ATTACHMENT 5-3

COMBINED ASH SAMPLING LOG

DATE: _____

SAMPLE COLLECTION								
SHIFT SAMPLE	SAMPLE TIME	FLYASH ON / OFF		BOTTOM ASH ON / OFF		Any By-Pass Ash NO	YES	OPERATOR
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								

COLLECT A MAXIMUM OF 24 SAMPLES AND A MINIMUM OF 18. IF A SAMPLE TIME IS MISSED, JUST CONTINUE AT THE NEXT SAMPLING TIME.

SECTION 6

COVANTA NIAGARA, L.P.

NIAGARA RESOURCE RECOVERY FACILITY

OPERATIONS AND FACILITY INSPECTION PLAN

SECTION 6

COVANTA NIAGARA

OPERATIONS AND FACILITY INSPECTION PLAN

6.6 OPERATIONS GROUP PERIODIC EQUIPMENT INSPECTIONS

6.7 MAJOR REVISIONS TO THE OPERATIONS AND FACILITY INSPECTION PLAN

SECTION 6

OPERATIONS AND FACILITY INSPECTION PLAN

LIST OF ATTACHMENTS

OPERATIONS MONITORING AND FACILITY INSPECTION PLAN

6.1 INTRODUCTION

The purpose of this plan is to overview the operations and facility inspection monitoring and inspection procedures undertaken by Covanta Niagara facility personnel as required by 6 NYCRR Part 360 3.3(h).

6.2 DAILY MONITORING AND INSPECTION

In order to discover and correct any equipment malfunctions/deteriorations, operator errors, or emissions that may threaten the environment or human health, the facility has an on-going daily monitoring and inspection program. The baseline equipment evaluation is done through operator logs which are filled out by operating personnel on a daily basis. Inspections conducted per EMIS should be submitted to the plant environmental engineer upon completion.

6.3 OPERATIONS WATCHSTATIONS

6.3.1 SHIFT SUPERVISOR

The shift supervisor is responsible for operating the facility in a safe, environmentally correct, and efficient manner on a day to day basis through the activities of the personnel on his shift. These activities include: waste receipts, waste combustion, steam generation, electric power generation, steam distribution, air pollution control system operations, ash residue handling/processing/loadout, and ferrous and nonferrous metals recovery. All of the shift supervisors are required to obtain the full qualified refuse operator (QRO) certification from the American Society of Mechanical Engineers.

The shift supervisor monitors the operation of the facility through verbal reports and written logs received from the control room and field operating technicians, as well as his own inspections of the process equipment. If a piece of equipment is reported to be in need of repair, the shift supervisor is responsible for ensuring that a work order request gets submitted on the Maximo maintenance control computer system.

When a piece of equipment requires maintenance, it is the responsibility of the shift supervisor to ensure that the equipment is properly prepared for maintenance personnel. This usually requires locking out (ensuring that the equipment is isolated

and can be safely worked on) the equipment and may further require that the shift supervisor reviews piping and instrument drawings to ensure a proper lockout.

The shift supervisor reports directly to the operations superintendent and prepares the production report (Attachment 6-1) at the end of the shift which contains a summary of production related information and shows the facility's upper management the status of the plant. In addition to the shift report, the shift supervisor maintains a log (Attachment 6-2) during the shift that is intended to contain notes of operational and maintenance events that occurred during the shift. For example, if production were interrupted due to equipment malfunction, the log would describe the events (what time, what happened, what corrective actions were taken, how long it took to correct, etc.). At shift change the log is reviewed by the outgoing and oncoming shift supervisors.

6.3.2 CONTROL ROOM OPERATOR

The control room operator (CRO) is the senior operator on shift, and is directly responsible for the safe, efficient and environmentally acceptable operation of the boilers, turbine generators, electrical distribution and a majority of the plant auxiliary equipment. At Covanta Niagara, all CROs must hold a valid fireman’s class license issued by the City of Niagara Falls. This license indicates that the CRO has successfully completed testing in basic design, construction, and operation of boilers, turbines and associated equipment. In addition, all the Covanta Niagara CROs are required to obtain, at a minimum, the provisional QRO certification from the American Society of Mechanical Engineers. Several of the CROs have completed the full certification.

The CRO monitors and controls equipment using a state of the art Bailey controls system. From the Bailey control system the CRO can monitor parameters, adjust setpoints on control equipment, and start and stop most equipment associated with the boilers, the air pollution control system, and the facility's auxiliary support equipment. The CRO will also be able to monitor the stack emissions from the continuous emission monitoring system's PC that is in the control room. The CRO will be able to call up screens that will indicate instantaneous parameter concentrations and mass emissions, as well as various averaging mass emissions. The PC will also alarm to warn the CRO if a parameter is approaching a permit limit. The CRO can then take appropriate action to reduce the emission. The CRO has the support of field operators who make reports to the CRO based on field observations. The CRO reports directly to the shift supervisor and completes a daily log book (Attachment 6-3) that is used as a communications tool between the CRO, shift supervisor, and management personnel. Some of the comments that may be included in the CRO's log are:

- Plant operation, status - steam production
- Changes in operating procedures
- Unusual events
- Equipment malfunctions - type, time, cause, corrective actions
- Permit excursions - type, time, cause, corrective actions

In addition, the CRO completes equipment status log sheets (Attachment 6-4) for the equipment under his direct control.

6.3.3 ASSISTANT CONTROL ROOM OPERATION

The assistant control room operator (ACRO) is responsible for monitoring the operation of boiler support equipment such as the combustion fans, gas burners, refuse feed and ash extractor hydraulics, the boiler water and steam systems including the boiler drum, deaerator, and feed pumps, the turbine generator and generator support equipment and various plant auxiliary equipment including fire protection sanitary sewer, plant air and electrical distribution equipment. The ACRO maintains a log (Attachment 6-5) that indicates the operating status of the equipment he is responsible for.

The ACRO makes reports to the control room operator and the shift supervisor regarding operating of plant equipment, particularly noting any discrepancies in the operation of any plant components. The ACRO is usually, but not in all cases, a qualified control room operator and relieves the control room operator as needed during the shift operation. The Covanta Niagara CROs are required to obtain the provisional QRO certification.

6.3.4 BACKEND OPERATOR

The backend operators (BEO) are responsible for monitoring the operation of the environmental controls equipment including the Urea injection (DENOX) system, the lime slaking system, the acid gas removal scrubber, the reverse air fabric filter baghouse, and the flyash conveyance system up to the ash processing building. Like the CRO and ACRO, the BEO maintains a log (Attachment 6-6) that indicates the operating status of the air pollution control equipment and auxiliary support equipment. The backend operator makes reports directly to the CRO and the shift supervisor.

The backend operator has the ability to control the operation of most of the environmental equipment, however, under normal operating conditions, the equipment is placed into service and the controls transferred to the CRO or field operated programmable logic controllers which control equipment to maintain plant parameters within desired specifications. If the CRO receives an alarm on the control room

personnel computer screen, the BEO is immediately notified to inspect the equipment to determine if there is an equipment malfunction.

6.3.5 REFUSE CRANE OPERATOR

The refuse crane operators operate two 14 cubic yard electro-hydraulic operated orange peel grapples that are used to mix and stockpile the solid waste in the refuse bunker and to lift the solid waste into the furnace's refuse feed hoppers.

Using the cranes, the refuse crane operator maintains an empty trench area in the refuse bunker in front of the truck bays so that the refuse truck flow can continue uninterrupted. The refuse crane operator is responsible for feeding both refuse feed hoppers which must have an adequate amount of refuse at all times to ensure a constant supply of refuse to the furnace and to maintain the air seal on the furnace. Because of the responsibility to maintain adequate MSW feed to the furnaces, the refuse crane operator reports directly to the control room operator.

The refuse crane operator makes periodic inspections of the refuse cranes to check for any deficiencies in the crane, bridge and trolley equipment. The refuse crane operators also perform periodic preventative maintenance on the cranes, such as greasing the equipment etc. Like the other operators, the refuse crane operator maintains a log (Attachment 6-7).

6.3.6 TIPPING FLOOR OPERATOR

The tipping floor operators (TFO) are responsible for managing the unloading of all the trucks (approximately 250 per day) delivering solid waste and alternate fuels to the facility – ensuring that it is done safely and efficiently.

Trucks such as walking floor transport trailers and dump trailers are positioned to unload their solid waste directly into the refuse bunker, while the small curb side packers and front end loaders unload onto the tipping floor in front of the refuse bunker. A payloader is then used to push that waste into the refuse bunker. Trucks delivering alternate fuels are positioned for unloading at the alternate fuels' tipping floor hole. Nonhazardous industrial waste that is transported to the facility in van trailers is normally palletized in those trailers. The TFO use a forklift to remove the pallets from the van and then use a payloader to push the palletized waste into the refuse bunker.

In addition the TFO do inspections of the incoming waste loads. A minimum of two (2) solid waste delivery trucks are inspected each day, while nearly all the van trailer loads

are inspected. With the solid waste loads the TFO is observing for unacceptable (tree trunks, large pieces of steel, concrete, etc.) and hazardous wastes.

The TFO have no daily logs to maintain.

6.3.7 FERROUS/NONFERROUS OPERATOR

The ferrous/nonferrous operators are responsible for operating and monitoring the ash processing equipment including the ferrous and nonferrous recovery systems, the flyash conditioning system, and the ash loadout system. The ash processing/loadout and ferrous metal recovery system are continuous operations, whereas the nonferrous metal recovery is a batch process operated 5 days (Monday thru Friday) per week, eight (8) hours per day.

During the day shift, both a ferrous and nonferrous operator monitor and operate the equipment. On the night shift and weekends there is only a ferrous operator assigned to work. The ferrous operator is primarily responsible for the ferrous recovery and ash loadout process, while the nonferrous operator is primarily responsible for the nonferrous metal recovery system. The logs maintained by both operators are shown in Attachment 6-8.

6.3.8 WATER TENDER

Water used in the Covanta Niagara DBA boilers is from the Niagara River. Because of the high pressure steam produced in the boilers, the boiler feed water must be of very high quality and contain essentially no minerals. Covanta Niagara has an extensive water treatment process that the water tender must operate. The process includes:

lime softening
clarification
mixed media filtration
cation ion exchange
anion exchange
condensate return system
mixed cation/anion exchange (polishers)
chemical addition to the boiler feed water

The Covanta Niagara water tender is also responsible for facility's cooling tower system as well as several auxiliary systems such as

- bulk chemical unloading and storage

- sanitary sewer discharge system
- cooling tower chemical feed system

The water tender monitors the various systems through boiler and cooling tower water chemistry sampling/analyses. Many of the parameters have operating range limits, which, if outside the range, require the water tender to take corrective actions. Corrective actions may include regenerating the ion exchange resin, modifying the chemical addition rate, etc.

The water tender documents the inspections and testings on the water tender log (Attachment 6-9). The water tender reports directly to the shift supervisor and operations manager regarding the operation of the water treatment process and physical condition of the equipment.

6.3.9 ALTERNATE FUELS OPERATOR

The alternate fuels (Alt Fuels) operators are responsible for the operation of the alternate fuel (waste wood, photographic paper and film) shredding system and associated equipment. The associated equipment includes the multirams that push the alternate fuels into the shredders, the conveyors that transport the alternate fuels to the "C" building storage area, and the magnet that removes ferrous metal from the alternate fuel. In addition the Alt Fuels operators are responsible for assisting the CRO in the operation and monitoring of the Alt Fuels fire boiler. The Alt Fuels boiler operates primarily in October through March and then on an as needed basis the remainder of the year. The Alt Fuels operators are responsible for operating the alternate fuels feed system, the lime injection system, the grate system, and the ash handling system.

The Alt Fuels operators report directly to the shift supervisor, but also take direction from the CRO. Two (2) logs are shown in Attachment 6-10. One is maintained while the Alt Fuels boiler is on line and the other is maintained while the Alts Fuels boiler is offline.

- Prestart checklist
- Day operator checklist
- Emission log
- Ash level checklist
- Parascrew/ash tender log
- Grates/surge bin log
- Lime usage log

6.3.10 LIQUID WASTE OPERATOR

The liquid waste operator (LWO) is responsible for the operation of the liquid waste injection system. The LWO unloads the tank trucks, delivering the liquid waste, into the storage tanks. The LWO operates the pumps and maintains the strainers and injection nozzles. The log maintained by the LWO is shown in Attachment 6-11.

6.3.11 RTIF LEAD OPERATOR

The RTIF Lead Operator reports to the RTIF Superintendent will be located at, and have dedicated responsibility for the safe, efficient, and reliable functioning of the RTIF. The RTIF Lead Operator will manage and direct the daily operational activities of the RTIF on behalf of and at the direction of the RTIF Superintendent through direct supervision of members of the Operating Group. The RTIF Lead Operator, or his designee, will act as the Certified Track Inspector at the RTIF. The log maintained by the RTIF Lead Operator is shown in Attachment 6-13 (TO BE PROVIDED).

6.3.12 CONTAINER HANDLER OPERATOR

The RTIF operator is responsible for the operation of RTIF loading and unloading of intermodal containers. The RTIF operation's logs will include data captured by the RFID system for the operation of the RTIF. The data fields required (but not limited to) are as follows:

Railcar ID
Railcar Location
Railcar Estimated Arrival Date
Railcar Estimated Arrival Time
Railcar Actual Arrival Date
Railcar Actual Arrival Time
Railcar Estimated Departure Date
Railcar Estimated Departure Time
Railcar Actual Departure Date
Railcar Actual Departure Time
Railcar Origin
Railcar Destination
Container Number
Inbound Date
Inbound Time
Outbound Date
Outbound Time
Gross Weight

Tare Weight
Net Weight
Radiation Reading
Maintenance/Inspection Date
Maintenance/Inspection Performed
Destination

Example log(s) will be included in Section 6-4 when available.

6.4 OPERATION MONITORING LOGS

Operation of the facility is monitored continuously by operations personnel and documented through the use of watchstation logs and computer generated printouts.

The logs provide the primary mechanism to ensure that the plant's equipment is in proper running condition. Equipment that is operating outside of the normal ranges can either be identified by operator inspections or from alarm set points in the Bailey control system.

The continuous emission monitoring system (CEMS) continuously samples and analyzes the stack gas. The CEMS' data acquisition system takes the monitors outputs, makes calculations, as necessary, and compares the monitor's outputs with permit limitations. When an out-of-range value occurs, the alarm function alerts the control room operator of the out-of-range value via the control room's CEMS' personnel computer's alarm function. Corrective actions would then be taken.

In addition to the alarm functions, each shift is independently evaluated for process upsets and excess emissions that occurred during that particular shift. The CEMS has the ability to provide reports on demand and automatically prints shift specific reports. The Bailey provides graphs of the combustion and steam conditions for each shift. These system printouts are then reviewed each shift and the operators held accountable for performance - both acceptable as well as unacceptable.

6.5 OPERATIONS GROUP CHEMICAL/FUEL OIL STORAGE INSPECTIONS

The operations group is responsible for completing monthly inspections of the chemical and fuel storage tanks. The technician, usually the water tender, inspects the tanks and secondary containment dikes and then indicates the findings on the inspection sheet (example shown in Attachment 6-12). The tank/secondary containment inspections are kept on file. Any noted deficiencies are corrected.

6.6 OPERATIONS GROUP PERIODIC EQUIPMENT INSPECTIONS

In addition to logs that are kept by operations personnel, various pieces of equipment are inspected on a weekly or monthly basis. For example, installed spare pumps and compressors are on a weekly rotation check sheet. The pumps, compressors, etc. are started up and operated for several hours to ensure that they are functioning properly and will be ready, if needed. During these weekly or monthly inspections lubrication is done, drive belts are inspected, inventory of consumables is done, etc. The operations group is also responsible for periodic inspections of safety equipment (i.e. fire extinguishers, scott air paks, etc. The operation's Equipment Inspection Schedule is shown in Attachment 6-13.

6.7 MAJOR REVISIONS TO THE OPERATIONS AND FACILITY INSPECTION PLAN

February 2006

Name changed to Covanta from American Ref-Fuel Company.

March 2008

Operations logs updated to current logs.

March 2011

Several operations' logs updated to current logs.

