00 PM	\$0	
257		Circulate liquor	4 h	1,043	N1	\$0	2000		May 13, 2015 12:00 PM	May 13, 2015 4:00 PM	\$0	
258		Feed liquor to RB	4 h	257	N1	\$0	2000		May 13, 2015 4:00 PM	May 13, 2015 8:00 PM	\$0	
259												
260		RC Precipitator	2.5 days			\$0			May 6, 2015 5:00 AM	May 8, 2015 5:00 PM	\$46,016	
261		Stop Precipitator operation	2 h	108	N1	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 7:00 AM	\$0	
262		Lockout RCP precipitator	4 h	261	OP,SE	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 11:00 AM	\$0	
263		Complete RC precipitator CSE and lockout	2 h	262	OP,SE	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 1:00 PM	\$0	
264		Gas test and hatchwatch RC precipitator	48 h	263	GT	\$1,000	2000		May 6, 2015 1:00 PM	May 8, 2015 1:00 PM	\$3,976	
265		Clean (air lance) RCP internals	12 h	263	OP	\$0	2000		May 6, 2015 1:00 PM	May 7, 2015 1:00 AM	\$0	
266		Vacuum penthouse compartment	8 h	263	OP	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$0	
267	087976	Inspect all precipitator parts to include:	48 h	263	GC[300%]	\$20,000	2000		May 6, 2015 1:00 PM	May 8, 2015 1:00 PM	\$33,680	
268		Inspect bearings on rotary feeders	8 h	263	GC	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$760	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
269		Inspect insulators	8 h	263	GC	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$760	
270	089569	Repair cracked distribution screens	6 h	263	GC[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 7:00 PM	\$1,140	
271	089570	Realign emitting and collecting rappers	6 h	263	GC[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 7:00 PM	\$1,140	
272	089571	Reconnect broken or missing rapper ground cables	6 h	263	GC[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 7:00 PM	\$1,140	
273	089572	Straighten cross conveyor flights	8 h	263	GC[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$1,520	
274	089573	Inspect saltcake conveyor, straighten bent flights	8 h	263	GC[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$1,520	
275		Replace door gaskets	4 h	263	GC	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 5:00 PM	\$380	
276		Undo RC CSE and lockout	4 h	267	OP,SE	\$0	2000		May 8, 2015 1:00 PM	May 8, 2015 5:00 PM	\$0	
277												
278		East Flakt Precipitator	2.46 days			\$0			May 5, 2015 7:00 AM	May 7, 2015 6:00 PM	\$44,006	
279		Operate conveyors until clean	1 h	84	N1	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$0	
280		Lockout EFP	4 h	279	OP,SE	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$0	
281		Complete EFP CSE and lockout	2 h	280	OP,SE	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 2:00 PM	\$0	
282		Gas test and hatchwatch E Flakt precipitator	48 h	281	GT	\$1,000	2000		May 5, 2015 2:00 PM	May 7, 2015 2:00 PM	\$3,976	
283	075020	Replace feeder	0 h	280		\$0	1		May 5, 2015 12:00 PM	May 5, 2015 12:00 PM	\$0	
284	081389	Replace door (new one fabbed by E. Chase)	0 h	280		\$0	1		May 5, 2015 12:00 PM	May 5, 2015 12:00 PM	\$0	
285	087968	Open doors (7 in total)	2 h	279	MW	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 10:00 AM	\$90	
286		Clean (air lance) EFP internals	12 h	281	OP	\$0	2000		May 5, 2015 2:00 PM	May 6, 2015 2:00 AM	\$0	
287	087969	Inspect all precipitator parts to include:	48 h	281	GC[300%]	\$20,000	2000		May 5, 2015 2:00 PM	May 7, 2015 2:00 PM	\$33,680	
288		Inspect shafts and bearings	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
289		Inspect drive guards	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
290		Clean and inspect insulator chambers	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
291		Clean and inspect insulators	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
292		Inspect bearings on rotary feeder	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
293		Inspect proximity switches for dampers	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
294		Inspect rapper drive insulation boxes and emitting systems	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
295		Inspect collecting plates for arc holes	4 h	281	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$380	
296	089575	Replace rapper drive housings	4 h	281	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$760	
297	089574	Repair corrosion holes in insulators	4 h	281	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$760	
298	089576	Replace damaged scraper flights	4 h	281	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$760	
299		Replace door gaskets	8 h	285	GC	\$0	2000		May 5, 2015 10:00 AM	May 5, 2015 6:00 PM	\$760	
300	087967	Close doors (7 in total)	4 h	287	MW	\$0	2000		May 7, 2015 2:00 PM	May 7, 2015 6:00 PM	\$180	
301		Undo EFP CSE and lockout	4 h	287	OP,SE	\$0	2000		May 7, 2015 2:00 PM	May 7, 2015 6:00 PM	\$0	
302												
303		West Flakt Precipitator	2.46 days			\$0			May 5, 2015 7:00 AM	May 7, 2015 6:00 PM	\$47,716	
304		Operate conveyors until clean	1 h	84	N1	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$0	
305		Lockout WFP	4 h	304	OP,SE	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$0	
306		Complete WFP CSE and lockout	2 h	305	OP,SE	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 2:00 PM	\$0	
307		Gas test and hatchwatch W Flakt precipitator	48 h	306	GT	\$1,000	2000		May 5, 2015 2:00 PM	May 7, 2015 2:00 PM	\$3,976	
308	087966	Open doors (8 in total)	2 h	304	MW	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 10:00 AM	\$90	
309		Clean (air lance) EFP internals	12 h	306	OP	\$0	2000		May 5, 2015 2:00 PM	May 6, 2015 2:00 AM	\$0	
310	080835	Inspect all precipitator parts to include	48 h	306	GC[300%]	\$20,000	2000NWO		May 5, 2015 2:00 PM	May 7, 2015 2:00 PM	\$33,680	
311		Inspect shafts and bearings	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
312		Inspect drive guards	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
313		Clean and inspect insulator chambers	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
314		Inspect bearings on rotary feeder	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nf
315		Inspect proximity switches for dampers	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
316		Inspect rapper drive insulation boxes and emitting systems	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
317	089581	Replace rapper drive housings	4 h	306	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$760	
318	089579	Repair corrosion holes in insulators	4 h	306	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$760	
319	089580	Replace west cross conveyor chain	16 h	306	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 6, 2015 6:00 AM	\$3,040	
320		Replace door gaskets	8 h	306	GC	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$760	
321	087965	Close doors (8 in total)	2 h	320	MW	\$0	2000		May 7, 2015 2:00 PM	May 7, 2015 4:00 PM	\$90	
322		Undo WFP CSE and lockout	4 h	310	OP,SE	\$0	2000		May 7, 2015 2:00 PM	May 7, 2015 6:00 PM	\$0	
323												
324		Precipitators General	2 days			\$0			May 6, 2015 1:00 PM	May 8, 2015 1:00 PM	\$167,960	
325	089387	Install Epic II controllers on three precipitators	24 h	1,306	GC[300%]	\$92,000	2000		May 6, 2015 1:00 PM	May 7, 2015 1:00 PM	\$98,840	
326	076503	Replace top and bottom wearstrips on star feeder to salt cake conveyor	16 h	1,306	MW,WE	\$0	2000		May 6, 2015 1:00 PM	May 7, 2015 5:00 AM	\$1,440	
327	074204	Replace drag chain and upper guides on en-masse conveyor	0 h	1,306		\$0	0		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
328	074145	Remove, rebuild, and re-install star feeder rotor	0 h	1,306		\$0	1		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
329	075620	Replace drag chain, center tail sprocket, install idler guide on discharge conv 2B	24 h	1,306	MW[200%],Wf	\$0	2000		May 6, 2015 1:00 PM	May 7, 2015 1:00 PM	\$3,240	
330	076820	Inspect for missing piece of wearstrip on superconveyor	0 h	1,306		\$0	2000NWO		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
331	088918	Replace drive sprocket on superconveyor	4 h	1,306	MW[200%]	\$1,000	2000		May 6, 2015 1:00 PM	May 6, 2015 5:00 PM	\$1,360	
332	081176	Replace rapper control on flakt PLC	12 h	1,306	EE	\$10,000	2000		May 6, 2015 1:00 PM	May 7, 2015 1:00 AM	\$10,000	
333	085145	Replace both inlet RC precipitator to economizer expansion joints	48 h	1,306	GC[400%]	\$20,000	2000		May 6, 2015 1:00 PM	May 8, 2015 1:00 PM	\$38,240	
334	089577	Replace shear pin assembly on scraper drive 69-1033/69-1034	24 h	1,306	GC[400%]	\$4,000	2000		May 6, 2015 1:00 PM	May 7, 2015 1:00 PM	\$13,120	
335	089578	Reset inlet dampers; replace limit switches with proximity switches	8 h	1,306	GC[200%]	\$200	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$1,720	
336												

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
337		Flakt ID Fan	7.79 days			\$0			May 5, 2015 7:00 AM	May 13, 2015 2:00 AM	\$17,802	
338		Lockout and isolate flakt ID fan	1 h	84	OP,SE,GC	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$95	
339		Complete flakt ID fan casing CSE and lockout	4 h	338	OP,SE	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$0	
340		Gas test and hatchwatch flakt ID fan casing	36 h	339	GT	\$1,000	2000		May 5, 2015 12:00 PM	May 7, 2015 12:00 AM	\$3,232	
341	087974	Remove mandoors on E & W sides of fan inlet	2 h	339	MW[200%]	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 2:00 PM	\$180	
342	080218	Repair fan shaft	0 h	338		\$0	1999		May 5, 2015 8:00 AM	May 5, 2015 8:00 AM	\$0	
343		Inspect or replace fan stationary sootblower nozzles	8 h	341	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$1,520	
344	079750	Repair bearings on clutch assembly for electric drive and reinstall	0 h	342		\$0	1		May 5, 2015 8:00 AM	May 5, 2015 8:00 AM	\$0	
345	087909	NDT inspect fan runner and shaft	4 h	341	ND[200%]	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 6:00 PM	\$640	
346	087908	Vacuum casing and suction flue	8 h	341	CL[200%],OP	\$0	2000		May 5, 2015 2:00 PM	May 5, 2015 10:00 PM	\$1,360	
347		Repair casing	24 h	341	GC[200%]	\$0	2000		May 5, 2015 2:00 PM	May 6, 2015 2:00 PM	\$4,560	
348	089437	Replace high speed coupling (QM, QF 25, turbine to reduction unit)	8 h	338	MW[200%]	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 4:00 PM	\$720	
349	070068	Inspect gear driven lube oil pump on ID fan turbine	0 h	338		\$0	0		May 5, 2015 8:00 AM	May 5, 2015 8:00 AM	\$0	
350	070698	Install an extension on the lube oil sump to allow water to be drained off	4 h	338	PF,WE	\$25	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$385	
351	075752	Inspect/repair turbine lube oil piping and fittings and steam piping	0 h	338		\$0	1		May 5, 2015 8:00 AM	May 5, 2015 8:00 AM	\$0	
352	087913	Inspect turbine, fan, bearings, couplings, steam trip and throttle valve, lube system, ge	12 h	338	MW,SC	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 8:00 PM	\$2,040	
353		Inspect bearings and couplings	0 h	346		\$0	0		May 5, 2015 10:00 PM	May 5, 2015 10:00 PM	\$0	
354	079144	Change turbine oil & filters	2 h	346	MW[200%]	\$0	2000NWO		May 5, 2015 10:00 PM	May 6, 2015 12:00 AM	\$180	
355	084088	Determine cause of water in turbine lubrication oil and repair	0 h	354		\$0	2000NWO		May 6, 2015 12:00 AM	May 6, 2015 12:00 AM	\$0	
356		Replace woodward governor	0 h	355		\$0	0		May 6, 2015 12:00 AM	May 6, 2015 12:00 AM	\$0	
357	087916	Inspect and clean 0.06" orifice, governor to turbine thrust bearing	1 h	356	MW	\$0	2000		May 6, 2015 12:00 AM	May 6, 2015 1:00 AM	\$45	
358	087911	Calibrate lube oil pressure alarm & trip	2 h	7,349	IM	\$0	2000		May 6, 2015 1:00 AM	May 6, 2015 3:00 AM	\$90	
359	071588	Correct interlock problem with lube oil pump (details Bob Valenta, AlGregor)	6 h	358	EL	\$0	2000NWO		May 6, 2015 3:00 AM	May 6, 2015 9:00 AM	\$270	
360	070061	Adjust interlock to trip FD fan when ID fan turbine falls below 280 RPM	2 h	359	EL	\$0	2000NWO		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$90	
361	072220	Replace coupling from oil pump to governor (same as other turbines)	0 h	358		\$0	0		May 6, 2015 3:00 AM	May 6, 2015 3:00 AM	\$0	
362	080789	Fab and install bypass around turbine oil filter so filter can be changed on the run	4 h	338	PF	\$0	2000NWO		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$180	
363	088629	Repair trip mechanism on turbine	4 h	338	MW	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$180	
364	087973	Install mandoors on E & W sides of fan inlet (new gaskets)	2 h	342	MW[200%]	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 10:00 AM	\$180	
365		Unlock and unisolate flakt ID fan	1 h	344	GC,OP,SE	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 9:00 AM	\$95	
366	087914	Balance fan dynamically	8 h	5,252	SC,GC,N1,SE	\$0	2000		May 12, 2015 6:00 PM	May 13, 2015 2:00 AM	\$1,760	
367												
368		RC ID Fan	6.88 days			\$0			May 6, 2015 5:00 AM	May 13, 2015 2:00 AM	\$4,160	
369		Lockout and isolate RC ID fan	1 h	108		\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$0	
370		Clean (steam) inside of casing	0 h	369		\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
371		Clean (steam) fan runner	0 h	369		\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
372		NDT inspect fan runner	0 h	371		\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
373		Repair fan runner	0 h	372		\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
374		Repair casing	0 h	372		\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
375	070067	Inspect gear driven lube oil pump on RC ID fan turbine	0 h	369		\$0	0		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
376	080532	Remove the high speed coupling guard for lubrication; modify for easy access	0 h	369		\$0	1		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
377	087978	Inspect turbine, fan, bearings, couplings, steam trip and throttle valve, lube system, ge	12 h	369	MW,SC	\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 6:00 PM	\$2,040	
378	087910	Change turbine oil & filters	2 h	369	MW[200%]	\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 8:00 AM	\$180	
379		Replace woodward governor	0 h	378		\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
380	087362	Repair/adjust steam driven turbine oil trip lever assembly	4 h	379	MW	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 12:00 PM	\$180	
381	072352	Inspect 0.060" orifice, governor to turbine thrust bearing	0 h	378		\$0	1		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
382	079148	Calibrate lube oil pressure alarm & trip	0 h	381		\$0	0		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
383		Unlock and unisolate RC ID fan	1 h	4,382		\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 9:00 AM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nf
384	087905	Balance fan dynamically	8 h	3,252	SC,N1,SE,GC	\$0	2000		May 12, 2015 6:00 PM	May 13, 2015 2:00 AM	\$1,760	
385												
386		Recovery FD Fan	6.92 days			\$0			May 6, 2015 5:00 AM	May 13, 2015 3:00 AM	\$4,400	
387		Lockout and isolate FD fan	1 h	108		\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$0	
388	087922	Inspect fan runner and casing	4 h	387	ND[200%]	\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 10:00 AM	\$640	
389		Inspect couplings, bearings and seals	0 h	387		\$0	0		May 6, 2015 6:00 AM	May 6, 2015 6:00 AM	\$0	
390	087918	Change turbine oil & filters	2 h	387	MW[200%]	\$40	2000		May 6, 2015 6:00 AM	May 6, 2015 8:00 AM	\$220	
391	070697	Install an extension on the lube oil sump to allow water to be drained off	0 h	390		\$0	0		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
392	074971	Repair oil leaks at 1) inboard brg cap 2) red unit inspection plate	0 h	391		\$0	0		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
393	078909	Repair cooling water jacket on inboard bearing	0 h	392		\$0	0		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
394		Replace woodward governor	0 h	393		\$0	0		May 6, 2015 8:00 AM	May 6, 2015 8:00 AM	\$0	
395	087924	Inspect 0.060" orifice, governor to turbine thrust bearing	1 h	394	MW	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 9:00 AM	\$45	
396	087921	Inspect turbine, fan, bearings, couplings, steam trip and throttle valve, lube system, ge	8 h	395	MW,SC	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 5:00 PM	\$1,360	
397		Tighten all hold down and frame bolts including turbine	2 h	396	MW	\$0	2000		May 6, 2015 5:00 PM	May 6, 2015 7:00 PM	\$90	
398	087919	Calibrate lube oil pressure alarm & trip	2 h	7,397	IM	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 9:00 PM	\$90	
399		Unlock and unisolate FD fan	1 h	3,398		\$0	2000		May 6, 2015 9:00 PM	May 6, 2015 10:00 PM	\$0	
400	089544	Balance fan dynamically	8 h	3,252	N1,SC,SE,GC	\$0	2000		May 12, 2015 6:00 PM	May 13, 2015 2:00 AM	\$1,760	
401	087923	Close fan runner casing, install new gasket	1 h	400	GC	\$100	2000		May 13, 2015 2:00 AM	May 13, 2015 3:00 AM	\$195	
402												
403		Secondary Booster Fan	6.58 days			\$0			May 6, 2015 5:00 AM	May 12, 2015 7:00 PM	\$1,400	
404		Lockout and isolate booster fan	1 h	108		\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$0	
405	087946	Open three casing doors	2 h	404	MW	\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 8:00 AM	\$90	
406	087947	Inspect fan runner	2 h	405	ND[200%]	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 10:00 AM	\$320	
407	087950	Inspect bearings, seals, coupling; align drive	8 h	405	MW[200%]	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 4:00 PM	\$720	
408	087949	Change oil	2 h	405	MW	\$0	2000		May 6, 2015 8:00 AM	May 6, 2015 10:00 AM	\$90	
409	087945	Calibrate stroke	2 h	408	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 12:00 PM	\$90	
410	087948	Close casing doors	2 h	7,409	MW	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 6:00 PM	\$90	
411		Unlock and unisolate booster fan	1 h	3,252		\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 7:00 PM	\$0	
412												
413		Dissolving Tank	3.13 days			\$0			May 6, 2015 5:00 AM	May 9, 2015 8:00 AM	\$45,062	
414		Clean (steam) doghouse area after waterwash	4 h	108	OP,CL[200%]	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 9:00 AM	\$680	
415		Pump/Empty dissolving tank to storage/sewer	2 h	414	N1	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
416		Lockout for blanking dissolving tank CSE	2 h	415	OP,SE	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 1:00 PM	\$0	
417	080525	Replace #1 green liquor pump expansion joint	0 h	416		\$0	1		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
418	087958	Unbolt spoolpieces at GL pump to recaust and weak wash duckbills	3 h	415	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 2:00 PM	\$135	
419	087959	Clean (waterblast) entire weak wash line including duckbills and GL piping to recaust	4 h	416	CL[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 5:00 PM	\$680	
420	089442	Install blanks for dissolving tank	4 h	415	PF[200%],SE,t	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 3:00 PM	\$360	
421		Complete dissolving tank CSE and lockout	4 h	3,416	OP,SE	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 7:00 PM	\$0	
422		Gas test and hatchwatch dissolving tank	36 h	421	GT	\$1,000	2000		May 6, 2015 7:00 PM	May 8, 2015 7:00 AM	\$3,232	
423	089448	Open mandoor on dissolving tank	1 h	421	MW,OP	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 8:00 PM	\$45	
424	089545	Clean (waterblast and vacuum) tank internals	8 h	423	CL[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$1,360	
425	080597	Clean (waterblast) GL piping and weakwash duckbills to recaust	0 h	418		\$0	0		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
426		Waterblast level indicatorbubble tube connections and baffle	0 h	424		\$0	0		May 7, 2015 4:00 AM	May 7, 2015 4:00 AM	\$0	
427	087907	Inspect #1 agitator (belts, shives, packing, impellor, seals)	4 h	424	MW[200%]	\$0	2000		May 7, 2015 4:00 AM	May 7, 2015 8:00 AM	\$360	
428	079152	Inspect #2 agitator (belts, shives, packing, impellor, seals)	0 h	424		\$0	2000NWO		May 7, 2015 4:00 AM	May 7, 2015 4:00 AM	\$0	
429	079180	NDT inspect tank	0 h	424		\$0	2000NWO		May 7, 2015 4:00 AM	May 7, 2015 4:00 AM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
430	071493	Repair tank	24 h	429	GC[600%],ST[	\$1,000	2000NWO		May 7, 2015 4:00 AM	May 8, 2015 4:00 AM	\$18,760	
431	070767	Replace dissolving tank to stack expansion joint	0 h	424		\$0	1		May 7, 2015 4:00 AM	May 7, 2015 4:00 AM	\$0	
432		Repack both green liquor control valves	4 h	421	IM	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 11:00 PM	\$180	
433	077498	Replace both green liquor valves on #2 Green liquor pump discharge	6 h	421	PF[200%]	\$0	2000		May 6, 2015 7:00 PM	May 7, 2015 1:00 AM	\$540	
434		Install scaffolding to replace spouts	4 h	424	ST[400%]	\$0	2000		May 7, 2015 4:00 AM	May 7, 2015 8:00 AM	\$1,360	
435	087886	Change spouts	36 h	434	GC[200%]	\$8,000	2000		May 7, 2015 8:00 AM	May 8, 2015 8:00 PM	\$14,840	
436		Remove scaffolding for spouts	4 h	435	ST[400%]	\$0	2000		May 8, 2015 8:00 PM	May 9, 2015 12:00 AM	\$1,360	
437		Undo dissolving tank CSE and lockout	4 h	4,430	OP,SE,PF	\$0	2000		May 8, 2015 8:00 PM	May 9, 2015 12:00 AM	\$180	
438	089451	Close mandoor on dissolving tank, install new gasket	1 h	437	MW,OP	\$0	2000		May 9, 2015 12:00 AM	May 9, 2015 1:00 AM	\$45	
439	087960	Bolt weakwash duckbill spoolpieces and GL piping after cleaning, new gaskets	4 h	437	PF[200%]	\$0	2000		May 9, 2015 12:00 AM	May 9, 2015 4:00 AM	\$360	
440	087929	Bolt spoolpieces at GL pump and recaust, install new gaskets	3 h	437	PF	\$0	2000		May 9, 2015 12:00 AM	May 9, 2015 3:00 AM	\$135	
441	089453	Remove blanks for dissolving tank	4 h	3,439	SE,OP,MW[20	\$0	2000		May 9, 2015 4:00 AM	May 9, 2015 8:00 AM	\$360	
442	089454	Rotate the dissolving tank drain blind to closed position	2 h	437	PF	\$0	2000		May 9, 2015 12:00 AM	May 9, 2015 2:00 AM	\$90	
443		Fill tank with weakwash	2 h	3,442	N1	\$0	2000		May 9, 2015 4:00 AM	May 9, 2015 6:00 AM	\$0	
444												
445		Ducon Scrubber	0.63 days			\$0			May 6, 2015 7:00 AM	May 6, 2015 10:00 PM	\$2,375	
446		Complete ducon scrubber CSE and lockout	0 h	147		\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
447		Gas test and hatchwatch ducon scrubber	0 h	147	GT	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 7:00 AM	\$0	
448	087936	Open the access door on ducon scrubber drain line	1 h	446	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 8:00 AM	\$45	
449	087939	Open doors on scrubber, stack and drain line per list	2 h	446	MW	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 9:00 AM	\$90	
450	087934	Remove 90 degree elbow on drain line	2 h	446	PF[200%]	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 9:00 AM	\$180	
451	087937	Clean (waterblast) scrubber and dissolving tank stack	8 h	3,449	CL[200%],OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 5:00 PM	\$1,360	
452		Cannonball down the inside of the dissolving tank stack	2 h	451	CL[200%],OP	\$0	2000		May 6, 2015 5:00 PM	May 6, 2015 7:00 PM	\$340	
453		Inspect scrubber internals and expansion joints	0 h	452		\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
454	087933	Install 90 degree elbow on drain line	2 h	453	PF[200%]	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 9:00 PM	\$180	
455	087938	Close doors on scrubber, stack and drain line per list (6 in total)	2 h	453	MW	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 9:00 PM	\$90	
456	087935	Close the access door on ducon scrubber drain line, install new gasket	1 h	453	MW	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 8:00 PM	\$45	