March 2012

Several operations' logs updated to current logs.

May 2013

Several operations' logs updated to current logs.

November 2013

Language added to direct personnel to submit any inspections conducted as a result of EMIS to the plant environmental engineer.

March 2014

Updated to include RTIF operation

April 2014

Change employee title in section 6.3.11.

May 2014

Addition of RTIF Lead Operator's Log.

ATTACHMENT 6-1

PRODUCTION REPORT

Covanta Niagara Production Report

1/19/2014 04:59:00 AM	HILLMAN/JOSEPH	1/19/2014 04:59:00 PM

STEAM PRODUCTION

Boiler 1	1656	klbs	138	avg/klb
Boiler 2	0	klbs	0	avg/klb
Boiler 3	3648	klbs	304	avg/klb
Boiler 4	3584	klbs	299	avg/klb
DBA Warm Up Vent	20	klbs	2	avg/klb
Total Steam	8908	klbs	742	avg/klb

POWER

Gross Power	3520	mwh	293	avgmw
Net Power	9792	mwh	816	avgmw
Internal Power	-6272	mwh	-523	avgmw
Turbine 1 Condensate	125	klb	10	avg/klb
Turbine 2 Condensate	438	klb	36	avg/klb

EXPORTED STEAM

HCPC Steam	2984	klbs	249	avg/klb
Praxair Steam	846	klbs	71	avg/klb
Aux Steam	0	klbs	0	avg/klb
180Psi Vented steam	0.0	klbs	0	avg/klb

NATURAL GAS

#1 Blr StartUpGas	0	mscf
#1 Blr Env Gas	2696	mscf
#2 Blr Env Gas	0	mscf
#2 Blr StartUp Gas	0	mscf
#3 Blr Env Gas	472	mscf
#3 Blr Start-Up Gas	0	mscf
#4 Blr Env Gas	380	mscf
#4 Blr Start-Up Gas	0	mscf

MISC

Turbine 1 hrs	12	hrs
Turbine 2 hrs	12	hrs
Shredder 1 hrs	0	hrs
Shredder 2 hrs	0	hrs
Shredder3 hrs	0	hrs

COMMENTS

ALL CUSTOMERS PULLING TO THE MAX!!!!!

WEATHER

NICE

GAS

NFG North	0	mscf
NFG Center	0	mscf
NFG South	0	mscf
Total Gas	0	mscf
Warm up Gas	0	mscf

MSW

MSW Received	0	tons
MSW processed (calc)	1113	tons
Ferrous Shipped	0	tons
Non-ferrous Shipped	0	tons

WATER TREATMENT

Make-up Water	462000	gal
Sanitary Sewer Flow	675000	gpm
pH < 5 time	0	min
pH > 10 time	0	min
DI tank level	70	%
Oxy Condensate	400000	gal

LIME

Lime Silo 1 level	25	%
Lime Silo 2 level	13	%
Lime Received	0	tons
#3 Blr lime used	15.62	klbs
#3 Blr slurry avg	0.00	gpm
#4 Blr lime used	18.75	klbs
#4 Blr slurry avg	0.00	gpm
Total Lime	34.37	klbs

DENOX

Denox tank	42.43	%
Denox Received	0.00	gal
#3 Blr chem flow	0.00	avg gal/hr
#4 Blr chem flow	0.00	avg gal/hr
#3 Blr Nox	0.00	avg ppm
#4 Blr Nox	0.00	avg ppm
Total Denox	0.00	gal

ALTERNATIVE FUEL

Total Steam	0	klbs
Wood Received	0	tons
Wood Burned	0	tons
Gas used		

Total Fly Ash	0.00	tons

1/19/2014 04:59:00 PM	KEMSLEY/FILIPPELLI	1/20/2014 04:59:00 AM

STEAM PRODUCTION

Boiler 1	1416	klb	118	avg/klb
Boiler 2	0	klb	0	avg/klb
Boiler 3	3648	klb	304	avg/klb
Boiler 4	3840	klb	320	avg/klb
DBA Warm Up Vent	49	klb	4	avg/klb
Total Steam	8953	klb	746	avg/klb

POWER

Gross Power	3680	mwh	307	avgmw
Net Power	9792	mwh	816	avgmw
Internal Power	-6112	mwh	-509	avgmw
Turbine 1 Condensate	188	klbs	16	avg/klb
Turbine 2 Condensate	625	klbs	52	avg/klb

EXPORTED STEAM

HCPC Steam	2566	klbs	214	avg/klb
Praxair Steam	837	klbs	70	avg/klb
Aux Steam	0	klbs	0	avg/klb
180Psi Vented steam	0.0	klps	0	avg/klb

NATURAL GAS

#1 Blr StartUpGas	0	mscf
#1 Blr Env Gas	2328	mscf
#2 Blr Env Gas	0	mscf
#2 Blr StartUp Gas	0	mscf
#3 Blr Env Gas	82	mscf
#3 Blr Start-Up Gas	0	mscf
#4 Blr Env Gas	24	mscf
#4 Blr Start-Up Gas	0	mscf

MISC

Turbine 1 hrs	12	hrs
Turbine 2 hrs	12	hrs
Shredder 1 hrs	0	hrs
Shredder 2 hrs	0	hrs
Shredder3 hrs	0	hrs

COMMENTS

ALL CUSTOMERS PULLING TO THE MAX!!!!!

WEATHER

NICE

GAS

NFG North	0	mscf
NFG Center	0	mscf
NFG South	0	mscf
Total Gas	0	mscf
Warm up Gas	0	mscf

MSW

MSW Received	0	tons
MSW Processed (calc)	1152	tons
Ferrous Shipped	0	tons
Non-ferrous Shipped	0	tons

WATER TREATMENT

Make-up Water	462000	gal
Sanitary Sewer Flow	675000	gpm
pH < 5 time	0	min
pH > 10 time	0	min
DI tank level	70	%
Oxy Condensate	276000	gal

LIME

Lime Silo 1 level	22	%
Lime Silo 2 level	11	%
Lime Received	0	tons
#3 Blr lime used	18.75	klbs
#3 Blr slurry avg	0.00	gpm
#4 Blr lime used	18.75	klbs
#4 Blr slurry avg	0.00	gpm
Total Lime	37.50	klbs

DENOX

Denox tank	71.96	%
Denox Received	0.00	gal
#3 Blr chem flow	0.00	avg gal/hr
#4 Blr chem flow	0.00	avg gal/hr
#3 Blr Nox	0.00	avg ppm
#4 Blr Nox	0.00	avg ppm
Total Denox	0.00	gal

ALTERNATIVE FUEL

Total Steam	0	klbs
Wood Received	0	tons
Wood Burned	0	tons
Gas used		

Total Fly Ash	0.00	tons

DAILY TOTALS

#1 Blr on Line	24	hrs
#2 Blr on Line	0	hrs
#3 Blr on Line	24	hrs
#4 Blr on Line	24	hrs
Turbine 1	24	hrs
Turbine 2	24	hrs
Shredder 1	0	hrs
Shredder 2	0	hrs
Shredder 3	0	hrs

Total Gas(pay Meters)	**26560**	**mscf**

Boiler 1	3072	klbs
Boiler 2	0	klbs
Boiler 3	7296	klbs
Boiler 4	7424	klbs
DBA Warm up Vent	69	klbs
Total Vented Steam	0.0	klbs
Gross Power	7200	mw
Net Power	19584	mw
Internal Power	-12384	mw
Total Steam to Turbine	**17723**	klbs
Total Steam	**17792**	klbs

Lime Rate	1.59	%
Total MSW Rec'd	0	tons
Total MSW processed	2264.6	tons
Inventory	**4735**	**tons**

ALTERNATIVE FUEL

Total Steam	0	Klbs
Net Power		
Wood Received	0	tons
Wood Burned	0	
Gas used		
Internal Power		
ash		
Lime		
Peak power		
Off Peak power		
TG low press power		
Vented power		

INTEGRATORS

Boiler 1	306168
Boiler 2	17105
NFG North	647616
NFG Center	1
NFG South	107812
Boiler 3	4152128
Boiler 4	5534336
TG1 COND	525812
TG2 COND	737124
HPCP	42242900
PRAX	15104478
AUX	10946027
NMP4	573024
brkr130	400032
brkr180	326240

Covanta Niagara Plant **Enviromental Report** **Boiler #4 Hourly Averages**

		Steam Press	Steam flow	Steam temp	sda in draft	sda out draft	sda dp	ff outlet	sda in temp	sda out temp	slurry flow A	slurry flow B	slurry flow C	wtr flow A	wtr flow B	wtr flow C	slurry flow A	slurry flow B	slurry flow C	wtr flow A	wtr flow B	wtr flow C
		Psi	klbs	deg F	inwc	inwc	inwc	inwc	deg F	deg F	gpm	gpm	gpm	gpm	gpm	gpm	lbs/hr	lbs/hr	lbs/hr	gph	gph	gph
DATE	TIME	PI4_007	FI4_010	TI4_006A	PI4_542	PI4_543	PD4_579	PI_4_441	T4_541AVG	T4_544AVG	F4_550A	F4_550B	F4_550C	F4_551A	F4_551B	F4_551C	F4_550A	F4_550B	F4_550C	F4_551A	F4_551B	F4_551C
1/19/2014	1:00	1227	307	751	-2.84	-6.33	3	-14	550	320	8.6	8.6	8.6	18	18	18	4733	4727	4731	1087	1088	1083
	2:00	1222	310	751	-2.80	-6.15	3	-13	546	321	6.4	6.4	6.4	19	20	18	3542	3534	3538	1145	1179	1093
	3:00	1232	315	751	-2.89	-6.20	3	-14	536	314	7.7	7.7	7.7	18	18	18	4250	4259	4250	1093	1109	1058
	4:00	1253	313	751	-2.81	-6.05	3	-13	538	311	7.3	7.3	7.4	18	18	18	4040	4045	4066	1102	1102	1097
	5:00	1240	305	751	-2.90	-6.34	3	-14	547	319	6.7	6.8	6.7	20	20	19	3721	3733	3716	1186	1196	1121
	6:00	1241	308	751	-2.82	-6.23	3	-14	552	322	7.1	7.1	7.1	19	20	18	3932	3913	3916	1162	1186	1089
	7:00	1262	304	751	-2.66	-6.07	3	-14	557	330	6.3	6.3	6.3	19	20	18	3498	3491	3504	1159	1206	1096
	8:00	1247	292	751	-2.71	-6.16	3	-14	561	330	6.7	6.7	6.7	20	20	18	3696	3704	3707	1176	1214	1094
	9:00	1242	292	751	-2.70	-6.17	3	-14	563	331	6.7	6.8	6.7	20	20	18	3711	3735	3718	1181	1208	1096
	10:00	1241	308	750	-2.73	-6.17	3	-14	566	331	6.8	6.8	6.8	20	20	19	3763	3758	3767	1192	1207	1127
	11:00	1254	309	751	-2.72	-6.15	3	-14	550	319	6.7	6.7	6.7	20	20	19	3712	3700	3685	1204	1211	1131
	12:00	1254	298	751	-2.67	-6.03	3	-14	540	314	6.7	6.7	6.7	19	19	18	3682	3691	3703	1138	1150	1073
	13:00	1246	302	751	-2.72	-6.18	3	-14	553	319	6.7	6.7	6.7	20	20	19	3707	3709	3717	1193	1212	1133
	14:00	1267	310	751	-2.64	-5.97	3	-14	550	317	6.7	6.7	6.7	19	20	18	3719	3696	3681	1142	1173	1079
	15:00	1272	311	751	-2.52	-5.66	3	-13	541	312	6.7	6.7	6.7	18	18	17	3685	3696	3702	1089	1100	1048
	16:00	1240	312	751	-2.66	-5.94	3	-14	558	321	6.9	6.9	6.9	19	20	18	3828	3819	3832	1162	1194	1097
	17:00	1249	307	751	-2.69	-5.91	3	-13	559	321	6.9	6.9	6.9	20	20	18	3810	3833	3813	1181	1197	1103
	18:00	1223	313	751	-2.65	-5.85	3	-13	549	317	6.7	6.7	6.7	19	20	18	3701	3693	3673	1143	1172	1093
	19:00	1223	314	751	-2.68	-5.84	3	-13	531	310	6.6	6.7	6.7	18	18	18	3664	3682	3709	1077	1075	1071
	20:00	1224	315	751	-2.70	-5.94	3	-13	540	314	6.7	6.7	5.8	19	19	16	3715	3693	3183	1131	1138	936
	21:00	1224	314	751	-2.59	-5.81	3	-13	546	337	7.7	7.7	4.6	18	18	12	4235	4252	2538	1087	1086	720
	22:00	1222	309	751	-2.65	-5.88	3	-13	550	314	6.6	6.7	6.7	19	19	19	3669	3687	3688	1169	1167	1138
	23:00	1223	314	751	-2.82	-6.21	3	-14	563	322	6.7	6.7	6.7	20	20	19	3715	3703	3694	1211	1212	1155
	0:00	1223	311	751	-2.78	-6.14	3	-14	567	325	7.0	7.0	7.0	20	20	20	3855	3857	3859	1196	1196	1173

		Aux Burn use	FP Temp A	FP Temp B	FP Temp C	FP Temp D	FF In Temp	FF Out Temp	urea flow	Carbon Inj.	Carbon Inj.		Tot BH dp	Cells in use	dp cell A	dp cell B	dp cell C	dp cell D	dp cell E	dp cell F	dp cell G	dp cell H
		mscf	deg F	deg F	deg F	deg F	deg F	deg F	gph	lbs.	6 hr lbs		inwc	Units	inwc	inwc	inwc	inwc	inwc	inwc	inwc	inwc
DATE	TIME						TI4_544AVG						PDI_3_441		PD4_450A	PD4_450B	PD4_450C	PD4_450D	PD4_450E	PD4_450F	PD4_450G	PD4_450H
1/19/2014	1:00	0.00	1622	605	1359	1583	320	290	0.0	28.99			7.25	7	4.8	0.7	2.6	6.6	5.0	5.2	5.2	4.4
	2:00	34.00	1640	408	1372	1613	321	290	0.0	28.99			7.21	8	5.3	1.2	2.7	6.5	4.6	4.8	5.4	3.8
	3:00	0.00	1658	465	1381	1604	314	288	0.0	28.99			7.51	8	5.4	1.6	3.0	7.0	4.1	5.0	4.8	4.4
	4:00	0.00	1611	427	1349	1632	311	284	0.0	28.99			7.24	8	4.7	1.6	2.7	6.9	3.9	5.1	5.1	4.9
	5:00	0.00	1612	648	1356	1579	319	288	0.0	29.00			7.58	8	5.5	2.0	2.6	6.1	3.2	5.2	5.6	5.6
	6:00	0.00	1601	818	1344	1588	322	290	0.0	29.00	173.97		7.60	8	5.7	2.0	2.9	6.9	2.8	5.0	4.9	5.2
	7:00	0.00	1588	917	1345	1564	330	299	0.0	28.99			7.59	8	4.6	2.0	2.9	7.1	2.6	5.3	5.3	5.4
	8:00	68.00	1595	1147	1342	1540	330	298	0.0	28.99			7.86	8	5.6	2.5	2.8	6.3	1.4	5.6	5.7	7.7
	9:00	68.00	1600	1321	1339	1509	331	300	0.0	28.99			7.83	7	5.9	2.6	3.1	6.7	0.5	5.0	5.2	8.2
	10:00	34.00	1647	985	1357	1584	331	302	0.0	29.00			7.71	7	4.9	2.5	3.2	6.8	0.2	5.4	5.4	8.1
	11:00	34.00	1648	774	1370	1604	319	295	0.0	28.99			7.70	7	5.5	2.5	2.7	6.1	0.5	5.7	5.6	7.7
	12:00	68.00	1619	1118	1349	1553	314	287	0.0	28.99	173.97		7.71	#DIV/0!	5.9	2.6	3.1	6.5	#DIV/0!	4.9	5.2	8.8
	13:00	34.00	1643	1139	1359	1556	319	288	0.0	28.99			7.83	#DIV/0!	5.1	2.8	3.2	6.7	#DIV/0!	5.5	5.3	9.4
	14:00	34.00	1635	757	1350	1602	317	290	0.0	28.99			7.79	#DIV/0!	5.6	2.8	2.8	6.1	#DIV/0!	5.8	5.8	9.4
	15:00	34.00	1660	947	1358	1567	312	284	0.0	28.99			7.55	#DIV/0!	5.8	2.7	3.1	6.3	#DIV/0!	5.0	5.3	9.2
	16:00	0.00	1644	1007	1353	1584	321	288	0.0	28.99			8.08	#DIV/0!	5.6	3.3	3.5	6.7	#DIV/0!	5.8	5.6	4.1
	17:00	34.00	1624	1084	1343	1565	321	292	0.0	28.99			7.25	#DIV/0!	4.5	0.4	3.1	6.4	#DIV/0!	5.4	5.4	#DIV/0!
	18:00	0.00	1621	917	1321	1607	317	289	0.0	29.00	173.95		7.22	#DIV/0!	5.3	1.2	2.7	5.5	#DIV/0!	5.6	5.6	9.9
	19:00	0.00	1625	823	1313	1618	310	283	0.0	29.00			7.09	#DIV/0!	5.5	1.5	3.0	5.9	#DIV/0!	4.5	4.9	5.2
	20:00	0.00	1659	1031	1340	1583	314	284	0.0	28.99			7.16	#DIV/0!	5.7	1.0	3.1	6.1	#DIV/0!	5.1	5.0	10.0
	21:00	0.00	1670	880	1352	1611	337	304	0.0	28.99			7.61	#DIV/0!	6.2	2.0	2.9	5.9	#DIV/0!	5.8	5.9	#DIV/0!
	22:00	34.00	1655	797	1339	1623	314	287	0.0	29.00			7.59	#DIV/0!	6.3	2.3	3.3	6.2	#DIV/0!	5.1	5.4	5.7
	23:00	0.00	1658	958	1333	1611	322	290	0.0	28.99			7.73	#DIV/0!	5.2	2.6	3.5	6.4	#DIV/0!	5.6	5.6	#DIV/0!
	0:00	0.00	1684	959	1351	1608	325	297	0.0	28.99	173.96		8.01	#DIV/0!	5.8	3.1	3.1	5.9	#DIV/0!	6.2	6.3	#DIV/0!

Covanta Niagara Plant **Enviromental Report** **Boiler #3 Hourly Averages**

		Steam Press	Steam flow	Steam temp	sda in draft	sda out draft	sda dp	ff outlet	sda in temp	sda out temp	slurry flow A	slurry flow B	slurry flow C	wtr flow A	wtr flow B	wtr flow C	slurry flow A	slurry flow B	slurry flow C	wtr flow A	wtr flow B	wtr flow C
		Psi	klbs	deg F	inwc	inwc	inwc	inwc	deg F	deg F	gpm	gpm	gpm	gpm	gpm	gpm	lbs/hr	lbs/hr	lbs/hr	gph	gph	gph
DATE	TIME	PI3_007	FI3_010	TI3_006A	PI3_542	PI3_543	PD3_579	PI3_441	T3_541AVG	T3_544AVG	F3_550A	F3_550B	F3_550C	F3_551A	F3_551B	F3_551C	F3_550A	F3_550B	F3_550C	F3_551A	F3_551B	F3_551C
1/19/2014	1:00	1223	309	753	-4.33	-6.46	2	-11	564	310	8.7	8.7	8.7	16	16	16	4800	4824	4787	985	982	983
	2:00	1217	306	754	-4.63	-6.90	2	-11	574	315	6.8	6.8	6.8	19	20	19	3780	3751	3775	1160	1170	1138
	3:00	1228	317	753	-4.49	-6.64	2	-10	556	311	7.7	7.7	7.7	17	17	17	4233	4233	4236	1020	1033	1002
	4:00	1249	311	753	-4.22	-6.26	2	-10	550	310	8.2	8.2	8.2	15	15	15	4536	4553	4545	912	911	912
	5:00	1235	305	753	-4.55	-6.73	2	-10	563	310	6.8	6.8	6.8	19	19	19	3761	3763	3737	1115	1115	1118
	6:00	1234	296	754	-4.55	-6.76	2	-10	568	314	6.1	6.1	6.2	19	19	19	3394	3382	3407	1159	1167	1128
	7:00	1262	313	753	-4.55	-6.71	2	-9	574	317	6.7	6.7	6.7	19	19	19	3676	3686	3690	1144	1155	1120
	8:00	1245	307	753	-4.52	-6.70	2	-8	574	313	6.9	6.9	6.9	20	19	19	3803	3820	3828	1171	1169	1155
	9:00	1239	305	754	-4.62	-6.89	2	-7	578	316	7.1	7.1	7.1	19	19	19	3935	3911	3920	1163	1165	1157
	10:00	1233	291	753	-4.58	-6.78	2	-6	563	313	6.7	6.7	6.7	19	19	18	3683	3697	3697	1117	1117	1105
	11:00	1249	303	753	-4.45	-6.57	2	-5	555	310	6.8	6.8	6.7	17	17	17	3733	3738	3707	1028	1028	1029
	12:00	1251	306	753	-4.43	-6.56	2	-4	558	312	6.7	6.0	6.7	18	16	18	3698	3339	3708	1073	958	1073
	13:00	1241	297	753	-4.49	-6.64	2	-3	562	328	7.1	0.0	7.1	19	16	18	3943	0	3946	1114	968	1100
	14:00	1263	310	753	-4.67	-6.88	2	-3	567	317	7.3	0.0	7.3	20	22	19	4051	0	4038	1176	1350	1149
	15:00	1269	312	753	-4.49	-6.56	2	-2	551	310	6.7	0.0	6.7	17	23	17	3699	0	3707	1027	1360	1023
	16:00	1231	289	753	-4.85	-7.08	2	-1	566	314	6.7	4.4	6.7	20	19	20	3701	2452	3698	1186	1114	1171
	17:00	1245	309	753	-4.67	-6.80	2	-1	566	310	6.8	6.7	6.7	19	19	18	3727	3711	3725	1115	1116	1110
	18:00	1220	311	753	-4.46	-6.53	2	-1	565	310	6.7	6.7	6.7	18	18	18	3711	3698	3709	1085	1086	1076
	19:00	1220	313	753	-4.39	-6.42	2	-1	549	310	6.7	6.7	6.7	16	16	16	3701	3695	3713	985	986	985
	20:00	1220	309	754	-4.70	-6.88	2	-2	556	311	6.7	6.8	6.7	18	18	18	3706	3750	3705	1064	1059	1063
	21:00	1221	312	753	-4.84	-7.00	2	-1	567	312	6.7	6.7	6.7	18	18	18	3721	3700	3726	1105	1107	1105
	22:00	1219	311	753	-4.48	-6.50	2	-1	560	310	6.8	6.8	6.8	17	17	17	3731	3742	3729	1033	1032	1033
	23:00	1218	304	753	-4.34	-6.33	2	-2	563	310	7.1	7.1	7.1	17	17	17	3931	3913	3932	1012	1012	1012
	0:00	1221	314	753	-4.15	-6.03	2	-6	560	310	7.0	7.0	7.0	16	16	16	3858	3851	3860	977	977	978

		Aux Burn use	FP Temp A	FP Temp B	FP Temp C	FP Temp D	FF In Temp	FF Out Temp	urea flow	Carbon Inj.	Carbon Inj.		Tot BH dp	Cells in use	dp cell A	dp cell B	dp cell C	dp cell D	dp cell E	dp cell F	dp cell G	dp cell H
		mscf	deg F	deg F	deg F	deg F	deg F	deg F	gph	lbs.	6 hr lbs		inwc	Units	inwc	inwc	inwc	inwc	inwc	inwc	inwc	inwc
DATE	TIME						TI3_544AVG						PDI_3_441		PD3_450A	PD3_450B	PD3_450C	PD3_450D	PD3_450E	PD3_450F	PD3_450G	PD3_450H
1/19/2014	1:00	0.00	1690	1775	394	1755	310	274	0.0	29.73			4.80	8	4.9	4.9	4.1	3.7	4.5	4.6	4.9	4.1
	2:00	68.00	1695	1732	391	1697	315	275	0.0	29.73			3.95	8	5.4	5.4	4.5	4.2	4.8	4.5	4.7	4.2
	3:00	0.00	1728	1740	389	1706	311	276	0.0	29.73			3.71	8	4.8	5.2	4.6	4.3	5.0	4.7	4.7	4.0
	4:00	0.00	1672	1759	391	1722	310	274	0.0	29.73			3.72	8	4.7	4.8	3.8	3.7	4.5	4.6	4.7	3.9
	5:00	34.00	1678	1718	398	1681	310	273	0.0	29.73			3.19	8	5.2	5.3	4.3	4.1	4.7	4.2	4.6	4.2
	6:00	34.00	1676	1714	401	1681	314	275	0.0	29.73	178.36		3.16	8	5.5	5.5	4.6	4.3	5.0	4.7	4.8	4.1
	7:00	0.00	1752	1706	389	1673	317	279	0.0	29.73			1.95	8	5.8	5.8	3.9	4.2	5.1	5.1	5.2	4.5
	8:00	34.00	1703	1734	397	1692	313	275	0.0	29.73			0.97	8	5.7	5.7	4.2	4.2	4.8	4.5	4.8	4.5
	9:00	0.00	1693	1737	393	1700	316	277	0.0	29.73			0.19	8	6.0	6.1	4.5	4.6	5.2	4.9	5.0	4.3
	10:00	34.00	1665	1703	394	1656	313	276	0.8	29.73			0.07	8	6.2	6.3	4.0	4.5	5.5	5.3	5.4	4.7
	11:00	102.00	1691	1705	389	1657	310	273	6.6	29.73			0.11	8	5.9	5.9	4.0	4.1	4.8	4.5	5.0	4.5
	12:00	34.00	1726	1707	389	1678	312	273	6.8	29.73	178.36		0.11	8	5.6	6.0	4.2	4.3	5.2	4.7	4.7	4.2
	13:00	102.00	1720	1693	390	1660	328	283	6.6	29.73			0.11	8	4.3	5.1	3.6	4.1	5.2	4.8	4.9	4.1
	14:00	34.00	1744	1709	389	1669	317	279	6.9	29.73			0.11	8	4.8	4.9	3.7	3.9	4.5	4.5	4.9	4.3
	15:00	0.00	1713	1730	390	1689	310	275	6.9	29.73			0.11	8	4.6	5.1	3.8	4.1	4.8	4.4	4.4	3.9
	16:00	68.00	1665	1674	394	1632	314	275	6.5	29.81			0.11	8	4.6	4.8	3.5	4.2	5.1	4.9	4.9	4.2
	17:00	68.00	1698	1714	389	1682	310	274	10.4	29.73			0.11	8	4.7	4.9	3.3	3.7	4.5	4.4	4.8	4.1
	18:00	34.00	1724	1716	389	1676	310	273	15.3	29.73	178.44		0.11	8	4.8	5.2	3.7	4.1	4.8	4.4	4.4	4.0
	19:00	0.00	1688	1734	389	1699	310	274	15.3	29.73			0.11	8	4.5	4.7	3.5	4.2	4.9	4.6	4.7	4.0
	20:00	0.00	1690	1711	391	1675	311	274	15.3	29.73			0.11	8	5.1	5.2	3.5	3.9	4.7	4.8	5.1	4.4
	21:00	0.00	1682	1703	397	1663	312	274	15.3	29.73			0.11	8	5.3	5.4	3.7	4.2	4.9	4.5	4.6	4.3
	22:00	0.00	1712	1737	389	1693	310	275	15.3	29.73			0.11	8	4.4	4.8	3.6	4.3	5.0	4.6	4.7	4.0
	23:00	0.00	1682	1729	389	1691	310	274	15.4	29.73			0.11	8	4.8	4.9	3.2	3.8	4.5	4.6	4.8	4.0
	0:00	0.00	1743	1725	389	1672	310	275	15.3	29.73	178.37		1.23	8	4.9	5.0	3.4	4.0	4.6	4.0	4.4	3.9

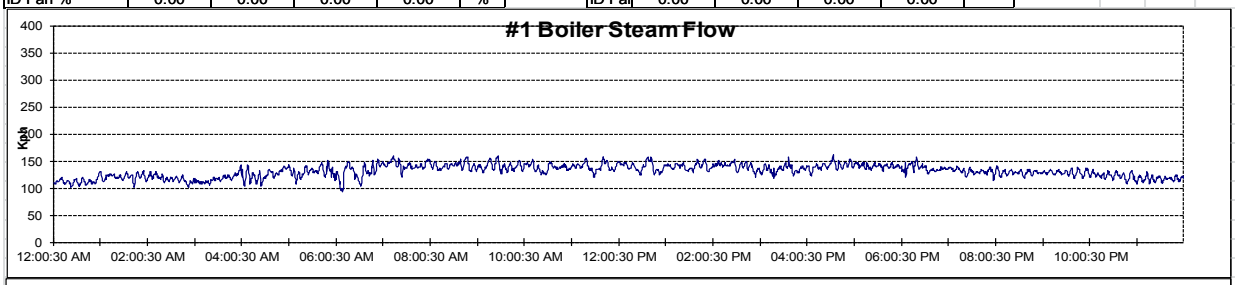
3/19/2018

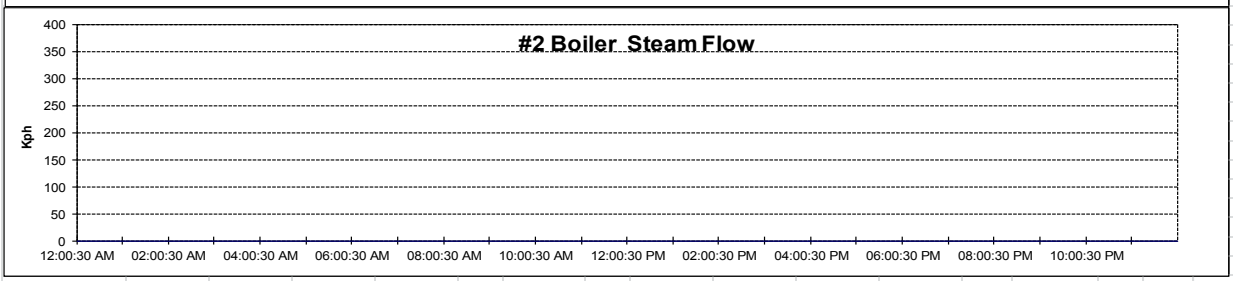
#1 BOILER

	Avg	Std Dev %	Max	Min	
Steam Flow	161009	#DIV/0!	0.00	0.00	Kpph
Steam Flow SP	0.00	0.00	0.00	0.00	Kpph
Feedwater Flow	0.00	0.00	0.00	0.00	Klb/hr
Furnace Draft	0.00	0.00	0.00	0.00	inwc
ID Fan %	0.00	0.00	0.00	0.00	%

#2 BOILER

	Avg	Std Dev %	Max	Min	
Steam	0.00	0.00	160062	92047	Kpph
Steam	0.00	0.00	0.00	0.00	Kpph
Feedv	0.00	0.00	0.00	0.00	Klb/hr
Furna	0.00	0.00	0.00	0.00	inwc
ID Fan	0.00	0.00	0.00	0.00	