457		Undo ducon scrubber CSE and lockout	1 h	454	OP,SE,PF	\$0	2000		May 6, 2015 9:00 PM	May 6, 2015 10:00 PM	\$45	
458												
459		80 PSI SCAH Condensate Tank	0.33 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 5:00 PM	\$410	
460		Drain tank	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
461		Isolate tank	1 h	460	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 11:00 AM	\$0	
462	087952	Open manhole	1 h	461	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$45	
463	087953	NDT inspect 80 PSI SCAH Condensate Tank	4 h	462	ND	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 4:00 PM	\$320	
464	087954	Close manhole, install new gaskets	1 h	463	PF	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 5:00 PM	\$45	
465												
466		165 PSI SCAH Condensate Tank	0.33 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 5:00 PM	\$410	
467		Drain tank	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
468		Isolate tank	1 h	467	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 11:00 AM	\$0	
469	087955	Open manhole	1 h	468	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$45	
470	087956	NDT inspect 165 PSI SCAH Condensate Tank	4 h	469	ND	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 4:00 PM	\$320	
471	087957	Close manhole, install new gaskets	1 h	470	PF	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 5:00 PM	\$45	
472												
473		Evaporators and Surface Condensers	5.79 days			\$0			May 5, 2015 3:00 AM	May 10, 2015 10:00 PM	\$326,462	
474		Boil for 6 hours after Be reaches < 1.0	6 h		N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 9:00 AM	\$0	
475		Shut off steam	1 h	474	N1	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 10:00 AM	\$0	
476		Flood domes with water	2 h	475	N1	\$0	2000		May 5, 2015 10:00 AM	May 5, 2015 12:00 PM	\$0	

ID	W. O. #	Task	Duration	Predc	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
477		Decrease temperature with cold water to 70F	4 h	476	N1	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 4:00 PM	\$0	
478		Drain water from evaps	2 h	477	N1	\$0	2000		May 5, 2015 4:00 PM	May 5, 2015 6:00 PM	\$0	
479		Lockout for blanking, E&SC CSE and lockout	4 h	478	OP,SE	\$0	2000		May 5, 2015 6:00 PM	May 5, 2015 10:00 PM	\$0	
480	087841	Install blanks	8 h	479	OP,SE,PF[300	\$0	2000		May 5, 2015 10:00 PM	May 6, 2015 6:00 AM	\$1,080	
481		Complete E & SC CSE and lockout	4 h	480	OP,SE	\$0	2000		May 6, 2015 6:00 AM	May 6, 2015 10:00 AM	\$0	
482		Gas test and hatchwatch Evaps	96 h	481	GT	\$1,000	2000		May 6, 2015 10:00 AM	May 10, 2015 10:00 AM	\$6,952	
483	087842	Clean (waterblast) interior of evaporators	96 h	481	CL[600%],OP,	\$0	2000		May 6, 2015 10:00 AM	May 10, 2015 10:00 AM	\$81,600	
484		Clean (waterblast) primary condenser, secondary condenser, and ejectors	24 h	481	CL[400%],OP,	\$0	2000NWO		May 6, 2015 10:00 AM	May 7, 2015 10:00 AM	\$8,160	
485		Inspect vapor ducting	4 h	481	GC,PE	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$380	
486		Hydrostatically test vapour sides #3, #4 effects	4 h	481	GC,PE	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$380	
487	079179	Exchange test coupons	0 h	481		\$0	1		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
488	087843	NDT inspect and repair evaporators	72 h	481	GC[600%],ND|	\$0	2000		May 6, 2015 10:00 AM	May 9, 2015 10:00 AM	\$130,320	
489		Replace missing chevrons in #2 evaporator	8 h	481	GC	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$760	
490		Inspect interior of surface condensers	0 h	481		\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
491	079128	Inspect evaporator steam flow annubar	0 h	481		\$0	2000NWO		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
492	075553	Inspect warm water overflow pipe to sewer (see K. Thomas)	2 h	481	PF	\$0	2000NWO		May 6, 2015 10:00 AM	May 6, 2015 12:00 PM	\$90	
493	067478	Repair leaking steam flange, top of #1 evap, north side	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
494	069823	Repair leaking furmanite 80 psi steam flange, #1 evap	24 h	481	ST[200%],GC[	\$400	2000		May 6, 2015 10:00 AM	May 7, 2015 10:00 AM	\$9,040	
495	060662	Complete line replacement in combined condensate	24 h	481	PF,WE	\$0	2000		May 6, 2015 10:00 AM	May 7, 2015 10:00 AM	\$2,160	
496	068192	Repack isolation valve on 165 psi steam line to ejectors	0 h	481		\$0	1		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
497	070699	Inspect/repair dump condensor and #4 effect, expected some tubes are leaking	0 h	483		\$0	1		May 10, 2015 10:00 AM	May 10, 2015 10:00 AM	\$0	
498	088059	Rebuild 80 psi isolation valves to dump condensor, replace gasket on top of valve	12 h	481	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 10:00 PM	\$540	
499	071587	Repair steam leak at small valve off 80 psi line, 1st floor near SMT, recaust alley side	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
500	065993	Replace two condensate drain pot valves on 80 psi line under dump condensor	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
501	074657	Repair upstream flange on 80 psi steam to dump condensor (leaking)	0 h	481		\$0	1		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
502	069972	Repack dump condensor condensate pump	0 h	481		\$0	1		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
503	080182	Rebuild 80 psi steam valve to dump condenser	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
504	072745	Modify LCV's on Evaporators	8 h	481	IM,PF	\$10,000	2000		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$10,720	
505	081447	Inspect front end and back end LCV's	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
506	078246	Repair steam leaks on 165 psi line to ejectors, 2nd flr betw W flakt and ESC	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
507	080934	Replace primary ejector nozzle	8 h	481	PF	\$0	2000NWO		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$360	
508		Inspect ejector nozzles and venturis	8 h	481	PF	\$0	2000NWO		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$360	
509	081446	Rebuild leveltrol for combined condensate	0 h	481		\$0	0		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
510	081935	Repair leaking sample line, weak black to sample station, SE corner evap stairwell	0 h	481		\$0	1		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
511	083631	Repair steam leak in stm line from #1 to #2 evap (see WO)	0 h	481		\$0	2000NWO		May 6, 2015 10:00 AM	May 6, 2015 10:00 AM	\$0	
512	083580	Repair steam leak at top of #1 evaporator vapour dome	24 h	481	GC[200%],ST[	\$0	2000		May 6, 2015 10:00 AM	May 7, 2015 10:00 AM	\$8,640	
513	082011	Install control valve on combined condensate pump	8 h	481	WE,IM,PF	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$1,080	
514	081844	Thermal spray 400 square feet of evaporator internals	24 h	488	SC	\$0	2000NWO		May 9, 2015 10:00 AM	May 10, 2015 10:00 AM	\$3,000	
515	063375	Replace three remaining bottom manhole covers on evaporators	48 h	481	GC[300%]	\$10,000	2000		May 6, 2015 10:00 AM	May 8, 2015 10:00 AM	\$23,680	
516		Replace cladding in #2 Effect bottom dome	48 h	481	GC[400%]	\$15,000	2000NWO		May 6, 2015 10:00 AM	May 8, 2015 10:00 AM	\$33,240	
517	087057	Inspect valve A3 on #2 effect for leaking by	4 h	481	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$180	
518	074764	Repair #2 effect switching valve actuator (see L. Freeman)	8 h	481	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$360	
519	072727	Install isolation valve on minimum flow line for the dump condensor, install suction drai	2 h	481	PF,WE	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 12:00 PM	\$180	
520	080423	Replace back end LCV	2 h	481	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 12:00 PM	\$90	
521	087783	Inspect #1 effect safety valve	4 h	481	SC	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$500	
522	088634	Replace pipe flanges at LCV between PMT and strong black tanks	8 h	481	PF,WE	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 6:00 PM	\$720	
523	089326	Replace liquor side drain valve on #2 effect ground floor	4 h	481	PF	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$180	
524	089498	Install a 3" X 20' line on clean condensate pump suction to sewer (SEE WO)	4 h	481	PF,WE	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 2:00 PM	\$360	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utput	Earliest Start	Earliest Finish	Cost	nf
525	087365	Rebuild 80# PRV and positioner	6 h	481	IM	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 4:00 PM	\$270	
526		Undo E & SC CSE and lockout	4 h	514	OP,SE	\$0	2000		May 10, 2015 10:00 AM	May 10, 2015 2:00 PM	\$0	
527	087840	Remove blanks (see printed work order)	8 h	526	PF[300%],OP,	\$0	2000		May 10, 2015 2:00 PM	May 10, 2015 10:00 PM	\$1,080	
528												
529		Precipitator Mix Tank	7.67 days			\$0			May 5, 2015 7:00 AM	May 12, 2015 11:00 PM	\$5,368	
530		Drain and flush tank	2 h	83	N1	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 9:00 AM	\$0	
531		Lockout PMT exhaust fan	1 h	83		\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$0	
532		Lockout for blanking, PMT CSE and lockout	2 h	530	OP,SE	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$0	
533	087971	Install blanks	4 h	532	OP,SE,PF	\$0	2000		May 5, 2015 11:00 AM	May 5, 2015 3:00 PM	\$180	
534		Complete PMT CSE and lockout	2 h	533	OP,SE	\$0	2000		May 5, 2015 3:00 PM	May 5, 2015 5:00 PM	\$0	
535		Gas test and hatchwatch PMT	24 h	534	GT	\$1,000	2000		May 5, 2015 5:00 PM	May 6, 2015 5:00 PM	\$2,488	
536		Inspect tank internals	0 h	534		\$0	2000		May 5, 2015 5:00 PM	May 5, 2015 5:00 PM	\$0	
537	087972	Inspect tank internals, agitator, scrapers, red units, motors, pins, screens	24 h	534	MW[200%]	\$0	2000		May 5, 2015 5:00 PM	May 6, 2015 5:00 PM	\$2,160	
538	087588	Repair/replace PMT vent fan suction valve	8 h	537	PF	\$0	2000		May 6, 2015 5:00 PM	May 7, 2015 1:00 AM	\$360	
539		Unlock PMT exhaust fan	1 h	538		\$0	2000		May 7, 2015 1:00 AM	May 7, 2015 2:00 AM	\$0	
540		Undo PMT CSE and lockout	1 h	7,539	OP,SE	\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 7:00 PM	\$0	
541	087970	Remove blanks	4 h	540	PF,OP,SE	\$0	2000		May 12, 2015 7:00 PM	May 12, 2015 11:00 PM	\$180	
542												
543		Saltcake Mix Tank	7.46 days			\$0			May 5, 2015 7:00 AM	May 12, 2015 6:00 PM	\$793	
544		Drain and flush tank	2 h	83	N1	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 9:00 AM	\$0	
545		Lockout SMT exhaust fan	1 h	83		\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$0	
546		Lockout for blanking, SMT CSE and lockout	2 h	544	SE,OP	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$0	
547	087902	Install blanks	4 h	546	PF,OP	\$0	2000		May 5, 2015 11:00 AM	May 5, 2015 3:00 PM	\$180	
548		Complete SMT CSE and lockout	1 h	547	SE,OP	\$0	2000		May 5, 2015 3:00 PM	May 5, 2015 4:00 PM	\$0	
549		Gas test and hatchwatch SMT	4 h	548	GT	\$0	2000		May 5, 2015 4:00 PM	May 5, 2015 8:00 PM	\$248	
550	087900	NDT inspect tank internals	4 h	548	ND	\$0	2000		May 5, 2015 4:00 PM	May 5, 2015 8:00 PM	\$320	
551	079562	Install new shaft and agitator in SMT	0 h	548		\$0	0		May 5, 2015 4:00 PM	May 5, 2015 4:00 PM	\$0	
552	081850	Repair hole east side of downcomer inlet	0 h	544		\$0	1		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
553		Inspect agitator	0 h	548		\$0	2000		May 5, 2015 4:00 PM	May 5, 2015 4:00 PM	\$0	
554	079188	Inspect belts, bearings, rotor, etc. SMT fan	0 h	545		\$0	0		May 5, 2015 8:00 AM	May 5, 2015 8:00 AM	\$0	
555	087901	Stroke check the SMT level control valve	1 h	545	IM	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 9:00 AM	\$45	
556		Undo SMT CSE and lockout	0 h	2,555		\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 6:00 PM	\$0	