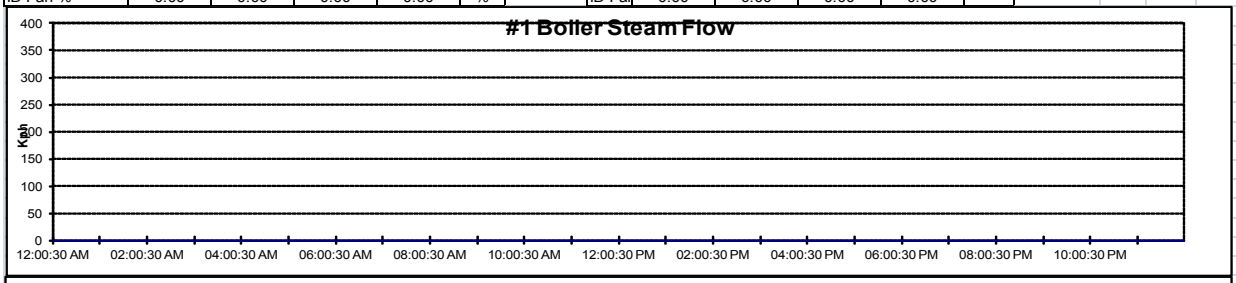
3/13/2013

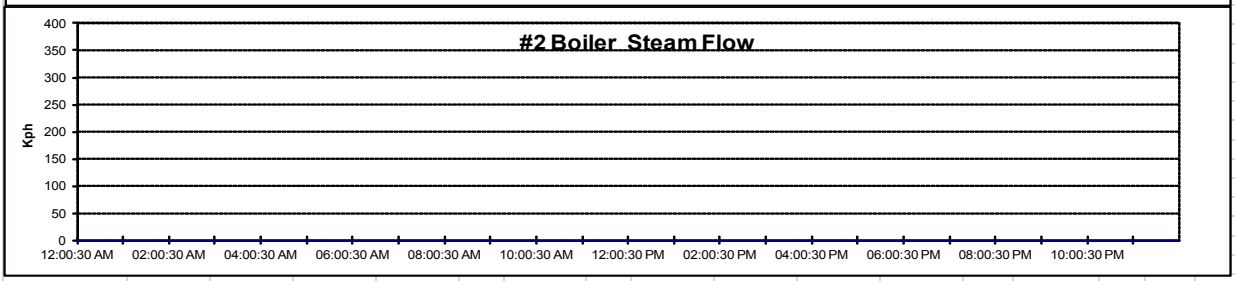
#1 BOILER

	Avg	Std Dev %	Max	Min	
Steam Flow	#DIV/0!	#DIV/0!	0.00	0.00	Kpph
Steam Flow SP	0.00	0.00	0.00	0.00	Kpph
Feedwater Flow	0.00	0.00	0.00	0.00	Klb/hr
Furnace Draft	0.00	0.00	0.00	0.00	inwc
ID Fan %	0.00	0.00	0.00	0.00	%

#2 BOILER

	Avg	Std Dev %	Max	Min	
Steam	#DIV/0!	#DIV/0!	0.00	0.00	Kpph
Steam	0.00	0.00	0.00	0.00	Kpph
Feedv	0.00	0.00	0.00	0.00	Klb/hr
Furna	0.00	0.00	0.00	0.00	inwc
ID Fa	0.00	0.00	0.00	0.00	





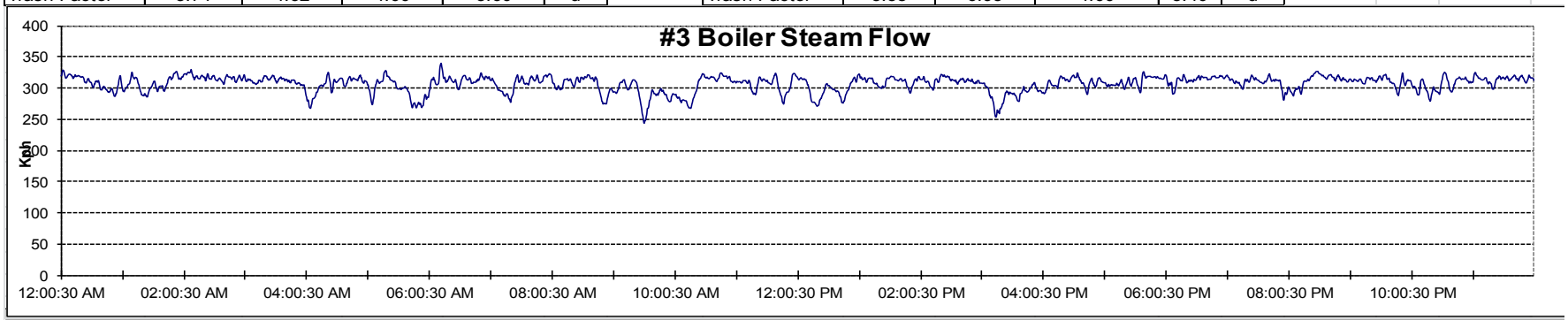
1/19/2014

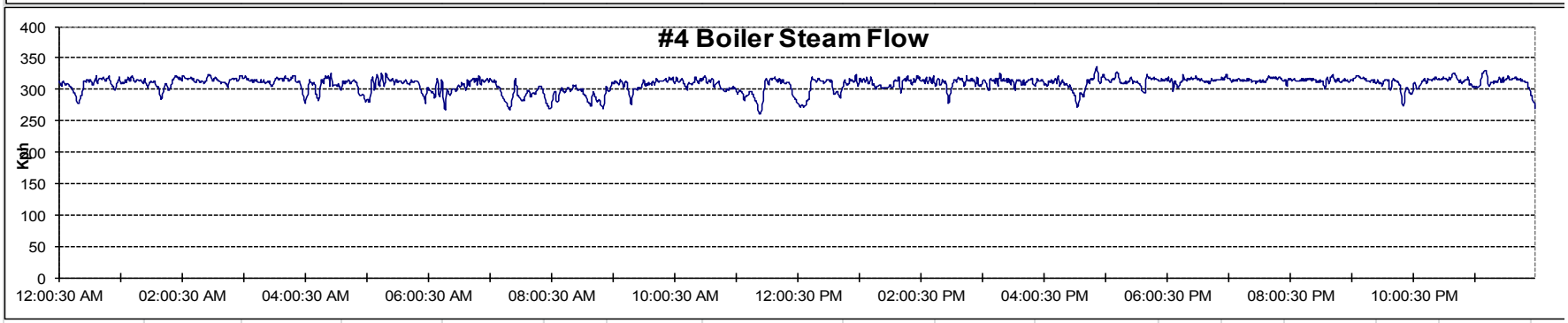
#3 BOILER

	Avg	Std Dev %	Max	Min	
Steam Flow	306.70	1.36	339.51	243.35	Kpph
Steam Flow SP	314.66	0.70	315.00	299.00	Kpph
Feedwater Flow	319.19	11.05	392.60	176.93	klb/hr
PA Flow	63.59	12.91	79.17	31.11	Kscfm
SA Flow	21.99	53.85	49.71	0.00	Kscfm
Total Air Flow	85.58	33.38	128.88	31.11	Kscfm
Furnace Draft	-0.30	-71.66	0.35	-1.35	inwc
ID Fan %	62.98	19.49	98.33	33.93	%
Ram Feeder	32.96	58.32	100.00	0.00	%
O2 Blr Out	4.75	23.11	21.00	2.21	%
ID Fan O2	7.68	16.37	20.74	2.06	%
CO ID Fan	5.02	130.11	166.03	0.95	ppm
Blr Out Press	-4.52	-7.67	-3.16	-5.58	inwc
Blr Out Temp	562.90	1.72	590.91	542.44	degF
Trash Factor	3.74	4.62	4.00	3.60	u

#4 BOILER

	Avg	Std Dev %	Max	Min	
Steam Flow	308.03	1.19	335.35	260.83	Kpph
Steam Flow SP	314.35	0.87	315.00	300.00	Kpph
Feedwater Flow	328.81	4.36	387.22	247.62	klb/hr
PA Flow	68.23	12.60	84.20	32.80	Kscfm
SA Flow	13.83	66.54	35.18	0.00	Kscfm
Total Air Flow	82.06	39.57	119.38	32.80	Kscfm
Furnace Draft	-0.22	-97.70	0.52	-0.99	inwc
ID Fan %	78.59	16.18	91.97	40.60	%
Ram Feeder	35.91	46.23	99.96	0.66	%
O2 Blr Out	5.01	18.22	20.71	1.87	%
ID Fan O2	7.11	18.05	21.20	2.06	%
CO ID Fan	5.83	129.77	231.79	2.59	ppm
Blr Out Press	-2.72	-9.27	-1.75	-3.43	inwc
Blr Out Temp	550.47	2.06	574.39	521.83	degF
Trash Factor	3.58	6.95	4.00	3.40	u





ATTACHMENT 6-2

SHIFT SUPERVISOR'S LOG

COVANTA
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COVANTA NIAGARA, L.P.
SHIFT SUPERVISOR LOG

Doc. OL-9	Rev.22 No.
Date:3/12/2013	

PLANT / EQUIPMENT STATUS

SAFETY / ENVIRONMENTAL TAILGATE ISSUES

EQUIPMENT OUT OF COMMISSION

LIMITED USE EQUIPMENT

MAINTENANCE PERFORMED

WORK ORDER ISSUES	EOS TANK LEVELS
	#1 SILO _____%
	#2 SILO _____%
	CARBON _____ft
	UREA _____%
	Power Forecast___MW

TURNOVER ISSUES AIR MONITOR CAL. DATE: NF10_____ NF11_____ NF12_____

Ferrous Down Time =	Non Ferrous Down Time =		
N-pac Daily Numbers Sent	Initial:	**Covanta Daily Report Sent**	Initial:

R:\ENV\ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEMS\OPERATION'S LOGS\SHIFT SUP LOGBOOK

OFF GOING QRO SUPV_____ ONCOMING QRO SUPV_____

COVANTA
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COVANTA NIAGARA, L.P.
SHIFT SUPERVISOR LOG

Doc. OL-9	Rev.22 No.
Date:3/12/2013	

NIAGARA SHIFT SUPERVISOR'S LOG

DATE:_____ SHIFT:_____ NAME:_____

END OF SHIFT STATUS:

STEAM: Shift Averages

Load: Blr. #3 _____kpph
O_2: Blr. #3 _____%
Wtr/Stm Deviation _____kpph

Blr #4 _____kpph Blr #2 _____ kpph
Blr #4 _____ % Blr #1 _____kpph
Wtr/Stm Deviation _____kpph

Comments:

TG's: LSPC @_____ on 1 / 2 Ext Stpt_____psi | 1 / 2 TG Inlet Vlv Pos_____% Ext Stpt_____psi

Electric Lineup:

	140	150	170	
Closed: /	52A	52T	52B	
Open: O	1000	100/200	1400	100/200
	1200	100/200	1600	100/200

Steam Sales
Oxy Hdr Press Excursions: Y / N
Lowest Pressure _____# Time below 150 #_____
SHORTFALLS
GreenPac---Y / N OXY ---- Y / N Norampac ----- Y /N

Equipment Last Cleaned

#3 Blr Furnace	_____	On / Off-Line	#4 Blr Furnace	_____	On / Off-Line
#3 PA Fan	_____		#4 PA Fan	_____	
#3 Ash Extractor	_____	On / Off-Line	#4 Ash Extractor	_____	On / Off-Line
#3 Blr 3rd Pass	_____	On / Off-Line	#4 Blr 3rd Pass	_____	On / Off-Line

Crane Status:
North Crane: In Use / Avail / OOC-Grapple 935 / 1329 / 1425 / 1214
South Crane: In Use / Avail / OOC-Grapple 935 / 1329 / 1425 / 1214
Spare: Grapple 935 / 1329 / 1425 / 1214 Avail / OOC Deck: N / S

Significant Problems/Events:

Log Review Complete	CRO	ACRO	BE	ALO	ALT FUEL	CRANE	LW	Weekend/Holiday CEMS Cal	Initial:
Reviews:									
	Breniser	Thiel	Kemsley	Joseph	Curry				

ATTACHMENT 6-3

CONTROL ROOM OPERATOR'S LOGBOOK

COVANTA
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Doc. OL-7	Rev. 10 No.
Date: 3/12/14	

COVANTA NIAGARA, L.P.
OPERATIONS LOGS
CONTROL ROOM OPERATOR LOG BOOK

NIAGARA CONTROL ROOM OPERATOR LOG

DATE:_____/_____/_____ SHIFT:_____ NAME:_____

EQUIPMENT SETPOINTS at SHIFT START

Boiler 1_____Klb/hr	#1 TG _____ MW
Boiler 2_____Klb/hr	#2 TG _____ MW
Boiler 3_____Klb/hr	H-24 _____ Klb/hr
Boiler 4_____Klb/hr	Norampac _____ Klb/hr
Boiler 5_____Klb/hr	GreenPac _____ Klb/hr

TIME:	REMARKS

PLANT / EQUIPMENT STATUS

EQUIPMENT LINEUP at SHIFT START

North Crane **I/S O/S** Slaker I/S 1 / 2 Alt Fuels **Y/N** #3 AE Delay on / off

South Crane **I/S O/S** EFW Pac I/S 1 / 2 Ferrous **Y/N** #4 AE Delay on / off

East Slipstick **I/S O/S** DBA Pac I/S A / B Non-Ferrous **Y/N**

West Slipstick **I/S O/S** FWP's I/S 1 / 2 / 3 Receiving Condensate **Y / N** Flow_____

Furnace Temp Exemption in Effect: **#3 Y / N** Date Cleaned:_____ **#4 Y / N** Date Cleaned:_____

TEST: Electric Panel Breaker Indicating Lights **Sat** / **Unsat** All Panel Anunciator Lights **Sat** / **Unsat**

All Boiler Cameras operating properly **Sat / Unsat** **BgHs Cleaning- #3 BgHs Y/N #4 BgHs Y/N**

PCU STATUS on i90 screen-note errors here : **TEST CRO Control of BgHs inlets SAT /Unsat**

EQUIPMENT OUT OF COMMISSION **(restart Auto clean)**

LIMITED USE EQUIPMENT / JUMPER INSTALLED

STEAM CUSTOMER CUTS/HEADER EXCURSIONS

TIME	Customer	Order Rate	Cut To	Time Stm Restored	Lowest Press

TURNOVER ISSUES

OFF GOING CRO_____ ONCOMING CRO_____

ATTACHMENT 6-4

CONTROL ROOM OPERATOR'S LOG

COVANTA
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COVANTA ENERGY NIAGARA
OPERATIONS LOGS
CONTROL ROOM OPERATOR LOG

Doc. OL-6	Rev. 12 No.
Date: 3/12/14	

Current Date: _____

BOILER NUMBER 3 OPERATING CONDITIONS							
DESCRIPTION	PARAMETER	0400	0800	1200	1600	2000	0000
STEAM FLOW (citect)	KLB/HR						
STEAM FLOW SET POINT	KLB/HR						
FURNACE OXYGEN	% V wet						
PRIMARY AIR FLOW	KSCFM						
SECONDARY AIR FLOW	KSCFM						
RAM FEEDER SPEED	%						
TRASH FACTOR	1 - 5						
FURNACE DRAFT	-.4" H20						
FEEDWATER FLOW	KLB/HR						
DRUM LEVEL NORTH	INCHES						
DRUM LEVEL SOUTH	INCHES						
DRUM PRESSURE	PSIG						
STEAM OUTLET PRESSURE	1250 PSIG						
STEAM OUTLET TEMP.	750 ° F						
FIRST PASS TEMP.	>1800 ° F						
SDA OUTLET TEMP	341 ° F						
SDA SLURRY FLOWRATE	GPM						
FABRIC FILER D/P	4-7" H20						
BURNERS IN YES/NO		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
ID FAN VIBES INBRD	< 13.0 MILS						
ID FAN VIBES OUTBRD	< 13.0 MILS						
ID FAN BRNG TEMP INBRD	< 195ºF TRIP						
ID FAN BRNG TEMP OUTBRD	< 195ºF TRIP						
AVG STM/FEED FLOW DEVIATION	0						
Stack Oxygen (O2)	%						

BOILER NUMBER 4 OPERATING CONDITIONS							
DESCRIPTION	PARAMETER	0400	0800	1200	1600	2000	0000
STEAM FLOW (citect)	KLB/HR						
STEAM FLOW SET POINT	KLB/HR						
FURNACE OXYGEN	% V wet						
PRIMARY AIR FLOW	KSCFM						
SECONDARY AIR FLOW	KSCFM						
RAM FEEDER SPEED	%						
TRASH FACTOR	1 - 5						
FURNACE DRAFT	-.4" H20						
FEEDWATER FLOW	KLB/HR						
DRUM LEVEL NORTH	INCHES						
DRUM LEVEL SOUTH	INCHES						
DRUM PRESSURE	PSIG						
STEAM OUTLET PRESSURE	1250 PSIG						
STEAM OUTLET TEMP.	750 ° F						
FIRST PASS TEMP.	>1800 ° F						
SDA OUTLET TEMP	346 ° F						
SDA SLURRY FLOWRATE	GPM						
FABRIC FILER D/P	4-7" H20						
BURNERS IN YES/NO		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
ID FAN VIBES INBRD	< 13.0 MILS						
ID FAN VIBES OUTBRD	< 13.0 MILS						
ID FAN BRNG TEMP INBRD	< 195ºF TRIP						
ID FAN BRNG TEMP OUTBRD	< 195ºF TRIP						
AVG STM/FEED FLOW DEVIATION	0						
Stack Oxygen (O2)	%						

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COVANTA ENERGY NIAGARA
OPERATIONS LOGS
CONTROL ROOM OPERATOR LOG

Doc. OL-6	Rev. 12 No.
Date: 3/12/14	

Current Date: _____

BOILER NUMBER 3 CEMS							
DESCRIPTION	PARAMETER	0400	0800	1200	1600	2000	0000
BAGHOUSE PRESSURE DROP	<"H20						
SDA TEMP (4 hr block avg)	< 341 ° F						
STEAM FLOW (4hr block avg)	<340 kpph						
SO2 ppmc (60min)	< 29 ppmc						
SO2 ppmc (24hr avg)	< 29 ppmc	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	
SO2 LBS/HR (60min)	< 104.4 lbs/hr						
SO2 LBS/HR (3hr roll avg)	< 104.4 lbs/hr						
NOx ppmc (60 min)	< 150 ppmc						
NOx ppmc (24 hr avg)	< 150 ppmc	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	
CO ppmc (60min)	< 100 ppmc						
CO ppmc (4 hr block avg)	< 100 ppmc						
OPACITY (6 min)	< 10%						
FURNACE TEMP (30 min roll)	> 1800 ° F						
BOILER NUMBER 4 CEMS							
BAGHOUSE PRESSURE DROP	<"H20						
SDA TEMP (4 hr block avg)	< 338 ° F						
STEAM FLOW (4hr block avg)	<346 kpph						
SO2 ppmc (60min)	< 29 ppmc						
SO2 ppmc (24hr avg)	< 29 ppmc	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	
SO2 LBS/HR (60min)	< 104.4 lbs/hr						
SO2 LBS/HR (3hr roll avg)	< 104.4 lbs/hr						
NOx ppmc (60 min)	< 150 ppmc						
NOx ppmc (24 hr avg)	< 150 ppmc	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	
CO ppmc (60min)	< 100 ppmc						
CO ppmc (4 hr block avg)	< 100 ppmc						
OPACITY (6 min)	< 10%						
FURNACE TEMP (30 min roll)	> 1800 ° F						

NUMBER 1 BOILER CONTROL ROOM LOG

DESCRIPTION	Units	0400		0800	1600		2000	Limits
Main Steam Flow	kpph							280
Main Steam Temp.	deg F							700-720
Desuperheater Valve Loading	%							
Windbox Air Flow	in. WC							
Total Air Flow	in. WC							
Undergrate Air Flow	in. WC							
Undergrate Controller Setting	%	/		/	/		/	
Overfire Air Flow	in. WC							
Overfire Air Fan Controller Setting	%							
ID Fan Motor Current	Amps							
FD Fan Motor Current	Amps							
OFA Fan Motor Current	Amps							
ID Damper Loading	%							
Air Heater Air Inlet Temp (1)	deg F							
Air Heater Air Outlet Temp (2)	deg F							
Highest Grate Temp/punch # (8-28)	deg F	/		/	/		/	< 450 F
Highest Grate Brng Temp. (30-32)	deg F							
Superheater Inlet Temp (cont)	deg F							<1600 F
Boiler Outlet Temperature (7)	deg F							<900F
Air Heater Gas Inlet Temp. (3)	deg F							
Air Heater Gas Outlet Temp. (4)	deg F							
FD Fan Discharge Pressure	in. WC							
Air Heater Air Inlet Pressure	in. WC							
Air Heater Outlet Pressure	in. WC							
Left Side Stoker Pressure	in. WC							
Right Side Stoker Pressure	in. WC							
Furnace Draft Pressure	in. WC							
Superheater Outlet Pressure	in. WC							
Boiler Outlet Pressure	in. WC							
Economizer Outlet Pressure	in. WC							
Precipitator Outlet Pressure	in. WC							
Air Heater Gas Outlet Pressure	in. WC							
ID Fan Outlet Pressure	in. WC							
Stack Gas Pressure	in. WC							
Stack Oxygen (O2)	%							

NUMBER 2 BOILER CONTROL ROOM LOG

DESCRIPTION	Units	0400		0800	1600		2000	Limits
Main Steam Flow	kpph							280
Main Steam Temp.	deg F							700-720
Desuperheater Valve Loading	%							
Windbox Air Flow	in. WC							
Total Air Flow	in. WC							
Undergrate Air Flow	in. WC							
Undergrate Controller Setting	%	/		/	/		/	
Overfire Air Flow	in. WC							
Overfire Air Fan Controller Setting	%							
ID Fan Motor Current	Amps							
FD Fan Motor Current	Amps							
OFA Fan Motor Current	Amps							
ID Damper Loading	%							
FD Damper Position	%							
Air Heater Air Inlet Temp (1)	deg F							
Air Heater Air Outlet Temp (2)	deg F							
Highest Grate Temp. & punch # (8-28)	deg F	/		/	/		/	<500 F
Superheater Inlet Temperature (cont)	deg F							<1600 F
Boiler Outlet Temperature (7)	deg F							<900 F
Air Heater Gas Inlet Temp. (3)	deg F							
Air Heater Gas Outlet Temp. (4)	deg F							
FD Fan Discharge Pressure	in. WC							
Air Heater Air Inlet Pressure	in. WC							
Air Heater Outlet Pressure	in. WC							
Left Side Stoker Pressure	in. WC							
Right Side Stoker Pressure	in. WC							
Furnace Draft Pressure	in. WC							
Superheater Outlet Pressure	in. WC							
Boiler Outlet Pressure	in. WC							
Economizer Outlet Pressure	in. WC							
Precipitator Outlet Pressure	in. WC							
Air Heater Gas Outlet Pressure	in. WC							
ID Fan Outlet Pressure	in. WC							
Stack Gas Pressure	in. WC							

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COVANTA ENERGY NIAGARA
OPERATIONS LOGS
CONTROL ROOM OPERATOR LOG

Doc. OL-6	Rev. 12 No.
Date: 3/12/14	

Current Date: _____

NUMBER 1 TURBINE-GENERATOR CONTROL ROOM LOG								
DESCRIPTION	Units	0400		0800	1600		2000	Limits
Generator Load	MW							
Generator Voltage	Volts							13.7 KV-14.0 KV
Excitation Voltage	Volts							
Excitation Current	Amps							
Reactive Power	MVars							+2
Generator Current	Amps							
Turbine Condensate Flow Rate	Kpph							
Turbine Vacuum	In. Hg	/		/	/		/	
Atmospheric Pressure	In. Hg							
Absolute Press. (Atmospheric-Vacuum)	In. Hg							<3

NUMBER 2 TURBINE-GENERATOR CONTROL ROOM LOG								
DESCRIPTION	Units	0400		0800	1600		2000	Limits
Generator Load	MW							
Generator Voltage	Volts							13.7 KV-14.0KV
Excitation Voltage	Volts							
Excitation Current	Amps							
Reactive Power	MVars							+2
Generator Current	Amps							
Turbine Condensate Flow Rate	Kpph							
Turbine Vacuum	In. Hg	/		/	/		/	
Atmospheric Pressure	In. Hg							
Absolute Press. (Atmospheric-Vacuum)	In. Hg							<3

AUXILIARIES CONTROL ROOM LOG								
DESCRIPTION	Units	0400		0800	1600		2000	Limits
HCPC Temperature	deg.F							370 – 420
HCPC Pressure	psig							180-210
HCPC Flow Rate	kpph							
NORAMPAC Steam Flow	kpph							
Auxiliary Steam Flow Rate	kpph							

SHIFT	OPERATOR
DAY	
NIGHT	/

ALTERNATE FUELS EMMISSION LOG
DATE:___/____/____

TIME	STEAM FLOW	SO2 1 hr Lb/hr	SO2 3 hr ROLLING AVG	NOX 1 hr Lb/hr	NOX 1 hr lbs/MMBtu	CO 1 hr Lb/hr	CO 4 hr BLOCK AVG	AHGI TEMP
limits	<181KPPH		<30 Lb/hr	<95 Lb/hr	<0.33 lbs/MMBtu		<50 Lb/hr	<400° F
0100								
0200								
0300								
0400								
0500								
0600								
0700								
0800								
0900								
1000								
1100								
1200								
1300								
1400								
1500								
1600								
1700								
1800								
1900								
2000								
2100								
2200								
2300								
0000								
						NOx 24 hr avg		

NUMBER 2 BOILER PRECIPITATOR LOG - DAY SHIFT

	2A1	2A2	2B1	2B2	2C1	2C2	2D1	2D2
Primary Amps								
Primary Voltage								
Field Load (mA)								
A Field Load (KV1)								
B Field Load (KV2)								

NUMBER 2 BOILER PRECIPITATOR LOG - NIGHT SHIFT

	2A1	2A2	2B1	2B2	2C1	2C2	2D1	2D2
Primary Amps								
Primary Voltage								
Field Load (mA)								
A Field Load (KV1)								
B Field Load (KV2)								

SHIFT	OPERATOR
DAY	
NIGHT	/

ATTACHMENT 6-5

ASSISTANT CONTROL ROOM OPERATOR'S LOG

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

COMMENTS:

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

720' ELEVATION					
CONDITION	SAT/UNSAT				
BOILER #3 DRUM PRESS.	1275 PSIG				
BOILER #3 (S) DRUM LVL.	3-5 BULLS				
#3 FEEDWATER PRESS.	1275 PSIG				
BOILER #3 (N) DRUM LVL.	3-5 BULLS				
BOILER #4 DRUM PRESS.	1275 PSIG				
BOILER #4 (S) DRUM LVL.	3-5 BULLS				
#4 FEEDWATER PRESS.	1275 PSIG				
BOILER #4(N) DRUM LVL.	3-5 BULLS				
707' ELEVATION Check condition of continuous blowdown tank and lineup.					
CONDITION	SAT/UNSAT				
698' ELEVATION					
CONDITION	SAT/UNSAT				
689' ELEVATION					
CONDITION	SAT/UNSAT				
679' ELEVATION					
CONDITION	SAT/UNSAT				
671' ELEVATION					
CONDITION	SAT/UNSAT				
663' ELEVATION Check main steam and startup steam lineups, verify proper attemperator station lineups.					
CONDITION	SAT/UNSAT				
652' ELEVATION Check condition/lineup of the startup steam valve.					
CONDITION	SAT/UNSAT				
642' ELEVATION					
CONDITION	SAT/UNSAT				
#4 BLR WASTE WATER INJECTION SYSTEM PRESS	PSIG				
REFUSE PIT CONDITIONS ONCE PER SHIFT		FEED AREA_____%FULL_____		FEED AREA_____%FULL_____	
		CONDITIONS (CIRCLE ONE)		CONDITIONS (CIRCLE ONE)	
		WET DRY MIXED		WET DRY MIXED	

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

632' ELEVATION Check general condition of the Ignition Burners / GUARDS					
CONDITION	**SAT/UNSAT**				
#3 BLR IGN BURNERS cooling fans, running	**IN SERVICE**	**ON / OFF**	**ON / OFF**	**ON / OFF**	**ON / OFF**
#4 BLR IGN BURNERS cooling fans, running	**IN SERVICE**	**ON / OFF**	**ON / OFF**	**ON / OFF**	**ON / OFF**

****

CHECK A/C UNITS IN EFW / DBA
NO FREON PRESENT

DAYSHIFT_____NIGHTSHIFT_____

UPS ROOM, T/F SHACK, CEMS ROOMS, ETC.

****

DESCRIPTION	PARAMETER	DAY SHIFT ROUND 1	DAY SHIFT ROUND 2	NIGHT SHIFT ROUND 1	NIGHT SHIFT ROUND 2
615' ELEVATION Check general condition of the Auxiliary Burners / GUARDS					
CONDITION	**SAT/UNSAT**				
BLR #3 2ND/3RD DFV'S	**SAT/UNSAT**				
#3 2ND AIR FAN DAMPER	**DAMPER %**				
	OIL LEVEL	**SAT/UNSAT**	**SAT/UNSAT**	**SAT/UNSAT**	**SAT/UNSAT**
BLR #4 2ND/3RD DFV'S	**SAT/UNSAT**				
#4 2ND AIR FAN DAMPER	**DAMPER %**				
	OIL LEVEL	**SAT/UNSAT**	**SAT/UNSAT**	**SAT/UNSAT**	**SAT/UNSAT**
#4 RAM FEEDER TABLE	**SAT/UNSAT**				
#3 RAM FEEDER TABLE	**SAT/UNSAT**				
#3 RAM TABLE TIES(TIGHT)	**NORTH/SOUTH**	**/**	**/**	**/**	**/**
#4 RAM TABLE TIES(TIGHT)	**NORTH/SOUTH**	**/**	**/**	**/**	**/**

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

DESCRIPTION	PARAMETER	DAY SHIFT ROUND 1		DAY SHIFT ROUND 2		NIGHT SHIFT ROUND 1		NIGHT SHIFT ROUND 2	
595' ELEVATION **Check condition of the boiler water/steam sample room**									
CONDITION	SAT/UNSAT								
#3 2ND/3RD DIVERTER	AE OR SLIPSTICK								
#4 2ND/3RD DIVERTER	AE OR SLIPSTICK								
ROLLER GRATE INSPECTION		BLR #3	BLR #4	BLR #3	BLR #4	BLR #3	BLR #4	BLR #3	BLR #4
ROLLER GRATE #1	SAT/UNSAT								
ROLLER GRATE #2	SAT/UNSAT								
ROLLER GRATE #3	SAT/UNSAT								
ROLLER GRATE #4	SAT/UNSAT								
ROLLER GRATE #5	SAT/UNSAT								
ROLLER GRATE #6	SAT/UNSAT								
AE HYD. PUMP DISCH	PSIG								
RF HYD. PUMP DISCH	PSIG								
HYD. RESERVOIR LVL									
HYD. RESERVOIR TEMP.	°F								
FILTER CONDITION	SAT/UNSAT								
A/E CYCLE TIME	SEC								
BOTTOM ASH SAFETY LOCKER	SAT/UNSAT	SAT/UNSAT				SAT/UNSAT			
572' ELEVATION **(IF WW INJ FLOW IS LESS THAN 7 GPM – REMOVE NOZZLES)**									
CONDITION	SAT/UNSAT								
BLR #3 WW INJ PUMP AIR PRESS	60-80 PSI								
BLR #3 WW INJ FLOW	> 7 GPM								
BLR #4 WW INJ PUMP AIR PRESS	60-80 PSI								
BLR #4 WW INJ FLOW	> 7 GPM								
DBA RIVER WATER FLOW METER									

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

DESCRIPTION	PARAMETER	DAY SHIFT ROUND 1		DAY SHIFT ROUND 2		NIGHT SHIFT ROUND 1		NIGHT SHIFT ROUND 2	
572' ELEVATION									
BOILER		#3	#4	#3	#4	#3	#4	#3	#4
"A" SIDE SIFTING HOPPERS	SAT/UNSAT								
"A" SIDE SIFTING CONV. Drive Covers in Place	SAT/UNSAT								
ASH EXTRACTOR LVL.	SAT/UNSAT								
ASH EXTRACTOR OPER.	SAT/UNSAT								
GREASE ASH EXTRACTOR (4 SHOTS)	Y / N								
BIFURCATED CHUTE POS.	"A" OR "B"								
SHEARWALL POS.	OPEN/CLOSED								
STROKE SHEARWALL	Y / N								
"B" SIDE SIFTING HOPPERS	SAT/UNSAT								
"B" SIDE SIFTING CONV. Drive Covers in Place	SAT/UNSAT								
PA FAN DAMPER POS.	%								
A/E OVERFLOW BOXES	CLEAR								
		A	B	A	B	A	B	A	B
SECONDARY SUMP PUMP AIR PRESS.	30 PSIG								
GRIT SCREEN FEED PUMP AIR PRESS	15 PSIG								
B/D WATER RECYCLE TANK PUMP DISCH PRESS.	100 PSIG								
		#3	#4	#3	#4	#3	#4	#3	#4
ID FAN OIL LEVEL (MOBILE DTE LIGHT)	SAT/UNSAT								
ID FAN DAMPER POSITION	%								
		DAYS	1ST	DAYS	2ND	NITE	1ST	NITE	2ND
COOLING TOWER BASIN LEVEL	INCHES FROM TOP								
COOLING TOWER WATER VALVED IN/OUT	VALVED IN / OUT								