557		Remove blanks from SMT	0 h	556		\$0	2000		May 12, 2015 6:00 PM	May 12, 2015 6:00 PM	\$0	
558												
559		Indirect Black Liquor Heater	0.88 days			\$0			May 5, 2015 7:00 AM	May 6, 2015 4:00 AM	\$3,800	
560		Lockout IBLH	1 h	83		\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 8:00 AM	\$0	
561	089455	Remove both end covers from IBLH (JLG req'd)	4 h	560	PF[200%]	\$0	2000		May 5, 2015 8:00 AM	May 5, 2015 12:00 PM	\$360	
562	072331	Clean (waterblast) liquor side of heat exchanger tubes	16 h	561	CL[200%]	\$0	2000NWO		May 5, 2015 12:00 PM	May 6, 2015 4:00 AM	\$2,720	
563	081916	Weld leak on suction line to IBLH at pressure guage connection	4 h	83	PF,WE	\$0	2000NWO		May 5, 2015 7:00 AM	May 5, 2015 11:00 AM	\$360	
564	089457	Install both end covers on IBLH (new gaskets req'd) (270 ft lb torque)	4 h	563	PF[200%]	\$0	2000		May 5, 2015 11:00 AM	May 5, 2015 3:00 PM	\$360	
565		Unlock IBLH	1 h	564		\$0	2000		May 5, 2015 3:00 PM	May 5, 2015 4:00 PM	\$0	
566												
567		East and West 64% Tanks	0 days			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
568		Isolate tanks for hot water cleaning	0 h	74SS	OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
569		Fill tanks with hot water	0 h	568	N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
570		Drain tanks to sewer	0 h	569	N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
571		Lockout for blanking E & W 64% tanks	0 h	570		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
572		Install blanks	0 h	571		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
573		Complete east 64% tank CSE and lockout	0 h	572		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
574		Complete west 64% tank CSE and lockout	0 h	572		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
575		Clean (steam) tank internals, pump suction	0 h	3,574		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
576		Inspect tank internals	0 h	575		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
577	080153	Repair leak on bottom outlet flange west 64% tank	0 h	575		\$0	0		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
578		Undo east 64% tank CSE and lockout	0 h	574		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
579		Undo west 64% tank CSE and lockout	0 h	574		\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
580												
581		#1 and #2 22% Tanks	1.5 days			\$0			May 5, 2015 3:00 AM	May 6, 2015 3:00 PM	\$5,644	
582		Isolate tanks for hot water cleaning	2 h	74SS	OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 5:00 AM	\$0	
583		Fill tanks with hot water	4 h	582	N1	\$0	2000		May 5, 2015 5:00 AM	May 5, 2015 9:00 AM	\$0	
584		Drain tanks to sewer	4 h	583	N1	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$0	
585		Lockout for blanking #2 22% tanks	2 h	584	SE,OP	\$0	2000NWO		May 5, 2015 1:00 PM	May 5, 2015 3:00 PM	\$0	
586		Install blanks	2 h	585	OP,PF	\$0	2000NWO		May 5, 2015 3:00 PM	May 5, 2015 5:00 PM	\$90	
587		Complete #2 22% tank CSE and lockout	2 h	586	SE,OP	\$0	2000		May 5, 2015 5:00 PM	May 5, 2015 7:00 PM	\$0	
588		Gas test and hatchwatch #2 22% tank	12 h	587	GT	\$1,000	2000		May 5, 2015 7:00 PM	May 6, 2015 7:00 AM	\$1,744	
589		Clean (steam) tank internals, pump suction	4 h	587	CL[200%]	\$0	2000		May 5, 2015 7:00 PM	May 5, 2015 11:00 PM	\$680	
590		Inspect tank internals	8 h	589	ND[200%],ST	\$0	2000		May 5, 2015 11:00 PM	May 6, 2015 7:00 AM	\$1,960	
591	088713	Repair leak in #2-22% tank	12 h	589	MW,WE	\$0	2000		May 5, 2015 11:00 PM	May 6, 2015 11:00 AM	\$1,080	
592		Undo #2 22% tank CSE and lockout	2 h	591	SE,OP	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 1:00 PM	\$0	
593		Remove blanks from #2 22% tank	2 h	592	OP,PF	\$0	2000NWO		May 6, 2015 1:00 PM	May 6, 2015 3:00 PM	\$90	
594												
595		Emergency Blow Down Tank	0.88 days			\$0			May 5, 2015 3:00 AM	May 6, 2015 12:00 AM	\$4,284	
596		Drain tank	1 h	74SS	N1	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 4:00 AM	\$0	
597		Lockout for blanking EBD tank	2 h	596	SE,OP	\$0	2000		May 5, 2015 4:00 AM	May 5, 2015 6:00 AM	\$0	
598	087941	Install blanks	4 h	597	PF[200%]	\$0	2000		May 5, 2015 6:00 AM	May 5, 2015 10:00 AM	\$360	
599		Complete EBD tank CSE and lockout	2 h	598	SE,OP	\$0	2000		May 5, 2015 10:00 AM	May 5, 2015 12:00 PM	\$0	
600		Gas test and hatchwatch EBD tank	12 h	599	GT	\$1,000	2000		May 5, 2015 12:00 PM	May 6, 2015 12:00 AM	\$1,744	
601	087944	NDT inspect tank	8 h	599	ND[200%]	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 8:00 PM	\$1,280	
602	085796	Install redesigned EBD tank cooling pot	8 h	599	PF,WE	\$0	2000		May 5, 2015 12:00 PM	May 5, 2015 8:00 PM	\$720	
603		Undo EBD tank CSE and lockout	2 h	1,602	SE,OP	\$0	2000		May 5, 2015 8:00 PM	May 5, 2015 10:00 PM	\$0	
604	087942	Remove blanks from EBD tank	2 h	603	PF[200%]	\$0	2000		May 5, 2015 10:00 PM	May 6, 2015 12:00 AM	\$180	
605												

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
606		Power Boiler	6.58 days			\$0			May 5, 2015 3:00 AM	May 11, 2015 5:00 PM	\$834,683	
607		Stop burning hog	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
608	089546	Retrofit hog reclaim	120 h	607	GC[800%]	\$80,000	2000		May 5, 2015 3:00 AM	May 10, 2015 3:00 AM	\$171,200	
609	086412	Repair flight conveyor bedplates	12 h	607	WE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 PM	\$540	
610		Clean grates and flush hoppers	2 h	607	OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 5:00 AM	\$0	
611		Stop burning gas	0 h	5,108		\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 5:00 AM	\$0	
612		Wash out secondary multicloners with HP water and nozzle	12 h	72 h	OP	\$0	2000		May 8, 2015 5:00 PM	May 9, 2015 5:00 AM	\$0	
613		Blowdown water wall headers at 600 psi	1 h	611	N1	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$0	
614		Test low water trip on power boiler	1 h	611	OP	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$0	
615	072160	Insulate and reclad power boiler, east side 3rd floor	0 h	611		\$0	2000NWO		May 6, 2015 5:00 AM	May 6, 2015 5:00 AM	\$0	
616		Flush hoppers & empty grate hopper	3 h	610	OP	\$0	2000		May 5, 2015 5:00 AM	May 5, 2015 8:00 AM	\$0	
617		Air cool boiler	8 h	611	N1	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 1:00 PM	\$0	
618	087987	Remove oxygen probe	1 h	611	IM	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$45	
619	087994	Remove bed camera	1 h	611	EL	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 6:00 AM	\$45	
620		Depressurize & open vent	4 h	611	N1	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 9:00 AM	\$0	
621		Circulate feedwater to cool boiler & DA	4 h	611	N1	\$0	2000		May 6, 2015 5:00 AM	May 6, 2015 9:00 AM	\$0	
622		Close main & intermediate stop valves	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
623		Open drum vent and drain boiler	4 h	620	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 1:00 PM	\$0	
624		Lockout for blanking, PB waterside CSE	2 h	623	OP,SE	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 3:00 PM	\$0	
625	087990	Install blanks for waterside CSE	3 h	623	OP,PF,SE	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 4:00 PM	\$135	
626		Complete PB waterside CSE and lockout	4 h	625	OP,SE	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$0	
627		Gas test and hatchwatch PB waterside	12 h	626	GT	\$1,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$1,744	
628	087992	Remove boiler drum manhole covers, both sides	1 h	626	PF,OP	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 9:00 PM	\$45	
629		Insert downcomer covers	1 h	628	OP	\$0	2000		May 6, 2015 9:00 PM	May 6, 2015 10:00 PM	\$0	
630		Inspect boiler drum internals	12 h	629	ND,CH	\$0	2000NWO		May 6, 2015 10:00 PM	May 7, 2015 10:00 AM	\$960	
631		Clean boiler drum	8 h	630	OP	\$0	2000		May 7, 2015 10:00 AM	May 7, 2015 6:00 PM	\$0	
632	061050	Replace isolation valve, 625 psi steam to PB ID fan turbine	0 h	626		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
633	061721	Replace 625 psi steam turbine inlet valve	0 h	626		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
634	077842	Inspect 165 psi PRV integrator and actuator	0 h	626		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
635	044403	Install an annubar, transmitter, and integrator, demineralized flow to dearator, 1st floor	0 h	626		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
636	079437	Repair quenching water on the main blowdown tank	0 h	626		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
637	080883	Repair 165# desup valve (72-TIC-382), leaks by	0 h	626		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
638	081556	Replace PB superheater drain valve	0 h	626		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
639		Lockout for blanking, PB fireside CSE and lock	2 h	621	OP,SE	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
640	087989	Install blanks for fireside CSE	3 h	639	PF,OP	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 2:00 PM	\$135	
641		Complete PB fireside CSE and lockout	2 h	640	OP,SE	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 4:00 PM	\$0	
642		Gas test and hatchwatch PB fireside	48 h	641	GT	\$1,000	2000		May 6, 2015 4:00 PM	May 8, 2015 4:00 PM	\$3,976	
643	087985	Open mandos - furnace, economizer, penthouse , undergrate	4 h	641	MW[200%]	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$360	
644	087999	Install PB furnace scaffolding, lighting, and ventilation	6 h	641	ST[1,000%]	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 10:00 PM	\$5,100	
645		Open windbox & undergrate doors	4 h	641	OP	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$0	
646		Open SCAH door	0 h	641		\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$0	
647	072359	Open door at base of stack	2 h	641	MW	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 6:00 PM	\$90	
648	087983	Open doors, 1 on 2nd floor air heater, 2 on E 2 on W, 1 on econ hopper, 1 on flyash hc	3 h	641	MW	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 7:00 PM	\$135	
649	087996	Clean (vacuum) undergrate compartments	8 h	1,643	CL[200%],OP	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$1,360	
650	088008	Inspect undergrate steam blowing system, incl hoses and nozzles	12 h	649	GC[400%]	\$0	2000		May 7, 2015 4:00 AM	May 7, 2015 4:00 PM	\$4,560	
651	087133	Repair/replace main undergrate steam supply valve located on 2nd floor	12 h	639	PF,WE,ND[25'	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 11:00 PM	\$1,320	
652	080606	Clean furnace floor, ensure pinholes in grates are clear	8 h	649	CL[200%],OP	\$0	2000NWO		May 7, 2015 4:00 AM	May 7, 2015 12:00 PM	\$1,360	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
653	088004	NDT inspect and repair boiler	48 h	3,644	GC[600%],NDI	\$0	2000		May 6, 2015 10:00 PM	May 8, 2015 10:00 PM	\$42,720	
654		Replace worn blowing grates	24 h	652	GC[400%]	\$10,000	2000		May 7, 2015 12:00 PM	May 8, 2015 12:00 PM	\$19,120	
655		Replace worn floor grates	24 h	652	GC[400%]	\$10,000	2000		May 7, 2015 12:00 PM	May 8, 2015 12:00 PM	\$19,120	
656	088005	Inspect refractory at dump grates and burner ports	16 h	652	GC	\$4,000	2000		May 7, 2015 12:00 PM	May 8, 2015 4:00 AM	\$5,520	
657		Inspect expansion joints	8 h	641	GC	\$0	2000		May 6, 2015 4:00 PM	May 7, 2015 12:00 AM	\$760	
658		Inspect air dampers	8 h	641	GC	\$0	2000		May 6, 2015 4:00 PM	May 7, 2015 12:00 AM	\$760	
659	088014	Inspect oil and gas burners	8 h	641	EL	\$0	2000		May 6, 2015 4:00 PM	May 7, 2015 12:00 AM	\$360	
660		Reinforce #2 and #4 burner eggcrates	8 h	641	GC	\$0	2000		May 6, 2015 4:00 PM	May 7, 2015 12:00 AM	\$760	
661	087997	Vacuum penthouse	8 h	641	CL[200%],OP	\$0	2000		May 6, 2015 4:00 PM	May 7, 2015 12:00 AM	\$1,360	
662		Steam clean SCAH turning vanes	0 h	646		\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$0	
663	088032	Clean (vacuum) base of stack	4 h	647	CL[200%],OP	\$0	2000		May 6, 2015 6:00 PM	May 6, 2015 10:00 PM	\$680	
664	088033	Inspect stack	24 h	663	SC,ND[200%]	\$2,000	2000		May 6, 2015 10:00 PM	May 7, 2015 10:00 PM	\$8,840	
665	081445	Clean (powerwash) primary multicloners	4 h	641	OP,CL[200%]	\$0	2000NWO		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$680	
666	075798	Install mass flow meters in tangential air (2 req'd) (SEE WO)	24 h	3,641	IM	\$75,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$76,080	
667	043361	Replace PB waterwall blowdown valves (3 req'd)	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
668	088058	Rebuild the 80 psi PRV	6 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 2:00 AM	\$270	
669	088057	Rebuild the 165 psi PRV	8 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
670		Stroke valve and inspect cotroller alignment operation on main natural gas valve	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
671	075757	Replace the lower angle valves on both steam loops between boiler drum and superhe	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
672	078316	Replace the seals on all three hearth doors	0 h	3,641		\$100	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$100	
673	060516	Complete electrical tie-ins for sootblower PLC and starter modifications	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
674	077511	Replace #2 H&V condensate inlet flange gasket	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
675	068387	Repair leaking nipple, turbine driven Demin pump, at vent stack to casing drain flash p	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
676	070713	Inspect/repair/replace seal water line to PB economizer	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
677	069729	Repair leak on 165 psi desup at old desup station	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
678	040328	Replace leaking gasket in 165 psi header, 3rd floor, above #1 bark feeder	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
679	061718	Repair/replace PB main steam stop valve	24 h	3,641	GC[200%]	\$30,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$34,560	
680	061719	Repair/replace PB intermediate steam stop valve	24 h	3,641	GC[200%]	\$30,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$34,560	
681	061793	Replace bolts on orifice flange, 80 psi line, above thermocompressor on 4th floor	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
682	070733	Replace the water header supplying the grates hopper	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
683	063220	Repack bypass valve around 625 psi field isolation valve to PB ID fan turbine	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
684	066526	Replace PB steam drum gauge glass (west) isolating valves (leaking by)	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
685	075285	Remove two furmanite boxes on PB SO3 line and PO4 line and repair	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
686	072853	Investigate and repair plugged and broken dropleg 165 psi steam line to process (D. S	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
687	078074	Insulate 165 psi PRV to prevent overheating (L. Freeman)	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
688	067801	Repack KSB feedwater pump turbine 80 psi exhaust valve	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
689	067802	Repack KSB feedwater pump turbine field exhaust valve (SE corner of fdwatr pump roc	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
690	070614	Repair 80 psi steam header relief valve (HC-72-395). Disconnect auto valve (R. Wagn	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
691	071392	Repair/replace 80 psi de-sup control (does not function in auto)	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
692	077433	Repair/replace M&D digester safety valve	0 h	3,641		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
693	043593	Resurface seats on 625 psi block valve at ground floor turbine building (just below 1st	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
694	080188	Calibrate all switches on PB ID and FD fans	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
695	080181	Replace flow meter on raw water to condenser annubar	0 h	3,641	IM,WE	\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
696	088012	Calibrate PB drum level transmitter, check trips	4 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
697	088056	Stroke check gas valves to PB, main valve and pilot valve	3 h	3,641		\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 11:00 PM	\$0	
698	088061	Perform annual maintenance on PB opacity meter per manufacturer's spec	4 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
699	080183	Remove, calibrate (send out), and re-install PB air flow meters	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
700	087855	Stroke check PB damper drives (U/F and O/F, gas burners, FD fan, ID fan)	2 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
701	079968	Upgrade Cimplicity screens for Y2K, PB flame, TG, Demin, Biobasin, etc.	48 h	3,641	EE	\$30,000	2000		May 6, 2015 8:00 PM	May 8, 2015 8:00 PM	\$30,000	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
702	080068	Service 80 psi steam FC valve to evaps; stroke check, rebuild actuator and positioner	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
703	088007	Inspect/repair dampers in U/F, O/F, and tangential plenums	24 h	3,641	GC[400%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 PM	\$9,120	
704	082786	Repair NCG line on 4-1/2 floor in S/P	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
705	084212	Repair NCG line from seal tank at 2nd flr below auto valve	4 h	3,641	PF,WE	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$360	
706	082262	Replace flange gaskets on TG 80# exhaust valve, inspect flange surfaces	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
707	087461	Repair TG 80# desuperheater valve (leaks by)	8 h	3,641	PF,WE	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$720	
708	084429	Inspect TG 165# check valve actuator for oil leaks	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
709	082113	Repair power boiler ignitors	0 h	3,641		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
710	085876	Install capped rodding points at NCG to burner entries	0 h	3,641		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
711	089548	Repair cracked crotch plates on primary windbox	12 h	3,641	GC[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$2,280	
712		Replace section of right water wall (3rd floor)	48 h	3,641	GC[600%]	\$40,000	2000NWO		May 6, 2015 8:00 PM	May 8, 2015 8:00 PM	\$67,360	
713	086002	Remove, repair, and install PB superheater safety valve	8 h	3,641	PF[200%]	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$720	
714	085551	Replace PB pinhole blocks (5/16 holes X 16 holes/block)	36 h	3,641	GC[400%]	\$30,000	2000		May 6, 2015 8:00 PM	May 8, 2015 8:00 AM	\$43,680	
715	086009	Tie in cold mill water supply to P/R bathroom (see P.Syme)	4 h	3,641	PF	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
716	087961	Stroke check main natural gas valve and pilot gas valve	3 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 11:00 PM	\$135	
717	087981	Stroke check the main natural gas valve located in recaust alleyway	4 h	3,641	IM	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
718	088015	Inspect and overhaul gas burner ignitors and scanners	4 h	3,641	EL	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$180	
719	088910	Install dissolved O2 sample station at KSB pumps suction and discharge headers	12 h	3,641	PF,WE	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$1,080	
720	089525	Replace flange gasket on PB intermediate main stop bypass	2 h	3,641	PF	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 10:00 PM	\$90	
721	089526	Replace bypass valve on the first block valve before the 80# PRV (Hopkins)	12 h	3,641	PF	\$3,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$3,540	
722	081467	Modify west PB drum vent line (See WO)	8 h	3,641	PF,WE	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$720	
723	081584	Replace 2" valve on PB steam drum (See WO)	3 h	3,641	PF	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 11:00 PM	\$135	
724	088129	Repair insulation on PB main stop valve	8 h	3,641	LG	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$360	
725	088482	Remove, rebuild, and replace thermocompressor 190# safety valve	12 h	3,641	PF,SC	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$2,040	
726		Gas test and hatchwatch PB hoppers	24 h	641	GT	\$1,000	2000		May 6, 2015 4:00 PM	May 7, 2015 4:00 PM	\$2,488	
727	088003	Inspect primary multiclones	48 h	641	GC[400%]	\$20,000	2000		May 6, 2015 4:00 PM	May 8, 2015 4:00 PM	\$38,240	
728	088006	Inspect secondary multiclones	48 h	1,612	GC[800%]	\$20,000	2000		May 9, 2015 5:00 AM	May 11, 2015 5:00 AM	\$56,480	
729	082189	Replace secondary multiclone outlet expansion joint	24 h	641	GC[600%]	\$1,000	2000		May 6, 2015 4:00 PM	May 7, 2015 4:00 PM	\$14,680	
730	083700	Design and install secondary multiclone hopper wall water wash system	0 h	641	GC[300%]	\$5,000	2000NWO		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$5,000	
731	086083	Replace sight glasses on PB ash hoppers and downcomers	0 h	641		\$0	2000NWO		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$0	
732		Install scaffold to door between hoppers	4 h	641	ST	\$0	2000NWO		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$340	
733		Open door on flue between hoppers	12 h	732	MW	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$540	
734		Open doors	1 h	733	MW	\$0	2000		May 7, 2015 8:00 AM	May 7, 2015 9:00 AM	\$45	
735		Clean hoppers	4 h	734	OP,CL[200%]	\$0	2000		May 7, 2015 9:00 AM	May 7, 2015 1:00 PM	\$680	
736		Install scaffolding inside hoppers	4 h	735	ST	\$0	2000NWO		May 7, 2015 1:00 PM	May 7, 2015 5:00 PM	\$340	
737		Inspect hoppers	8 h	736	OP	\$0	2000		May 7, 2015 5:00 PM	May 8, 2015 1:00 AM	\$0	
738	088011	Inspect water seals in flyash, economizer, and dumpgrates hoppers	24 h	736	GC[200%]	\$0	2000		May 7, 2015 5:00 PM	May 8, 2015 5:00 PM	\$4,560	
739		Replace ash hopper seal water line	24 h	736	GC[200%]	\$2,500	2000NWO		May 7, 2015 5:00 PM	May 8, 2015 5:00 PM	\$7,060	
740	074101	Repair leaking flyash hopper	0 h	736		\$0	0		May 7, 2015 5:00 PM	May 7, 2015 5:00 PM	\$0	
741	083740	Replace steel on west end of economizer hopper	24 h	736	GC[300%]	\$1,000	2000		May 7, 2015 5:00 PM	May 8, 2015 5:00 PM	\$7,840	
742	081495	Remove angle iron from hopper - west primary on 2nd floor	0 h	736		\$0	0		May 7, 2015 5:00 PM	May 7, 2015 5:00 PM	\$0	
743	076945	Repair leak on north side of PB grate ash hopper	0 h	736		\$0	1		May 7, 2015 5:00 PM	May 7, 2015 5:00 PM	\$0	
744	077909	Replace flyash hopper fill valve	0 h	736		\$0	0		May 7, 2015 5:00 PM	May 7, 2015 5:00 PM	\$0	
745	088002	Inspect tubular air heater	24 h	736	ND[200%]	\$0	2000		May 7, 2015 5:00 PM	May 8, 2015 5:00 PM	\$3,840	
746	071494	Repair tubular air heater	72 h	745	GC[800%],ST	\$20,000	2000NWO		May 8, 2015 5:00 PM	May 11, 2015 5:00 PM	\$80,840	
747	088013	Vacuum debris from grates, economizer, and flyash hopper	6 h	736	CL	\$0	2000		May 7, 2015 5:00 PM	May 7, 2015 11:00 PM	\$510	
748		Remove scaffolding inside hoppers	2 h	737	ST[200%]	\$0	2000NWO		May 8, 2015 1:00 AM	May 8, 2015 3:00 AM	\$340	
749		Close door on flue between hoppers	2 h	748	GC	\$0	2000		May 8, 2015 3:00 AM	May 8, 2015 5:00 AM	\$190	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
750		Close doors	1 h	749	GC	\$0	2000		May 8, 2015 5:00 AM	May 8, 2015 6:00 AM	\$95	