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

DESCRIPTION	PARAMETER	DAY SHIFT ROUND 1		DAY SHIFT ROUND 2		NIGHT SHIFT ROUND 1		NIGHT SHIFT ROUND 2	
PLANT AIR COMPRESSORS									
AIR COMPRESSOR		A	B	A	B	A	B	A	B
AIR TEMP. LP OUT	°C								
AIR TEMP HP OUT	°C								
AIR TEMP HP IN	°C								
OIL TEMP.	°C								
OIL PRESS.	PSIG								
DISCHARGE PRESS	PSIG								
INTERCOOLER PRESS.	PSIG								
FILTER PRESS	H20								
WATER TEMP COMP.	°C								
WATER TEMP. A.C.	°C								
AIR OUT TEMP OUT	°C								
OIL FILTER DP	PSID								
LOADED TIME	HRS								
INLET COOLING PRESS	PSIG								
INLET COOLING TEMP	F								
OUTLET COOLING PRESS	PSIG								
OIL LEVEL	SAT								
AIR DRYER		A	B	A	B	A	B	A	B
INLET PRESS.	PSIG								
OUTLET PRESS.	PSIG								
LEFT CHAMBER PRESS.	PSIG								
RIGHT CHAMBER PRESS.	PSIG								
CYCLES LEFT TOWER	KHZ								
CYCLES RIGHT TOWER	KHZ								
MOISTURE INDICATOR	WET/DRY								

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

NUMBER 1 TURBINE-GENERATOR LOG

Description	Units	0800		1600	2000		0400	Limits
Turbine Speed	RPM							3600
Turbine Hour Meter	Hours							
Live Steam Pressure Before Main Stop	Psig							1000
Extraction Steam Pressure	psig							200
Control Fluid Pressure	Psig							>1700
Lube Oil Pressure After Filter	Psig							22
HP Wheel Chamber Pressure	psig							
LP Wheel Chamber Pressure	psig							
Eccentricity	Mils							<8
Drain Oil Temp. #1 Bearing Front	Deg F							<158
Drain Oil Temp. #2 Bearing	Deg F							<158
Drain Oil Temp. #3 Bearing	Deg F							<158
Drain Oil Temp. #4 Bearing	Deg F							<158
Drain Oil Temp. #5 Bearing	Deg F							<158
Drain Oil Temp. #1 Bearing Rear	Deg F							<158
Exhaust Steam Temperature	Deg F							<140
Metal Temperature	Deg F							<700
Live Steam Temp. Before Main Stop	Deg F							700 – 720
Live Steam Temp. Before Drain	Deg F							700-720
#1 Bearing V/H Vibration	Mils	/		/	/		/	<3
#2 Bearing V/H Vibration	Mils	/		/	/		/	<3
#3 Bearing V/H Vibration	Mils	/		/	/		/	<3
#4 Bearing V/H Vibration	Mils	/		/	/		/	<3
Shaft position	Mils	/		/	/		/	<16
Casing Expansion	Inches	/		/	/		/	
Accumulator 1 Pressure	psig							1090
Accumulator 2 Pressure	psig							1090
Magnahelic Gauge Reading	Inches							
Generator KWH Meter								
Lube oil Pressure Before Filter	psig							
Lube Oil Filter delta P indicator	rings							
Lube Oil Tank Level (from top of tank)	inches							
Lube Oil Cooler - Oil Inlet Temp.	deg F							

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

Description	Units	0800		1600	2000		0400	Limits
Lube Oil Cooler - Oil Outlet Temp.	deg F							
Lube Oil Cooler – Water Outlet Temp.	deg F							<95
Lube Oil Cooler – Water Inlet Temp.	deg F							100
Control Oil Tank Level								
Control Oil Tank Temperature	deg F							<140
Control Oil Desiccant	color							blue
Regeneration Filter Flow	GPM							.8
Surface Condenser Inlet Water Temp.	deg F							<95 >50
Surface Condenser Outlet Water Temp.	deg F							<110
Surface Condenser Inlet Pressure	psig							33
Surface Condenser delta P	psig							<20
Gen. Air Cooler Inlet Water Temp.	deg F							<95
Gen. Air Cooler N Outlet Water Temp.	deg F							103
Gen. Air Cooler C Outlet Water Temp.	deg F							103
Gen. Air Cooler S Outlet Water Temp.	deg F							103
Hotwell Pump Discharge Pressure	psig							>100
Gland Steam Pressure	In. H_20							8
Condensate Pressure Before Eductor	psig							>80
Non-Condensable Flow	pph							<60

DAY SHIFT

Cooling Tower Fan Speed: North Fan F/S South Fan F/S	Nitrogen Bottle Pressure:_____ (>100psi)
#1 Turbine Generator Casing Drain Status: Open / Closed	
#2 Turbine Generator Casing Drain Status: Open / Closed	
ULC 1000/1600 protective relay targets and lockout relay supervisory lights clear	SAT / UNSAT
ULC 1000/1600 ventilation fan I/S O/S	
ULC 1200/1400 protective relay targets and lockout relay supervisory lights clear	SAT / UNSAT
ULC 1200/1400 ventilation fan I/S O/S	
#1 Turbine Gland Steam Condenser sight glass level	SAT/UNSAT
#2 Turbine Gland Steam Condenser sight glass level	SAT/UNSAT
AVR ROOM UPS PANEL note any alarm conditions:	SAT/UNSAT
COMMENTS:	

ASSISTANT CONTROL ROOM OPERATOR LOG Date:_____/_____/_____

NUMBER 2 TURBINE-GENERATOR LOG

Description	Units	0800		1600	2000		0400	Limits
Turbine Speed	RPM							3600
Turbine Hour Meter	Hours							
Live Steam Pressure Before Main Stop	Psig							1000
Extraction Steam Pressure	psig							200
Control Fluid Pressure	Psig							>1700
Lube Oil Pressure After Filter	Psig							22
HP Wheel Chamber Pressure	psig							
LP Wheel Chamber Pressure	psig							
Eccentricity	Mils							<8
Drain Oil Temp. #1 Bearing Front	Deg F							<158
Drain Oil Temp. #2 Bearing	Deg F							<158
Drain Oil Temp. #3 Bearing	Deg F							<158
Drain Oil Temp. #4 Bearing	Deg F							<158
Drain Oil Temp. #5 Bearing	Deg F							<158
Drain Oil Temp. #1 Bearing Rear	Deg F							<158
Exhaust Steam Temperature	Deg F							<140
Metal Temperature	Deg F							<700
Live Steam Temp. Before Main Stop	Deg F							700 – 720
Live Steam Temp. Before Drain	Deg F							700-720
#1 Bearing V/H Vibration	Mils	/		/	/		/	<3
#2 Bearing V/H Vibration	Mils	/		/	/		/	<3
#3 Bearing V/H Vibration	Mils	/		/	/		/	<3
#4 Bearing V/H Vibration	Mils	/		/	/		/	<3
Shaft position	Mils	/		/	/		/	<16
Casing Expansion	Inches	/		/	/		/	
Accumulator 1 Pressure	psig							1090
Accumulator 2 Pressure	psig							1090
Magnahelic Gauge Reading	Inches							
Generator KWH Meter								
Lube oil Pressure Before Filter	psig							
Lube Oil Filter delta P indicator	rings							
Lube Oil Tank Level (from top of tank)	inches							
Lube Oil Cooler - Oil Inlet Temp.	deg F							
Lube Oil Cooler - Oil Outlet Temp.	deg F							

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

Description	Units	0800		1600	2000		0400	Limits
Lube Oil Cooler – Water Outlet Temp.	deg F							<95
Lube Oil Cooler – Water Inlet Temp.	deg F							100
Control Oil Tank Level								
Control Oil Tank Temperature	deg F							<140
Control Oil Desiccant	color							Blue
Regeneration Filter Flow	GPM							.8
Surface Condenser Inlet Water Temp.	deg F							<95 >50
Surface Condenser Outlet Water Temp.	deg F							<110
Surface Condenser Inlet Pressure	psig							33
Surface Condenser delta P	psig							<20
Gen. Air Cooler Inlet Water Temp.	deg F							<95
Gen. Air Cooler N Outlet Water Temp.	deg F							103
Gen. Air Cooler C Outlet Water Temp.	deg F							103
Gen. Air Cooler S Outlet Water Temp.	deg F							103
Hotwell Pump Discharge Pressure	psig							>100
Gland Steam Pressure	In. H_20							8
Condensate Pressure Before Eductor	psig							>80
Non-Condensable Flow	pph							<60

NIGHT SHIFT	
Cooling Tower Fan Speed: North Fan F/S South Fan F/S	
#1 Turbine Generator Casing Drain Status: Open / Closed	
#2 Turbine Generator Casing Drain Status: Open / Closed	
ULC 1000/1600 protective relay targets and lockout relay supervisory lights clear	SAT / UNSAT
ULC 1000/1600 ventilation fan I/S O/S	
ULC 1200/1400 protective relay targets and lockout relay supervisory lights clear	SAT / UNSAT
ULC 1200/1400 ventilation fan I/S O/S	
#1 Turbine Gland Steam Condenser sight glass level	SAT/UNSAT
#2 Turbine Gland Steam Condenser sight glass level	SAT/UNSAT
Filter change done on: Date Operator	Days/Nights
First of the month replace filters on ventilation fans for ULC's 1000/1600 , 1200/1400 and crane load center	
WINTER MONTHS: Verify Power and Lights to HEAT TRACE PANELS	SAT/UNSAT

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

BOILER AUXILIARIES LOG

Description	Units	0800	0800		2000	2000		Limits
Feed Pump In Service	½	#1	#2		#1	#2		
Steam Supply Pressure	Psig							
Governor Oil Level								
Turbine Oil Pump Reservoir Level	>1/2							
Turbine Inboard Bearing Oil Pressure	Psig							5 psi
Turbine Outboard Bearing Oil Pressure	Psig							5 psi
Turbine Speed	Rpm							
Feedpump Discharge Pressure	Psig							
Feedpump Oil Pump Reservoir Level	>1/2							
Feedpump Lube Oil Filter Inlet Pressure	Psig							
Feedpump Lube Oil Filter Outlet Pressure	Psig							
Verify Cooling Flow to all Components								Flow
Electric Driven Feedpump			#3			#3		
Motor Inboard Oil Level	>1/2							
Motor Outboard Oil Level	>1/2							
Gear Increaser Oil Level	>1/2							
Gear Increaser Oil Pressure	Psig							
Electric Feedpump Discharge Pressure	Psig							
Feedpump Oil Pump Reservoir Level	>1/2							
Feedpump Lube Oil Filter Inlet Pressure	Psig							
Feedpump Lube Oil Filter Outlet Pressure	psig							
Verify Cooling Flow to all Components								Flow
All feed pump skids oil free (clean oil and put down new absorbent pads if needed)		Sat / Unsat			Sat / Unsat			
		0800	0800			2000	2000	
Boiler Fans		#1	#2			#1	#2	
OFA Motor Inboard/Outboard Oil Level	>1/2							
OFA Fan Inboard/Outboard Oil Level	>1/2							
OFA Fan Inboard/Outboard Cooling Flow	flow							
Cooling Fan in Service	y/n							
OFA Cooling Fan Differential Pressure								.35
FD Motor Inboard/Outboard Oil Level	>1/2							
FD Fan Inboard/Outboard Oil Level	>1/2							
FD Fan Inboard/Outboard Cooling Flow	flow							

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

Description	Units	0800	0800		2000	2000		Limits
FD Fan Damper Position	%							
East Undergrate Air Damper Operability								Sat
West Undergrate Air Damper Operability								Sat
		#1	#2			#1	#2	
ID Motor Inboard/Outboard Oil Level	>1/2							
ID Fan Inboard/Outboard Oil Level	>1/2							
ID Fan Inboard/Outboard Cooling Flow	flow							
ID Cooling Fan In Service	y/n							
Boiler Air Heater								
Motor Oil Level	>1/2							
Drive Unit Upper Bearing Oil Level	vis.							
Drive Unit Lower Bearing Oil Level	vis.							
Cooling Water Flow	flow							
Ingersoll Rand Air Compressors								
Oil Sump Level	>3/4							
Discharge Air Temperature	deg F							
Sump Air Pressure	psig							
Run Hour Meter	hour							
Verify Proper Dryer Operation								
#1 Circ Water Pump Current	Amp							
#1 Circ Water pump Temp	deg C							
#2 Circ Water Pump Current	Amp							
#2 Circ Water pump Temp	deg C							
DESCRIPTION							0000	LIMITS
DI TANK LEVEL	%							>75%
LIME TANK LEVEL	%							>50%
POLYMER TANK LEVL	Inches							
FILL LIME AND POLYMER TANKS	Y/N							
Diesel Fire Pump Fuel Tank Levels	1/2/3			///				%
Diesel Fire Pumps In Auto/Off (which)	1/2/3			///				Auto/off
Diesel Fire Pump cooling Water Bypass Open	1/2/3			///				Service

Shift	Operator
Day	
Night	

ASSISTANT CONTROL ROOM OPERATOR LOG Date:_____/_____/_____

DBA BOILER FLAME LOG

	BOILER #3					BOILER #4			
	7th FLOOR	EAST	7TH FLOOR	WEST		7th FLOOR	EAST	7TH FLOOR	WEST
DAY SHIFT 1ST ROUND		SAT/UNSAT		SAT/UNSAT			SAT/UNSAT		SAT/UNSAT
		CF / IF		CF / IF			CF / IF		CF / IF
LOAD	TIME_____					TIME_____			
DAY SHIFT 2ND ROUND		SAT/UNSAT		SAT/UNSAT			SAT/UNSAT		SAT/UNSAT
		CF / IF		CF / IF			CF / IF		CF / IF
LOAD	TIME_____					TIME_____			
NIGHT SHIFT 1ST ROUND		SAT/UNSAT		SAT/UNSAT			SAT/UNSAT		SAT/UNSAT
		CF / IF		CF / IF			CF / IF		CF / IF
LOAD	TIME_____					TIME_____			
NIGHT SHIFT 2ND ROUND		SAT/UNSAT		SAT/UNSAT			SAT/UNSAT		SAT/UNSAT
		CF / IF		CF / IF		CF / IF	CF / IF		CF / IF
LOAD	TIME_____					TIME_____			

CF-CONTINUOUS FLAME IF- INTERMITTENT FLAME

1. **FLAMES SHOULD BE OBSERVED THROUGH THE OBSERVATION DOORS AT LEAST TWO TIMES PER SHIFT. NOTE: YOU MAY NEED A TOOL TO CLEAR ASH FROM DOOR OPENING**
2. **ENSURE PROPER PPE IS IN USE, NOMEX HOOD AND FACESHIELD**
3. **WHEN OBSERVING FLAMES AT THE 7TH LEVEL, YOU MAY SEE INTERMITTENT FLAMES BUT NOTHING CONTINUOUS HITTING THE WALLS DIRECTLY**
4. **ANY UNUSUAL CONDITIONS SHOULD BE REPORTED TO THE SHIFT SUP AND THE CRO.**
5. **ALL UNSAT FLAME REPORTS SHOULD BE REINSPECTED AFTER CORRECTIVE ACTION HAS BEEN TAKEN. NOTE TIME AND RESULTS BELOW.(FLAMES SAT/UNSAT)**

ASSISTANT CONTROL ROOM OPERATOR LOG

Date:_____/_____/_____

DBA 5KV BREAKER ROOM		
Verify all protective targets and lock out relay supervisory lights are cleared	SAT / UNSAT	SAT / UNSAT
5KV BUS VOLTS/ AMPS "A"	/	/
5KV BUS VOLTS/ AMPS "B"	/	/
ATLAS COMPRESSOR AMPS A/B	/	/