751		Remove scaffold to door between hoppers	2 h	750	ST[200%]	\$0	2000NWO		May 8, 2015 6:00 AM	May 8, 2015 8:00 AM	\$340	
752		Close door on SCAH and install new gasket	0 h	662		\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$0	
753	072360	Close door at base of stack	2 h	664	MW	\$10	2000		May 7, 2015 10:00 PM	May 8, 2015 12:00 AM	\$100	
754	087982	Close doors, 1 on 2nd floor air heater, 2 on E 2 on W, 1 on econ hopper, 1 on flyash h	3 h	664	MW	\$0	2000		May 7, 2015 10:00 PM	May 8, 2015 1:00 AM	\$135	
755	087993	Install drum manhole covers, install new gaskets	1 h	630	PF,OP	\$0	2000		May 7, 2015 10:00 AM	May 7, 2015 11:00 AM	\$45	
756		Undo PB waterside CSE and lockout	4 h	5,653	OP,SE	\$0	2000		May 8, 2015 10:00 PM	May 9, 2015 2:00 AM	\$0	
757	087991	Remove blanks PB W/S CSE (see printed work	1 h	756	PF	\$0	2000		May 9, 2015 2:00 AM	May 9, 2015 3:00 AM	\$45	
758		Fill boiler with demineralized water	4 h	757	N1	\$0	2000		May 9, 2015 3:00 AM	May 9, 2015 7:00 AM	\$0	
759		Hydrostatic test	4 h	758	N1,GC,ND	\$0	2000		May 9, 2015 7:00 AM	May 9, 2015 11:00 AM	\$700	
760	088000	Remove scaffolding, lighting, and ventilation from furnace	6 h	759	ST[1,000%]	\$0	2000		May 9, 2015 11:00 AM	May 9, 2015 5:00 PM	\$5,100	
761	087984	Close mandos - furnace, economizer, penthouse, undergrate	4 h	60FF	MW[200%]	\$0	2000		May 9, 2015 1:00 PM	May 9, 2015 5:00 PM	\$360	
762		Close windbox & undergrate doors	1 h	759	GC	\$0	2000		May 9, 2015 11:00 AM	May 9, 2015 12:00 PM	\$95	
763	087986	Install oxygen probe	1 h	759	IM	\$0	2000		May 9, 2015 11:00 AM	May 9, 2015 12:00 PM	\$45	
764	087995	Install bed camera	1 h	759	EL	\$0	2000		May 9, 2015 11:00 AM	May 9, 2015 12:00 PM	\$45	
765		Undo PB fireside CSE and lockout	4 h	760	OP,SE	\$0	2000		May 9, 2015 5:00 PM	May 9, 2015 9:00 PM	\$0	
766	087988	Remove blanks PB F/S CSE (see printed work o	3 h	760	PF,OP	\$0	2000		May 9, 2015 5:00 PM	May 9, 2015 8:00 PM	\$135	
767		Hydrostatic test PB fireside	4 h	766	GC,N1	\$0	2000		May 9, 2015 8:00 PM	May 10, 2015 12:00 AM	\$380	
768												
769		Power Boiler ID Fan	4.42 days			\$0			May 6, 2015 1:00 PM	May 10, 2015 11:00 PM	\$186,590	
770		Test overspeed trip and record RPM	0 h	617		\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
771		Lockout PB ID fan (only valve upstream of inlet valve)	1 h	770		\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 2:00 PM	\$0	
772	088016	Replace PB ID fan runner	96 h	771	GC[800%],ST[	\$80,000	2000		May 6, 2015 2:00 PM	May 10, 2015 2:00 PM	\$169,280	
773	089550	Repair ID fan casing leaks	36 h	771	GC,ST	\$3,000	2000		May 6, 2015 2:00 PM	May 8, 2015 2:00 AM	\$9,480	
774	076560	Replace ID fan inlet and discharge expansion joints	0 h	771		\$0	1		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
775	088109	Repair steam leaks at PB ID fan (see printed work order)	12 h	771	PF,WE	\$0	2000		May 6, 2015 2:00 PM	May 7, 2015 2:00 AM	\$1,080	
776	073868	Repair steam leak under throttle valve downstream directly under coupling	0 h	771		\$0	1		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
777	089524	Remove, rebuild and replace safety valve on discharge steam line	4 h	771	SC,PF	\$2,000	2000		May 6, 2015 2:00 PM	May 6, 2015 6:00 PM	\$2,680	
778	080608	Inspect bearings, couplings, trip and throttle valve, inner bushing	12 h	771	SC,MW	\$0	2000		May 6, 2015 2:00 PM	May 7, 2015 2:00 AM	\$2,040	
779		Inspect gearbox	0 h	771		\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
780	088017	Change oil & filters	2 h	771	MW[200%]	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 4:00 PM	\$180	
781	088023	Inspect 0.060" orifice, governor to turbine thrust bearing	1 h	780	MW	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 5:00 PM	\$45	
782	088019	Calibrate lube oil pressure alarm & trip	1 h	3,781	IM	\$0	2000		May 10, 2015 2:00 PM	May 10, 2015 3:00 PM	\$45	
783	080658	Replace woodward governor	0 h	771		\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
784		Unlock PB ID fan	1 h	2,633		\$0	2000		May 10, 2015 2:00 PM	May 10, 2015 3:00 PM	\$0	
785	088021	Balance fan dynamically	8 h	4,765	SC,GC,N1,SE	\$0	2000		May 10, 2015 3:00 PM	May 10, 2015 11:00 PM	\$1,760	
786												
787		Power Boiler FD Fan	3.33 days			\$0			May 6, 2015 1:00 PM	May 9, 2015 9:00 PM	\$4,675	
788		Test overspeed trip and record RPM	0 h	617		\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 1:00 PM	\$0	
789		Lockout PB FD fan	1 h	788		\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 2:00 PM	\$0	
790	089069	Repair condensate leak on the 625# throttle valve downstream drain line	4 h	789	WE,PF	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 6:00 PM	\$360	
791	089132	Install new expansion joint and slide gate air cylinder	20 h	789	MW,WE	\$0	2000		May 6, 2015 2:00 PM	May 7, 2015 10:00 AM	\$1,800	
792	088028	Remove access cover from fan casing	1 h	789	MW	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 3:00 PM	\$45	
793	088029	Inspect fan and casing	2 h	792	ND	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 5:00 PM	\$160	
794	088025	Inspect turbine, fan, bearings, couplings, steam trip and throttle valve, lube system, ge	12 h	789	MW,SC	\$0	2000		May 6, 2015 2:00 PM	May 7, 2015 2:00 AM	\$2,040	
795		Inspect gearbox	0 h	789		\$0	0		May 6, 2015 2:00 PM	May 6, 2015 2:00 PM	\$0	
796	088024	Change oil & filters	2 h	789	MW[200%]	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 4:00 PM	\$180	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
797	070070	Inspect gear driven lube oil pump on turbine	0 h	796		\$0	0		May 6, 2015 4:00 PM	May 6, 2015 4:00 PM	\$0	
798	088031	Inspect 0.060" orifice, governor to turbine thrust bearing	1 h	797	MW	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 5:00 PM	\$45	
799	088026	Calibrate lube oil pressure alarm & trip	0 h	798		\$0	0		May 6, 2015 5:00 PM	May 6, 2015 5:00 PM	\$0	
800	088030	Close access cover, replace gasket	1 h	793	MW	\$0	2000		May 6, 2015 5:00 PM	May 6, 2015 6:00 PM	\$45	
801		Tighten all hold down and frame bolts including turbine; align turbine to gearbox	4 h	800		\$0	2000		May 6, 2015 6:00 PM	May 6, 2015 10:00 PM	\$0	
802		Unlock PB FD fan	1 h	3,801		\$0	2000		May 6, 2015 10:00 PM	May 6, 2015 11:00 PM	\$0	
803	089551	Balance fan dynamically	0 h	2,765		\$0	2000		May 9, 2015 9:00 PM	May 9, 2015 9:00 PM	\$0	
804												
805		Foul Gas Fan	0.04 days			\$0			May 6, 2015 8:00 PM	May 6, 2015 9:00 PM	\$45	
806		Lockout foul gas fan	0 h	3,641	OP	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
807	072365	Pressurize piping and check for leaks	0 h	806		\$0	2000NWO		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
808	088080	Inspect belts, bearings, and rotor	1 h	806	MW	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 9:00 PM	\$45	
809	074731	Replace valve SSV33-033 in recaust alleyway	0 h	806		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
810		Unlock foul gas fan	0 h	7,808	OP	\$0	2000		May 6, 2015 9:00 PM	May 6, 2015 9:00 PM	\$0	
811												
812		Deaerator and Feed water Storage	2.13 days			\$0			May 6, 2015 9:00 AM	May 8, 2015 12:00 PM	\$24,804	
813		Depressurize & open vents	1 h	621	N1	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
814		Drain deaerators and feedwater storage	2 h	813	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 12:00 PM	\$0	
815	088051	Open manddoors on feedwater storage and deaerator	2 h	814	MW[200%]	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 2:00 PM	\$180	
816		Lockout for blanking, DA & FW STG CSE	2 h	814	OP,SE	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 2:00 PM	\$0	
817		Install blanks	2 h	816	OP,SE,PF	\$0	2000		May 6, 2015 2:00 PM	May 6, 2015 4:00 PM	\$90	
818		Complete DA & FW STG CSE and lockout	4 h	817	OP,SE	\$0	2000		May 6, 2015 4:00 PM	May 6, 2015 8:00 PM	\$0	
819		Gas test and hatchwatch DA & FW STG	12 h	818	GT	\$1,000	2000		May 6, 2015 8:00 PM	May 7, 2015 8:00 AM	\$1,744	
820	088053	NDT inspect #1 deaerator	4 h	818	ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$320	
821	088050	NDT inspect #2 deaerator	4 h	818	ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 12:00 AM	\$320	
822	088054	NDT inspect feedwater storage tank	8 h	818	ND	\$0	2000		May 6, 2015 8:00 PM	May 7, 2015 4:00 AM	\$640	
823	075568	Install flow elements and control valves for feedwater feed to deaerators	0 h	814		\$0	1		May 6, 2015 12:00 PM	May 6, 2015 12:00 PM	\$0	
824	043185	Replace gasket on blanked steam valve to DA on west of south DA	0 h	818		\$0	1		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
825	075401	Replace gasket and fix leak on downcomer of #2 DA head	0 h	818		\$0	0		May 6, 2015 8:00 PM	May 6, 2015 8:00 PM	\$0	
826	070485	Finish #4 KSB pump, regrout the base	36 h	818	GC[400%],ST,	\$0	2000NWO		May 6, 2015 8:00 PM	May 8, 2015 8:00 AM	\$21,240	
827	088052	Close manhole doors, install new gaskets	2 h	826	MW[200%]	\$0	2000		May 8, 2015 8:00 AM	May 8, 2015 10:00 AM	\$180	
828		Undo DA & FW STG CSE and lockout	2 h	827	OP,SE,PF	\$0	2000		May 8, 2015 10:00 AM	May 8, 2015 12:00 PM	\$90	
829												
830		Condensate Tank	1.67 days			\$0			May 6, 2015 9:00 AM	May 8, 2015 1:00 AM	\$13,893	
831		Drain tank	2 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
832		Isolate tank	1 h	831	OP	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$0	
833		Open top manhole	0 h	832		\$0			May 6, 2015 12:00 PM	May 6, 2015 12:00 PM	\$0	
834		Lockout for blanking, condensate tank	1 h	833	OP,SE	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 1:00 PM	\$0	
835	088047	Install blanks	8 h	834	PF	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 9:00 PM	\$360	
836		Complete condensate tank CSE and lockout	4 h	3,835	OP,SE,PF[200	\$0	2000		May 6, 2015 9:00 PM	May 7, 2015 1:00 AM	\$360	
837		Gas test and hatchwatch condensate tank	24 h	836	GT	\$1,000	2000		May 7, 2015 1:00 AM	May 8, 2015 1:00 AM	\$2,488	
838		Install larger manhole on condensate tank	24 h	836	GC[200%],ND	\$1,000	2000NWO		May 7, 2015 1:00 AM	May 8, 2015 1:00 AM	\$7,480	
839	088049	NDT inspect condensate tank	8 h	836	ND[200%]	\$0	2000		May 7, 2015 1:00 AM	May 7, 2015 9:00 AM	\$1,280	
840	089553	Repair cracks in condensate tank	8 h	836	GC[200%]	\$0	2000		May 7, 2015 1:00 AM	May 7, 2015 9:00 AM	\$1,520	
841		Undo condensate tank CSE and lockout	4 h	3,839	OP,SE	\$0	2000		May 7, 2015 9:00 AM	May 7, 2015 1:00 PM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nf
842	088048	Remove blanks	8 h	841	PF	\$0	2000		May 7, 2015 1:00 PM	May 7, 2015 9:00 PM	\$360	
843		Close top manhole	1 h	842	PF	\$0	2000		May 7, 2015 9:00 PM	May 7, 2015 10:00 PM	\$45	
844												
845		Decarbonator Tank	0.38 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 6:00 PM	\$685	
846		Drain tank	2 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
847		Isolate tank	1 h	846	OP	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$0	
848	088035	Open manhole	1 h	847		\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 1:00 PM	\$0	
849	072341	NDT inspect decarbonator tank	4 h	848	ND[200%]	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 5:00 PM	\$640	
850	088034	Close manhole, install new gaskets	1 h	849	PF	\$0	2000		May 6, 2015 5:00 PM	May 6, 2015 6:00 PM	\$45	
851												
852		Htg &Vent Condensate Drain Tank1	0.21 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 2:00 PM	\$170	
853		Drain tank	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
854		Isolate tank	1 h	853	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 11:00 AM	\$0	
855	067983	Open manhole cover on tank	1 h	854	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$45	
856	088036	NDT inspect tank	1 h	855	ND	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 1:00 PM	\$80	
857	088037	Close manhole, install new gaskets	1 h	856	PF	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 2:00 PM	\$45	
858												
859		Htg &Vent Condensate Drain Tank2	0.17 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 1:00 PM	\$90	
860		Drain tank	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
861		Isolate tank	1 h	860	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 11:00 AM	\$0	
862	088038	Open manhole cover on tank	1 h	861	PF	\$0	2000		May 6, 2015 11:00 AM	May 6, 2015 12:00 PM	\$45	
863		NDT inspect tank	0 h	862	ND[200%]	\$0	2000NWO		May 6, 2015 12:00 PM	May 6, 2015 12:00 PM	\$0	
864	088039	Close manhole, install new gaskets	1 h	863	PF	\$0	2000		May 6, 2015 12:00 PM	May 6, 2015 1:00 PM	\$45	
865												
866		Condensate trap Tank	0.08 days			\$0			May 6, 2015 9:00 AM	May 6, 2015 11:00 AM	\$0	
867		Drain tank	1 h	621	OP	\$0	2000		May 6, 2015 9:00 AM	May 6, 2015 10:00 AM	\$0	
868		Isolate tank	1 h	867	OP	\$0	2000		May 6, 2015 10:00 AM	May 6, 2015 11:00 AM	\$0	
869	087952	Open manhole	0 h	868		\$0	2000NWO		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
870	088041	NDT inspect tank	0 h	869		\$0	2000NWO		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
871	088042	Close manhole, install new gaskets	0 h	870		\$0	2000NWO		May 6, 2015 11:00 AM	May 6, 2015 11:00 AM	\$0	
872												

ID	W. O. #	Task	Duration	Predc	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
873		Turbine Generator	4.25 days			\$0			May 5, 2015 7:00 AM	May 9, 2015 1:00 PM	\$15,940	
874		Isolate TG	2 h	84	OP	\$0	2000		May 5, 2015 7:00 AM	May 5, 2015 9:00 AM	\$0	
875		Inspect/replace oil as required	4 h	874	OP	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$0	
876	088068	Assist with repairs to turbine	15 h	874	IM[600%]	\$0	2000		May 5, 2015 9:00 AM	May 6, 2015 12:00 AM	\$4,050	
877	088069	Assist with repairs to turbine	15 h	874	MW[600%]	\$0	2000		May 5, 2015 9:00 AM	May 6, 2015 12:00 AM	\$4,050	
878	073943	Replace the seal stripping on the generator access doors on the TG deck	0 h	874		\$0	0		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
879	077019	Replace generator air outlet temperature gauge	2 h	874	IM	\$200	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$290	
880	067859	Clean high voltage generator leads	2 h	874	EE	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$0	
881	071799	Inspect DC motor on emergency oil pump to TG; replace staged DC motor starter	0 h	874		\$0	0		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
882	073588	Replace two valves on cooling water line to the generator inlet air control system	0 h	874		\$0	0		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
883	069120	Inspect the bearing temperature RTDs	4 h	874	IM	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$180	
884	078975	Calibrate PS110 from 130 psi falling to 150 psi falling to start other oil pump (also PS0	0 h	874		\$0	0		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
885	078976	Display TG Oil pressure on control room chart	0 h	874		\$0	0		May 5, 2015 9:00 AM	May 5, 2015 9:00 AM	\$0	
886	085842	Install a pressure gauge and an inline "Y" filter on water supply to TG loop seal	6 h	874	CA[67%],PF,V	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 3:00 PM	\$540	
887	083959	Install valve to allow balancing of vacuum from the gland condenser	4 h	874	PF	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$180	
888	085367	Install low temp alarm on TG lube oil reservoir; set to 45C	8 h	874	IM	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 5:00 PM	\$360	
889	088062	Calibrate all temperature and pressure transmitters at TG panel	8 h	874	IM[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 5:00 PM	\$720	
890	088063	Calibrate oil switches related to TG actuator skid	4 h	874	IM[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$360	
891	088064	Calibrate 80 psi and 165 psi transmitters at TG	4 h	874	IM	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$180	
892	088067	Inspect trip and throttle valve	4 h	874	SC	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$500	
893	089002	Inspect 3 oil orifices on TG	2 h	874	IM	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 11:00 AM	\$90	
894	089151	Dismantle, inspect and clean spray nozzle	10 h	874	CA[200%],PF;	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 7:00 PM	\$990	
895	089153	Install valve and pressure gauge on spray water supply line	3 h	874	PF,WE	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 12:00 PM	\$270	
896	089523	Replace thrust pads on TG	12 h	874	SC[200%]	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 9:00 PM	\$3,000	
897	089529	Remove turning gear motor, measure shaft, reinstall	4 h	874	MW	\$0	2000		May 5, 2015 9:00 AM	May 5, 2015 1:00 PM	\$180	
898		Operate turning gear	96 h	5,878	OP	\$0	2000		May 5, 2015 1:00 PM	May 9, 2015 1:00 PM	\$0	
899												
900		Filtered Water System	3.17 days			\$0			May 5, 2015 3:00 AM	May 8, 2015 7:00 AM	\$90	
901		Connect potable water to fire system	0 h			\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
902		Lockout filtered water system	0 h	40 h		\$0	2000		May 8, 2015 5:00 AM	May 8, 2015 5:00 AM	\$0	
903	066787	Remove obstruction between filter building and chemical unloading	0 h	902		\$0	2000NWO		May 8, 2015 5:00 AM	May 8, 2015 5:00 AM	\$0	
904	068367	Install prefabbed pipe for mill water system (Earnie/Earl)	0 h	902		\$0	0		May 8, 2015 5:00 AM	May 8, 2015 5:00 AM	\$0	
905	083814	Replace outlet valve on #2 cation	2 h	902	PF	\$0	2000		May 8, 2015 5:00 AM	May 8, 2015 7:00 AM	\$90	
906	070162	Repair/replace service outlet valves on all three cation units	0 h	902		\$0	0		May 8, 2015 5:00 AM	May 8, 2015 5:00 AM	\$0	
907	066746	Replace bypass valve for organic traps with a gate valve	0 h	902		\$0	0		May 8, 2015 5:00 AM	May 8, 2015 5:00 AM	\$0	
908		Undo lockout filtered water system	0 h	3,907		\$0	2000		May 8, 2015 7:00 AM	May 8, 2015 7:00 AM	\$0	
909		Fill water lines	0 h	908		\$0	2000		May 8, 2015 7:00 AM	May 8, 2015 7:00 AM	\$0	
910												
911		Mill Water System	0.17 days			\$0			May 5, 2015 3:00 AM	May 5, 2015 7:00 AM	\$0	
912		Connect potable water to fire system	2 h	913	OP	\$0	2000		May 5, 2015 4:00 AM	May 5, 2015 6:00 AM	\$0	
913		Lockout mill water system	1 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 4:00 AM	\$0	
914	061850	Repair/replace cold water suction valve to the seal and gland water pump, yoke is brok	0 h	913		\$0	1		May 5, 2015 4:00 AM	May 5, 2015 4:00 AM	\$0	
915	069974	Replace motor for seal and gland water pump	0 h	913		\$0	2000NWO		May 5, 2015 4:00 AM	May 5, 2015 4:00 AM	\$0	
916	069520	Replace manual isolation valve on de-sup water to 165 psi steam header (4th floor)	0 h	913		\$0	0		May 5, 2015 4:00 AM	May 5, 2015 4:00 AM	\$0	
917		Undo lockout mill water system	1 h	5,916	OP	\$0	2000		May 5, 2015 4:00 AM	May 5, 2015 5:00 AM	\$0	
918		Fill water lines	2 h	917	OP	\$0	2000		May 5, 2015 5:00 AM	May 5, 2015 7:00 AM	\$0	
919												
920		Demineralized Water Storage	1.38 days			\$0			May 6, 2015 8:00 PM	May 8, 2015 5:00 AM	\$4,018	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
921	088043	Open manhole at bottom of tank	1 h	7,626	MW	\$0	2000		May 6, 2015 8:00 PM	May 6, 2015 9:00 PM	\$45	
922		Lockout for blanking, DMWS tank	2 h	921	OP,SE	\$0	2000		May 6, 2015 9:00 PM	May 6, 2015 11:00 PM	\$0	
923		Install blanks	2 h	922	OP,SE,PF	\$0	2000		May 6, 2015 11:00 PM	May 7, 2015 1:00 AM	\$90	
924		Complete CSE and lockout, DMWS tank	4 h	923	OP,SE	\$0	2000		May 7, 2015 1:00 AM	May 7, 2015 5:00 AM	\$0	
925		Gas test and hatchwatch DMWS tank	24 h	924	GT	\$1,000	2000		May 7, 2015 5:00 AM	May 8, 2015 5:00 AM	\$2,488	
926	088044	Inspect tank internals	12 h	924	ME	\$0	2000		May 7, 2015 5:00 AM	May 7, 2015 5:00 PM	\$0	
927	088046	Calibrate level control valve and transmitter	4 h	924	IM	\$0	2000		May 7, 2015 5:00 AM	May 7, 2015 9:00 AM	\$180	
928	078234	Repair pinhole leak in demineralized water line, above pumps at 4" Tee	0 h	922		\$0	1		May 6, 2015 11:00 PM	May 6, 2015 11:00 PM	\$0	
929	078275	Replace 40-60 ft. section of spiral wound pipe, at pump discharge	0 h	922	PF,WE	\$0	2000NWO		May 6, 2015 11:00 PM	May 6, 2015 11:00 PM	\$0	
930	072709	Replace 625 psi inlet valve to demin turbine	0 h	922		\$0	1		May 6, 2015 11:00 PM	May 6, 2015 11:00 PM	\$0	
931	075492	Replace/repair leak in pipe at pump discharge pipe at romack clamp	0 h	922		\$0	1		May 6, 2015 11:00 PM	May 6, 2015 11:00 PM	\$0	
932	079990	Calibrate level control valve and transmitter	0 h	924		\$0	2000NWO		May 7, 2015 5:00 AM	May 7, 2015 5:00 AM	\$0	
933	085815	Install a manual bypass around demin storage LCV	12 h	922	PF,WE	\$0	2000		May 6, 2015 11:00 PM	May 7, 2015 11:00 AM	\$1,080	
934	084135	Replace demin pump turbine with a motor	0 h	921		\$0	0		May 6, 2015 9:00 PM	May 6, 2015 9:00 PM	\$0	
935		Undo DMWS tank CSE and lockout	2 h	926	OP,SE,PF	\$0	2000		May 7, 2015 5:00 PM	May 7, 2015 7:00 PM	\$90	
936	088045	Close manhole at bottom of tank (new gasket)	1 h	926	MW	\$0	2000		May 7, 2015 5:00 PM	May 7, 2015 6:00 PM	\$45	
937												
938		Effluent Treatment System	4.67 days			\$0			May 5, 2015 3:00 AM	May 9, 2015 7:00 PM	\$53,300	
939		Continue operating aerators	96 h		N1	\$0	2000		May 5, 2015 3:00 AM	May 9, 2015 3:00 AM	\$0	
940		Monitor acid sewer pH	96 h		PE	\$0	2000		May 5, 2015 3:00 AM	May 9, 2015 3:00 AM	\$0	
941		Coordinate acid tank truck at cell #2 if req'd	8 h		PE	\$0	2000		May 5, 2015 3:00 AM	May 5, 2015 11:00 AM	\$0	
942		Operate coil filter per normal operating procedure	40 h		OP	\$0	2000		May 5, 2015 3:00 AM	May 6, 2015 7:00 PM	\$0	
943		Lock out the three clarifier infeed lift pumps	0 h			\$0	1		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
944		Weld 2" nipple, valve on top of clarifier infeed header, open valve	0 h	943		\$0	1		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
945		Open clarifier drain valve and empty as much out of clarifier as possible	0 h	942		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
946		Operate sludge pumps at maximum flow to empty rest of clarifier;overflow coil filter vat	0 h	945		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
947		Wash out clarifier bottom with fire hoses	0 h	945		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
948		Lock out clarifier rakes	0 h	947		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
949		Lock out sludge pumps	0 h	947		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
950		Vacuum or pump out clarifier feedwell and 48" infeed line	0 h	945		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
951		Remove 36" clarifier infeed isolation valve	0 h	950		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
952		Install 36" blank at upstream side of valve	0 h	951		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
953		Install 4" nipple, valve and camlock fitting suitable for vacuum hose just upstream from	0 h	952		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
954		Open clarifier bypass valve slowly	0 h	953		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
955		Bleed air out of clarifier infeed lift pumps header	0 h	954		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
956		Unlock the three clarifier infeed lift pumps	0 h	955		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
957		Close clarifier bypass valve; open only during dump pond level lowering	0 h	956		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
958		Complete CSE and lockout, Clarifier	0 h	952		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
959		Gas test and hatchwatch Clarifier	0 h	952		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
960		Install staging to access clarifier bottom	0 h	958		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