115 KV SWITCHGEAR ROOM	
Verify all protective flags and alarms area cleared	SAT / UNSAT

115 / 13.8 KV TRANSFORMER (DAYS)				
Description	Units	Line 185	Line 186	Limits
Liquid Temp	deg C			-20 to 85
Winding Temp	deg C			< 75
Liquid Level		Low / Mid / High	Low / Mid / High	
N2 Bottle Pressure	psi			> 100
Transformer N2 Press	psi			1-5
701A / 701B Press	psi	Days_____/_____	Days_____/_____	>78

DBA 5KV BREAKER ROOM		
Verify all protective targets and lock out relay supervisory lights are cleared	SAT / UNSAT	SAT / UNSAT
5KV BUS VOLTS/ AMPS "A"	/	/
5KV BUS VOLTS/ AMPS "B"	/	/
ATLAS COMPRESSOR AMPS A/B	/	/

115 KV SWITCHGEAR ROOM	
Verify all protective flags and alarms area cleared	SAT / UNSAT

115 / 13.8 KV TRANSFORMER (NIGHTS)				
Description	Units	Line 185	Line 186	Limits
Liquid Temp	deg C			-20 to 85
Winding Temp	deg C			< 75
Liquid Level		Low / Mid / High	Low / Mid / High	
N2 Bottle Pressure	psi			> 100
Transformer N2 Press	psi			1-5
701A / 701B Press	psi	Nights_____/_____	Nights_____/_____	>75

COMMENTS: _____

ATTACHMENT 6-6

BACKEND OPERATOR'S LOG

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COVANTA ENERGY NIAGARA
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DESCRIPTION	PARAMETER	DAYS				NIGHTS			
		ROUND 1		ROUND 2		ROUND 1		ROUND 2	
SDA'S		#3	#4	#3	#4	#3	#4	#3	#4
SDA INLET TEMP	DEGREES F								
SDA OUTLET TEMP	DEGREES F								
SDA DP	H20								
SDA SLURRY FLOW	GPM								
SLURRY BACK PRESS	PSI								
BgHs Inlet / Outlet Temp.	DEGREES F								
Bg/Hs Temp. Differential	>20 DEGREES F								
ATOMIZER A		#3	#4	#3	#4	#3	#4	#3	#4
SLURRY FLOW	GPM								
WATER FLOW	GPM								
VIBRATIONS	IN / SEC								
AMPS									
LUBE OIL LEVEL	SAT / UNSAT								
LOWER BRNG TEMP	°F								
UPPER BRNG TEMP	°F								
COOLING WATER TEMP	°F								
PSI TO FOGGER									
FOGGING PSI									
UPPER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
LOWER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
VAC PUMP OIL JAR	FULL	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
RETURN OIL VACUUM	INCHES								
COOLING WTR FLOW	SAT / UNSAT								
ATOMIZER B		#3	#4	#3	#4	#3	#4	#3	#4
SLURRY FLOW	GPM								
WATER FLOW	GPM								
VIBRATIONS	IN / SEC								
AMPS									
LUBE OIL LEVEL	SAT / UNSAT								
LOWER BRNG TEMP	°F								
UPPER BRNG TEMP	°F								
COOLING WATER TEMP	°F								
PSI TO FOGGER									
FOGGING PSI									
UPPER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
LOWER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
VAC PUMP OIL JAR	FULL	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
RETURN OIL VACUUM	INCHES								
COOLING WTR FLOW	SAT / UNSAT								

DESCRIPTION	PARAMETER	DAYS				NIGHTS			
		ROUND 1		ROUND 2		ROUND 1		ROUND 2	
ATOMIZER C		#3	#4	#3	#4	#3	#4	#3	#4
SLURRY FLOW	GPM								
WATER FLOW	GPM								
VIBRATIONS	IN / SEC								
AMPS									
LUBE OIL LEVEL	SAT / UNSAT								
LOWER BRNG TEMP	°F								
UPPER BRNG TEMP	°F								
COOLING WATER TEMP	°F								
PSI TO FOGGER									
FOGGING PSI									
UPPER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
LOWER BRNG SUPPLY	FLOW	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
VAC PUMP OIL JAR	FULL	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
RETURN OIL VACUUM	INCHES								
COOLING WTR FLOW	SAT / UNSAT								
ATOMIZER COOLING SYSTEM (VERIFY VALVE LINE UP)		#3	#4	#3	#4	#3	#4	#3	#4
RESERVE TANK LEVEL	25-35”								
SYSTEM AIR PRESS	25 PSIG								
MAKE-UP DRUM LEVEL	MIN HALF FULL	YES / NO				YES / NO			
ATOMZIER BENCH AREA									
ACID TANK-CLEAN PARTS REMOVED	YES	YES / NO				YES / NO			
SPARE ATOMIZER WHEELS W/GOOD NOZZLES	>2								
FLYASH SYSTEM		#3	#4	#3	#4	#3	#4	#3	#4
SDA HOPPER	SAT / UNSAT								
SDA DFV’S									
CVR-500-02									
CVR-500-03									
BAGHOUSE DFV’S									
CVR-500-04A									
CVR-500-04B									
CVR-500-04C									
BAGHOUSE HOPPERS									
CVR-500-05									
BAGHOUSE CLEANING CYCLE									
POPPIT OILER LEVEL									
BGHS D/F OILER LEVEL									
DESCRIPTION	PARAMETER	DAYS				NIGHTS			

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		ROUND 1		ROUND 2		ROUND 1		ROUND 2	
BAGHOUSES		**#3**	**#4**	**#3**	**#4**	**#3**	**#4**	**#3**	**#4**
BAGHOUSE DP									
MODULES IN SERVICE									
HEATER OPERATION									
CLEANING CYCLE	**ON / OFF**								
REV AIR FAN INSPECTION	**SAT / UNSAT**								
AIR SWEEP OPERATION	**SAT / UNSAT**								

*Upper BgHs Platform Levels Clear of Debri. (initials) DAYS_____ NIGHTS_____
*Test Eyewashes every Shift during winter cold. (Initials) DAYS_____ NIGHTS_____I
*Fly ash on Concrete Floor #3 BgHs Where? SDA 1 2 3 4 5 6 7 8 (circle) W.O.#_____
*Fly ash on Concrete Floor #4 BgHs Where? SDA 1 2 3 4 5 6 7 8 (circle) W.O.#_____
LIME SILO TRENCH SAT / UNSAT (Action Taken)_____
Bag House Trenches SAT / UNSAT (Action Taken)_____

SILOS / SLAKERS / PUMPS		**#1**	**#2**	**#1**	**#2**	**#1**	**#2**	**#1**	**#2**
LIME LEVEL	**%**								
TRAIN IN SERVICE	**1 OR 2**								
SLAKING H20 PRESS	**PSIG**								
SLAKER TEMP	**DEGREES F**								
SLAKING H20 VLV	**% OPEN**								
DILUTION H20 FLOW	**GPM**								
LIME FEEDER SPEED	**%**								
LIME CHUTE	**SAT / UNSAT**								
ASPIRATOR CHECK	**SAT / UNSAT**								
BIN ACTIVATOR	**SAT / UNSAT**								
TANK AGITATOR	**SAT / UNSAT**								
GRIT SCREEN	**SAT / UNSAT**								
GRIT CONVEYOR	**SAT / UNSAT**								
SLURRY TANK LEVEL	**%**								
SLURRY CONC.	**%**								
PUMPS IN SERVICE	**1-2-3**								
DISCHARGE PRESS	**PSIG**								
SEAL WATER FLOW	**SAT / UNSAT**								
UREA SKID									
TANK LEVEL	**20-90%**								
TANK TEMPERATURE	**MIN 75F**								
CIRC PUMP PUMP I/S	**A / B**	**A / B**		**A / B**		**A / B**		**A / B**	
TEMP DISC PRESS	**30-50 PSIG**								
CIRC HEATER I/S	**SAT / UNSAT**	**SAT / UNSAT**		**SAT / UNSAT**		**SAT/ UNSAT**		**SAT / UNSAT**	
TANK HEATER I/S	**SAT / UNSAT**	**SAT / UNSAT**		**SAT / UNSAT**		**SAT/ UNSAT**		**SAT / UNSAT**	
SEAL LINE TEMP	**MIN 75F**								

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DESCRIPTION	PARAMETER	DAYS		NIGHTS	
		ROUND 1	ROUND 2	ROUND 1	ROUND 2
BOILER #3 METERING MODULE					
MTR PUMP 1 FLOW	4-8 GPM				
BST PUMP 1 FLOW	GPM				
BST PUMP 1 PRESS	60-80 PSIG				
MTR PUMP 2 FLOW	4-8 GPH				
BST PUMP 2 FLOW	GPM				
BST PUMP 2 PRESS	60-80 PSIG				
BOILER #4 METERING MODULE					
MTR PUMP 1 FLOW	4-8 GPH				
BST PUMP 1 FLOW	GPM				
BST PUMP 1 PRESS	60-80 PSIG				
MTR PUMP 2 FLOW	4-8 GPH				
BST PUMP 2 FLOW	GPM				
BST PUMP 2 PRESS	60-80 PSIG				

CARBON FEED SYSTEM		#3	#4	#3	#4	#3	#4	#3	#4
BLOWER DISCHARGE	8 to 12 PSI								
EDUCTOR SUCTION	.5-3" WC (Note #1)								
FEEDER SET PIONT	>30								
HOSE CONNECTIONS	SAT								
MAIN AIR PRESSURE	100 PSI								
HOPPER FLUIDIZING AIR	60 PSI								
PANT LEG FLUIDIZING AIR	30 PSI								
SILO LEVEL	FT								
SILO READY TO FILL	NOTIFY SS IF YES	YES / NO				YES / NO			
#3 DIRECTIONAL SLIDEGATE	OPEN=>SDA INLET CLOSED=>SDA OUTLET	OPEN / CLOSED				OPEN / CLOSED			
#4 DIRECTIONAL SLIDEGATE	OPEN=>SDA INLET CLOSED=>SDA OUTLET	OPEN / CLOSED				OPEN / CLOSED			

Note #1: Clean the injection nozzles when the suction pressure is within .2" WC of the low setpoint. The setpoint for #3 carbon system should be at 1" WC and on #4 carbon system at .5" WC.

CALIBRATION CHECK OF CARBON FLOW (LBS/HOUR) TO BE COMPLETED EVERY MONDAY/FRIDAY ON #3 / #4 UNIT		#3 SYSTEM LBS._____ TOTAL MINUTES OF TEST_____ LBS/HOURS_____
NAME:	NAME:	#4 SYSTEM LBS._____ TOTAL MINUTES OF TEST_____ LBS/HOURS_____

A/C UNITS IN BACK END	NO FREON LEAK	SAT / UNSAT	SAT / UNSAT

DAY SHIFT								
BOILER #3 DENOX MOD #2								
INJECTOR		**A**	**B**	**C**	**D**	**E**	**F**	**G**
FLOW	**GPM**							
CHEMICAL PRESS	**60-80 PSI**							
AIR PRESS	**80 PSI**							
BOILER #4 DENOX MOD #2								
INJECTOR		**A**	**B**	**C**	**D**	**E**	**F**	**G**
FLOW	**GPM**							
CHEMICAL PRESS	**60-80 PSI**							
AIR PRESS	**80 PSI**							

NIGHT SHIFT								
BOILER #3 DENOX MOD #2								
INJECTOR		**A**	**B**	**C**	**D**	**E**	**F**	**G**
FLOW	**GPM**							
CHEMICAL PRESS	**60-80 PSI**							
AIR PRESS	**80 PSI**							
BOILER #4 DENOX MOD #2								
INJECTOR		**A**	**B**	**C**	**D**	**E**	**F**	**G**
FLOW	**GPM**							
CHEMICAL PRESS	**60-80 PSI**							
AIR PRESS	**80 PSI**							

COVANTA ENERGY NIAGARA
OPERATIONS LOGS
BACKEND OPERATORS LOG

Doc. OL-3	Rev. 17 No.
Date3/12/14	

Current Date: _____

DAY		**NIGHT**	

ATTACHMENT 6-7

REFUSE CRANE OPERATOR LOG

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Doc. OL-5	Rev 9 No.
Date: 3/12/14	

COVANTA NIAGARA, L.P.
OPERATIONS LOGS
CRANE OPERATOR LOG

Name:_____ Date: _____ Shift: _____

(Conditions at the start of the shift)
BOILER:
BLR #3_____KPPH **CRANE CAB CLEANLINESS** **SAT/ UNSAT**
BLR #4 _____KPPH **MSW FEED AREA** _____

CRANE CAB PRESSURE ("H2O): _____ (Change filters at </= .10"H2O)
NORTH CRANE: IN SERVICE / AVAIL / UNAVAIL LAST CLEANED __/__/__
WATER CANNON LAST TESTED (water flow tested monthly April-October) __/__/__
SOUTH CRANE: IN SERVICE / AVAIL / UNAVAIL LAST CLEANED __/__/__
WATER CANNON LAST TESTED (water flow tested monthly April-October) __/__/__
SAFETY LIMITS: (Shift Supervisor approval required to run if any safety limit does not work properly)

ANTI-COLLISION ALARM	**North**	**SAT / UNSAT**	**South**	**SAT / UNSAT**
CAB/DECK SLOW DOWN	**North**	**SAT / UNSAT**	**South**	**SAT / UNSAT**
WALL SLOW DOWN AND STOP:	**North**	**SAT / UNSAT**	**South**	**SAT / UNSAT**
HOIST UPPER LIMIT:	**North**	**SAT / UNSAT**	**South**	**SAT / UNSAT**
CHARGING DECK LASER	**North**	**SAT / UNSAT**	**South**	**SAT / UNSAT**

GRAPPLE LOG (Note oil leaks and other noticed or known issues)		
NORTH #_____	**SOUTH # _____**	**SPARE # _____ DECK___**

TIME	CRANE / BOILER RELATED COMMENTS
Processing coal tar Y / N	**Trucks received_____ Processed _____**

OFF GOING OPERATOR: _____ ON COMING OPERATOR: _____

CRANE OPERATOR LOG ENTRIES

THE FOLLOWING IS A BRIEF DESCRIPTION OF WHAT SHOULD BE PLACED ON THE CRANE OPERATOR LOGS BUT IS NOT LIMITED TO ONLY THESE ITEMS. THE LOGBOOK IS AN OFFICIAL RECORD AND SHOULD BE TREATED AS SUCH.

THE TOP PART OF THE LOG IS INTENDED TO HIGHLIGHT PLANT CONDITIONS AND ANY SYSTEM DEFICIENCIES AT SHIFT TURNOVER. THERE IS A SPACE NEXT TO THE CRANE OR GRAPPLE TO LOG ISSUES AND IF NEEDED PLEASE CARRY ON INTO THE COMMENTS SECTION. CRANE CAB CLEANLINESS IS A SUBJECTIVE AREA. PLEASE USE COMMON COURTESY AND KEEP THE AREA CLEAN. THE CRANE CAB IS NOT INTENDED TO BE A BREAK AREA FOR OTHER WATCH STANDERS OR PERSONNEL. THE CRANE OPERATOR HAS THE RIGHT TO EVICT THOSE WHO CAN NOT KEEP THE AREA CLEAN OR THOSE THAT DO NOT BELONG. THE AREA IS A PLACE THAT FOOD AND BEVERAGE CAN BE CONSUMED SO IT MUST STAY CLEAN OR THESE PRIVLEDGES WILL BE REMOVED.

THE CRANE SAFETY LIMITS NEED TO BE TESTED AT THE BEGINNING OF EACH SHIFT. ANY DEFICIENCY SHOULD BE BROUGHT TO THE SHIFT SUPERVISOR'S ATTENTION.