961		Cut hole in feedwell to access inlet elbow	0 h	960		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
962		Gas test and hatchwatch Clarifier inlet elbow	0 h	961		\$0	1		May 6, 2015 7:00 PM	May 6, 2015 7:00 PM	\$0	
963	067357	Inspect repair line from clarifier pumphouse to clarifier	72 h	961	SC,GC[400%],	\$10,000	2000NWO		May 6, 2015 7:00 PM	May 9, 2015 7:00 PM	\$52,120	
964	084564	Repair leak in cover of effluent line at biobasin	4 h	942	PF	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 11:00 PM	\$180	
965		Lower the dump level if required	0 h	63FF		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
966		Close clarifier bypass valve	0 h	965		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	utpt	Earliest Start	Earliest Finish	Cost	nr
967		Lock out the three clarifier infeed lift pumps	0 h	66FF		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
968		Open vent at clarifier infeed header	0 h	967		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
969		Vacuum line from header to 36" blank	0 h	968		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
970		Remove blank	0 h	969		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
971		Install 36" valve, in the closed position	0 h	970		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
972		Ensure vent at clarifier infeed header is still open	0 h	71FF		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
973		Open clarifier bypass slowly to fill line from header to 36" valve	0 h	971		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
974		Close clarifier bypass valve	0 h	973		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
975		Unlock the three clarifier infeed lift pumps	0 h	974		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
976		Unlock clarifier rakes	0 h	75FF		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
977		Start lift pumps and open 36" valve carefully	0 h	975		\$0	1		May 9, 2015 7:00 PM	May 9, 2015 7:00 PM	\$0	
978	069403	Replace by-pass valve for clarifier	0 h			\$0	0		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
979	074254	Enlarge existing ring gear inspection port on clarifier	6 h	948	MW,WE	\$100	2000		May 6, 2015 7:00 PM	May 7, 2015 1:00 AM	\$640	
980		Lubricate and inspect oil levels	4 h	945	MW	\$0	2000NWO		May 6, 2015 7:00 PM	May 6, 2015 11:00 PM	\$180	
981	079080	Inspect clarifier rake structural and wear strips	4 h	958	MW	\$0	2000		May 6, 2015 7:00 PM	May 6, 2015 11:00 PM	\$180	
982	067356	Inspect and repair fiberglass piping where acid line enters #2 cell	0 h			\$0	2000NWO		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
983	081561	Install MCC section at biobasin	0 h			\$0	1		May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
984												
985		Air Compressors	1 day			\$0			May 8, 2015 12:00 AM	May 9, 2015 12:00 AM	\$2,040	
986		Prepare to install temporary air compressors	0 h	-12 h		\$0	0		May 8, 2015 12:00 AM	May 8, 2015 12:00 AM	\$0	
987		Shutdown and lockout air compressors	0 h	+40 h		\$0	1		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
988		Install portable air compressors	0 h	987		\$0	0		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
989	073860	Repair mill air systems	0 h	987		\$0	0		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
990	080055	Replace high air temp switch on #1 air compressor	0 h	987		\$0	0		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
991	080056	Replace air outlet valve on #1 air compressor	0 h	987		\$0	0		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
992	080057	Replace air outlet valve on turbine air compressor	0 h	987		\$0	0		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
993	080084	Replace leaking valves at cannister air filter at wall of 1st fir MCC	0 h	987		\$0	1		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
994	080851	Replace all discharge valves with 4" SS gate valves (some piping mod req'd)	0 h	987		\$0	1		May 8, 2015 12:00 PM	May 8, 2015 12:00 PM	\$0	
995	081723	Replace 625# block valve to #2 air compressor turbine	12 h	994	PF,WE,ND	\$0	2000		May 8, 2015 12:00 PM	May 9, 2015 12:00 AM	\$2,040	
996		Remove portable air compressors	0 h	995		\$0	0		May 9, 2015 12:00 AM	May 9, 2015 12:00 AM	\$0	
997		Undo lockout of air compressors	0 h	996		\$0	1		May 9, 2015 12:00 AM	May 9, 2015 12:00 AM	\$0	
998		Start mill air compressors	0 h	997		\$0	1		May 9, 2015 12:00 AM	May 9, 2015 12:00 AM	\$0	
999												
1000		Power Distribution System	1 day			\$0			May 6, 2015 7:00 AM	May 7, 2015 7:00 AM	\$28,655	
1001	087822	Install temporary lighting to P&R, protection, and lunchrooms	6 h	147	EL	\$0	2000		May 6, 2015 7:00 AM	May 6, 2015 1:00 PM	\$270	
1002	079170	Shutdown UPS power prior to power outage	1 h	1001	EL	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 2:00 PM	\$45	
1003	087823	Disconnect capacitors from service	2 h	1001	EL	\$0	2000		May 6, 2015 1:00 PM	May 6, 2015 3:00 PM	\$90	
1004	081521	Wipe capacitor banks with dry cloth	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1005	072414	Replace fuses PT to tap changer	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1006	072412	Test OCB per BC Hydro Contract	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1007	087826	Repair MCC and PDC hot spots	16 h	1003	EL,EE	\$2,000	2000		May 6, 2015 3:00 PM	May 7, 2015 7:00 AM	\$2,720	
1008		Inspect tap changer, main transformer	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1009	067860	Overhaul oil filter for main transformer tap changer	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1010	069218	Replace desiccant main transformer air breather	2 h	1003	EE,EL	\$500	2000		May 6, 2015 3:00 PM	May 6, 2015 5:00 PM	\$590	
1011	079953	Replace Buckholtz sudden gas pressure relay - main transformer	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1012	080502	Install dry type transformer in Transformer T7-1 3.0 MVA	0 h	1003		\$0	1999		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1013	080506	Repair hot spots 60-1044, 1020, 1013, 1016, 1015; inspect size 4 & 5 starters	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1014	080509	Repair the CT on the 4-2 PDC	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	

ID	W. O. #	Task	Duration	Predt	People	Material Cost	Do?	lutpt	Earliest Start	Earliest Finish	Cost	nr
1015	080510	Repair hot spots in effluent MCC 07-1, 07-2	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1016	080507	Repair hot spots in recovery MCC 66-1 per list	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1017	080508	Repair hot spots in recovery MCC 69-1 per list	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1018	079963	Test the ground fault protection on transformer T6-1A	2 h	1003	EE	\$5,000	2000		May 6, 2015 3:00 PM	May 6, 2015 5:00 PM	\$5,000	
1019	079964	Change the ground current meters on T4 PDC breakers, PDC-4-2 power group	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1020	079967	Inspect PDC breakers 38-2, 38-3, 38-4	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1021	079986	Install the vacuum breaker in cell 10 and cell 2	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1022	080900	Test core ground on transformer T9-1 Machine room	4 h	1003	EE	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 7:00 PM	\$0	
1023	079965	Inspect 138 kV breaker, check protection	4 h	1003	EE	\$5,000	2000		May 6, 2015 3:00 PM	May 6, 2015 7:00 PM	\$5,000	
1024		Inspect cells #1 - #10 breakers	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1025		Clean (vacuum) bus bar 13.8 kV distribution system	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1026	079966	Perform protection checks on cells #1 to #10 13.8 kV breakers, FDR 4-2A	4 h	1003	EE	\$14,000	2000		May 6, 2015 3:00 PM	May 6, 2015 7:00 PM	\$14,000	
1027	079973	Complete electrical tie-ins on portable welding units	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1028		Clean transformers	0 h	1003		\$0	2000NWO		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1029		Calibrate power meters	0 h	1003		\$0	0		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1030	067864	Replace ground fault meters on transformers behind P&R air compressor room	4 h	1003	EE,EL[200%]	\$400	2000		May 6, 2015 3:00 PM	May 6, 2015 7:00 PM	\$760	
1031	076024	Repair #6 lug on panel 72B in P&R control room	0 h	1003		\$0	1		May 6, 2015 3:00 PM	May 6, 2015 3:00 PM	\$0	
1032	081914	Calibrate P&R high voltage protection relays; post status stickers	12 h	1003	EE	\$0	2000		May 6, 2015 3:00 PM	May 7, 2015 3:00 AM	\$0	
1033	079171	Reconnect capacitors	2 h	1003	EL	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 5:00 PM	\$90	
1034		Reconnect UPS power	1 h	1003	EL	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 4:00 PM	\$45	
1035		Remove temporary lighting to P&R, protection, and lunchrooms	1 h	1003	EL	\$0	2000		May 6, 2015 3:00 PM	May 6, 2015 4:00 PM	\$45	
1036												
1037		Post Shutdown General Startup	8.71 days			\$0			May 5, 2015 3:00 AM	May 13, 2015 8:00 PM	\$0	
1038		Make demineralized water	4 h	3,785	N1	\$0	2000		May 10, 2015 11:00 PM	May 11, 2015 3:00 AM	\$0	
1039		Fill DA with water	4 h	1038	N1	\$0	2000		May 11, 2015 3:00 AM	May 11, 2015 7:00 AM	\$0	
1040		Fill PB with water	6 h	1039	N1	\$0	2000		May 11, 2015 7:00 AM	May 11, 2015 1:00 PM	\$0	
1041		Establish fire in PB	2 h	1040	N1	\$0	2000		May 11, 2015 1:00 PM	May 11, 2015 3:00 PM	\$0	
1042		Warm-up PB	8 h	1041	N1	\$0	2000		May 11, 2015 3:00 PM	May 11, 2015 11:00 PM	\$0	
1043		Warm-up evaporators	4 h	2,527	N1	\$0	2000		May 11, 2015 11:00 PM	May 12, 2015 3:00 AM	\$0	
1044		Make strong black liquor for startup	4 h	1043	N1	\$0	2000		May 12, 2015 3:00 AM	May 12, 2015 7:00 AM	\$0	
1045	079129	Inspect all steam piping, valves, packing in P&R	0 h	258		\$0	2000NWO		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1046	087858	Provide shift coverage for P&R startup	0 h	258	EL,IM,MW	\$0	2000		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1047	079185	Inspect and repair scanners on RB natural gas burners	0 h	258		\$0	2000NWO		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1048		Tune boiler level control at startup (re: annubar 9th floor)	0 h	258		\$0	2000NWO		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1049	078050	Calibrate liquor flow to burners	0 h	258	IM	\$0	2000		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1050	078948	Blowdown feedwater flow transmitter	0 h	258		\$0	0		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1051	074102	Calibrate recovery boiler steam flow	0 h	258	IM	\$0	2000		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1052	088066	Remove scaffolding to provide access to three TG safety valves	0 h	258	CA	\$0	2000		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1053		Send woodward governors away for rebuild	0 h	258		\$0	2000		May 13, 2015 8:00 PM	May 13, 2015 8:00 PM	\$0	
1054												
1055												
1056		IBLH: inspected 1996; next due 1999	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1057		Emerg BD Tk: inspected 1996; next due 1999	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1058		Demin Water Tk: inspected 1996; next due 1998	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1059		CBD Flash Tk: next due 1998	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1060		#1 & #2 H&V Cond Tks: next due 1998	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1061		Evaps Seal Tk: inspected 1996; next due 2001	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	
1062		Decarbonator Tank: next due 1998	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	

ID	W. O. #	Task	Duration	Pred	People	Material Cost	Do?	Output	Earliest Start	Earliest Finish	Cost	Ref
1063		P.B. Cond. Trap Tk: next due 1998	0 h			\$0			May 5, 2015 3:00 AM	May 5, 2015 3:00 AM	\$0	