COMMENTS SHOULD LOG ALL JOB RELATED CHANGES SUCH AS LOAD SETPOINTS, CHUTE CONDITIONING WATER,MSW ON/OFF FLOOR, FIRES AND CRANE OR GRAPPLE FAILURES OR DISCREPANCIES THAT OCCUR DURING THE SHIFT. ANY MAINTENANCE THAT MAY OCCUR SHOULD ALSO BE LOGGED ALONG WITH THE STAUS OF THE JOB. THE OPERATOR SHOULD SIGN THE LOG PRIOR TO BEING RELIEVED. THE ON COMING OPERATOR SHOULD SIGN AT THE BOTTOM ACKNOWLEDGING AND ACCEPTING THE EXISTING CONDITIONS AND THE OPERATING PLAN GOING FORWARD.

ATTACHMENT 6-8

FERROUS AND NONFERROUS OPERATOR'S LOG

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COVANTA ENERGY NIAGARA
OPERATIONS LOGS

Doc. OL-2	Rev. 4 No.
Date: 1/17/13	

ALO LOG

Date: ____/_____/_____ SHIFT: _____ OPERATOR: _____

ASH / FERROUS SYSTEM	NON-FERROUS SYSTEM OPERATOR: _____	
LIST EQUIPMENT GREASED:	LEVELS AT END OF WATCH	
	FEED STOCK INVENTORY (BUCKETS)	
	FERROUS TRUCKS SHIPPED	
	FERROUS INVENTORY # OF TRUCKS	
CLEANED ROLLERS ON BELTS: (list belts that were cleaned	BUCKETS THROUGH N.F. SYSTEM	
	WOOD CHIPS CHANGED OUT. TIME_____	
	LIST EQUIPMENT GREASED:	
BOTTOM ASH TRAIN IN SERVICE NORTH / SOUTH		
PUGMILL IN SERVICE EAST / BOTH / WEST		

EQUIPMENT OUT OF COMMISSION	MAINTENANCE PERFORMED

TIME	REMARKS

OFF-GOING OPERATOR_____ ONCOMING OPERATOR_____

ATTACHMENT 6-9

WATER TREATMENT OPERATOR'S LOG

Date: _____

Covanta Energy Niagara

Demineralizer Runs		Mixed Bed Runs	
1		1	
2		2	
3		3	

Notes and Asides

pH monitor calibration:

Tank Levels and Integrator Readings

DI Production				
Condensate Tank disch. FQI 361				
A-1 Condensate FQI 304				
Raw Water FQI 500				
Norampac Cond (to cond tank)				
Norampac Cond (to sewer)				
Acid Tank	Caustic Tank	CL-1432	CT Acid	Bleach

Buffer System		
Pumps	**Controller**	**Ph > 10.0**
1	Auto Manual	Sat/Unsat
2	Auto Manual	**Tank Full** Yes/No

Operator: _____

A/C ROOM UNIT INSPECTION NO FREON PRESENT SAT/UNSAT

COVANTA ENERGY

Water Treatment Operator Log

Doc OL-10
Rev. 9 3/7/2011

Date:_____

Boilers

O/L	Cond <100µmho	pH 9.2-9.9	Phos 5-15 ppm	Silica <2 ppm	Phos pump	Pump setting	Phos level	B/D position
1								
2								
3							DBA day tank	
4								

Dearators

O/L	Upr Temp 250-270F	Lwr Temp 250-270F	Pressure 20-29psi	pcv-808 5-25%	DA O2
1					
2					

Main Steam

pH 8.0-9.0	Sodium <15 ppb	Silica <20 ppb

Raw Water / Clarifier

DI Tk level	pH mtr cal 4,7,10 bfrs	Swr pH <5.0	Swr pH >10.0	RW Cond.	RW hardness	FC 313 Flow	Temp (F) 100-110	Torque <40	Turbine speed	Rake speed

Demineralizers

O/L	Cond <10 µmho	Anion pH 6.0-10.0	Silica <50 ppb	hardness ppm	resin level	Totalizer flow
1						
2						
3						

Gravity Filters

Cond µmhos	pH 9.4-9.6	Hardness ppm

Lime Tank

P Alk	M Alk	2P-M (5-15)	Chem count	Lime timer	Pump online	Bags added

Feedwater

Cond <10µmho	pH 8.0-9.0	Silica <50 ppb	Mekor	Mekor pumps	Mekor pmp settings	Mekor tank lvl	Morph Pump	Morph tank level
				E / W	/			

Mixed Bed Polishers

O/L	Cond <.2 µmho	Silica <15 ppb	Temp < 135F	Flow rate

RWHX

Cond <15 µmho	Rcvr level	Stm ctr mode	3 way
			CT
			TT

Turbines

O/L	Cond µmhos	pH 8.0-9.0	Hardness 0 (ppm)	Silica <20 ppb
1				
2				

Steam Exports

Customer	Cond	pH	Flow	Silica	Temp
Oxy					
Norampac					

ATTACHMENT 6-10

ALTERNATE FUELS OPERATOR'S LOGS

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COVANTA NIAGARA
ALTERNATE FUELS OPERATOR

Doc. OL – 4	Rev.8
Date: 3/8/14	

DATE:_____/_____/_____

COMMENTS / TASKS COMPLETED PER SHIFT SUPERVISOR: _____

DESCRIPTION	UNITS	DAYS	DAYS	NIGHTS	NIGHTS	LIMITS
NEW NORTH PARASCREW						
Auger Position	Ft					0 – 240
Walled in	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Oil Level	Level					> 1/2
Oil Temp	Deg F					<180
Oil Leaks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Equipment Bolts Tight	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Auger Interlock	I/B	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Chain Lubricated	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Charge Pump Pressure	Psi					200 – 300
Auger Pressure	Psi					<2500
Travel Pressure	Psi					<2200
Suction Pressure	PSI					< -10 HG
Auger Case Flow	GPM					<5 Gpm
Auger Case Pressure	Psi					<15 Psi
Travel Case Flow	GPM					< 2 Gpm
Travel Case Pressure	Psi					< 15 Psi
Tunnel trolley OK	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Staffa Coupling Alignment	OK					OK
NEW SOUTH PARASCREW						
Auger Position	Ft					0 – 240
Walled in	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Oil Level	Level					> ½
Oil Temp	Deg F					<180
Oil Leaks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Equipment Bolts Tight	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Auger Interlock	I/B	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Chain Lubricated	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Charge Pump Pressure	Psi					200 – 300
Auger Pressure	Psi					<2500
Travel Pressure	Psi					<2200
Suction Pressure	Psi					< -10 HG
Auger Case Flow	GPM					<5 Gpm
Auger Case Pressure	Psi					<5 Gpm
Travel Case Flow	GPM					< 2 GPM
Travel Case Pressure	Psi					< 15 Psi
Tunnel trolley OK	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes
Staffa Coupling Alignment	OK					OK
CONVEYORS						
Inspect Conveyor 4A	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat
Inspect Conveyor 4B	Sat / Unsat	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat
Inspect Conveyor 5A	Sat / Unsat	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat
Inspect Conveyor 5B	Sat / Unsat	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat
Inspect Conveyor 6A	Sat / Unsat	sat /unsat	sat /unsat	sat /unsat	sat /unsat	sat
NOTE: All Conveyors should be inspected for rollers, skirting, tracking, bearings, and associated problems						

DESCRIPTION	UNITS	DAYS	DAYS	NIGHTS	NIGHTS	LIMITS
C-BLDG	Add sample to the bulk barrel					
Wood Sample Taken	YES	Y / N		Y / N		Y / N
FLYASH SYSTEM						
Flyash silo level	Ft.					<10feet
Flyash conditioner	Sat/Unsat					Sat
# trucks flyash unloaded						
Cleaned pugmill	Y/N					Y
BOTTOM ASH						
Sifting ash hoppers and chutes	Sat/Unsat					Sat
Quench tank water level	Sat/Unsat					Sat
Quench tank chain	Sat/Unsat					Sat
Quench tank drag bars	Sat/Unsat					Sat
QUENCH TANK HYDRAULICS						
Reservoir Level	Complete					Sat
Reservoir temperature	Complete					Sat
Pump discharge pressure	Complete					Sat
Filter differential pressure	Complete					Sat
Chain drive speed						
Clean flyash room						
Grates						
Grease grates	Sat/Unsat					Sat
Inspect grates	Sat/Unsat					Sat
BLOW SIDEWALLS ONTO GRATES (2X/ SHIFT)	Y/N					Y
Check drive oil level	Sat/Unsat					Sat
Inspect drive coupling	Sat/Unsat					Sat
Drive guards installed	Sat/Unsat					Sat
A side drive speed	Rph					2.0 – 5.0
B side drive speed	Rph					2.0 – 5.0
Clean observation doors	Complete					Sat
Clean fire eye	Complete					Sat
Precipitator Platcos	Sat/Unsat					Sat
2A Flyash drag conveyor	Sat/Unsat					Sat
2B Flyash drag conveyor	Sat/Unsat					Sat
#4 Flyash drag conveyor	Sat/Unsat					Sat
Cinder collection conveyor	Sat/Unsat					Sat
Cinder transfer conveyor	Sat/Unsat					Sun
NOTE: When blowing back sidewalls, follow SOP 78 for opening boiler doors, wear all required ppe, ensure safety pin in air lance being used and blow walls onto center of grates twice per shift.						

ENVIRONMENTAL						
Lime Feeder	Sat/Unsat					Sat
Lime Feeder speed	0 – 1000					Sat
Eductor condition	Sat/Unsat					Sat
Carbon feeder	Sat/Unsat					Sat
Carbon feeder speed	0 – 1000					Sat
Eductor condition	Sat/Unsat					Sun
Carbon flow rate	Lbs/hr					>50lbs/hr
Carbon sample weight	lbs					>1.67lbs
Carbon feeder speed	hz					

DESCRIPTION	UNITS	DAYS	DAYS	NIGHTS	NIGHTS	LIMITS
SURGEBIN						
Reservoir level 2C/2D	OK					1/2 - 2/3
Reservoir temp 2C/2D	Deg F					20 – 35
Charge pump press 2C	Psig					200 – 250
Main pump press 2C	Psig					400 - 2500
Case drain flow 2C	Gpm					< 8
Charge pump press 2D	Psig					200 – 250
Main pump press 2D	Psig					400 – 2500
Case drain flow 2D	Gpm					< 8
Reservoir level 2E/2F	OK					1/3 - 2/3
Reservoir temp 2E/2F	Deg F					20 – 35
Charge pump press 2E	Psig					200 – 250
Main pump press 2E	Psig					400 – 2500
Case drain flow 2E	Gpm					< 8
Charge pump press 2F	Psig					200 – 250
Main pump press 2F	Psig					400 - 2500
Case drain flow 2F	Gpm					< 8
Filter indicators	OK					Not Red
Gearbox oil level	OK					Normal
Inspect power rollers	OK					Sat

NUMBER 2 BOILER LOG

Description	Units		1200			0000		Limits
Rear Lower OFA Pressure	in. W.C.		/			/		
Rear Intermediate OFA Pressure	in. W.C.		/			/		
Rear Upper OFA Pressure	in. W.C.							
Rotary Air Pressure	in. W.C.		/			/		
Carrier Air Pressure	in. W.C.		/			/		
Front East Intermediate OFA Pressure	in. W.C.							
Front West Intermediate OFA Pressure	in. W.C.							
Front Upper OFA Pressure	in. W.C.		/			/		

NUMBER 2 BOILER PRECIPITATOR LOG - DAY SHIFT

	2A1	2A2	2B1	2B2	2C1	2C2	2D1	2D2
Primary Amps								
Primary Voltage								
Field Load (mA)								
A Field Load (KV1)								
B Field Load (KV2)								
INSPECT RAPPERS (FILL OILERS)								

NUMBER 2 BOILER PRECIPITATOR LOG - NIGHT SHIFT

	2A1	2A2	2B1	2B2	2C1	2C2	2D1	2D2
Primary Amps								
Primary Voltage								
Field Load (mA)								
A Field Load (KV1)								
B Field Load (KV2)								

WORK ORDERS SUBMITTED:

WORK ORDERS COMPLETED:

CARBON SAMPLE TEST DONE_____INT. (50 LBS/HR) RESULT_____LBS/HR

CARBON SACKS	
LIME PALLETS	

DAY OPERATOR SIGNATURE_____

NIGHT OPERATOR SIGNATURE_____

#2 FLYASH SYSTEM OPERATING PROCEDURE

OPERATOR_____ DATE_____

1. Before startup of the fly ash system, complete the following items below:

Inspection list	DAY SHIFT	NIGHT SHIFT
Inspection of the rotary shoe, remove cover and ensure shoe is snug against rotary feeder. If not, scrape out to get proper clearance.		
Clean mixer paddles, sidewalls and discharge chute. Scrape down thoroughly.		
Ensure spray nozzles are clear and flow water freely		
Grease all mixer bearings and rotary feeder seals		
Oil the rotary drive chain		
Ensure all guards are in place		
Ensure BFI truck is in place		

2. Start up the flyash system, by verifying the mixer, rotary feeder, slidegate, and fluffing air are in automatic and then depress the start button on the control panel.
3. Ensure adequate water supply by opening the water control valve to the desired setting to eliminate dusting but not so much to create mud.
4. Align no more than 4 fluffing air nozzles at a time, too many open nozzles will result in poor air pressure into the silo and little effect on moving ash. Best practices have shown that rotating 1-2 nozzles at a time will move more ash.
5. Sometimes it is necessary to manually bypass the fluffing air solenoid due to poor ash flow, if necessary, do not open the bypass valve for more than 5 seconds as damage to the fluffing stones may occur.
6. keep the flyash silo level below 10 feet
7. After completion of flyash removal, shut the system down by depressing the stop button, the system will go thru a sequence with the mixer to be the last component secured. Once the mixer shuts down, shut the water control valve, and clean the mixer paddles, sidewalls, and discharge chute by scraping to prevent the ash from hardening up.

ATTACHMENT 6-11

LIQUID WASTE OPERATOR'S LOG

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COVANTA ENERGY NIAGARA
OPERATIONS LOGS

10/06/13	Rev. 1

LIQUID WASTE OPERATOR LOG

Date: ____/_____/_____

DESCRIPTION	PARAMETER	DAY SHIFT ROUND 1		DAY SHIFT ROUND 2		NIGHT SHIFT ROUND 1		NIGHT SHIFT ROUND 2	
#3 BOILER MOYNO PUMP	PUMP PRESSURE								
#3 BOILER MOYNO PUMP RECIR. VALVE	OPEN / CLOSED								
#4 BOILER MOYNO PUMP	PUMP PRESSURE								
#4 BOILER MOYNO PUMP RECIR. VALVE	OPEN / CLOSED								
TUCK OFF LOADING PUMP	SAT/UNSAT								
SPARE MOYNO PUMP	PUMP PRESSURE								
TRUCK STRAINER	SAT/UNSAT								
#3 BOILER LIQUID LANCES	INSPECTED								
#4 BOILER LIQUID LANCES	INSPECTED								
#3 BOILER FLOW METER	GPM								
#4 BOILER FLOW METER	GPM								
ALL NOZZEL CHICAGO FITTINGS HAVE SAFETY PINS OR CAPS IN PLACE	YES / NO								
FRAC TANK LEVELS	BROWN / CRYSTAL CLEAN	BROWN	CRYSTAL	BROWN	CRYSTAL	BROWN	CRYSTAL	BROWN	CRYSTAL
LIQUID STORAGE TANK LEVEL	DAY SHIFT @ BEGINING	TANK #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6		
	DAY SHIFT @ END								
	NIGHT SHIFT @ END								

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COVANTA ENERGY NIAGARA
OPERATIONS LOGS

10/06/13	Rev. 1

LIQUID WASTE OPERATOR LOG

		TANK #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6	
STORAGE TANK STEAM SPARGES		SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	
TANK MIXERS				SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	SAT/UNSAT	
LIQUID WATES STORAGE AREA DIKE SPILL FREE								
CONDITION	SAT / UNSAT							
STORAGE TANK LEVEL PROBES	SAT / UNSAT	TANK #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6	

Clean up area during your watch, Please list below.

DAY OPERATOR:_____ NIGHT OPERATOR:_____

ATTACHMENT 6-12

CHEMICAL AND FUEL STORAGE TANK INSPECTIONS

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Doc. TI -1	Revision No. 2
Revision Date: 3/19/12	

COVANTA NIAGARA

MONTHLY/ANNUAL INSPECTION: ACID STORAGE TANK

Inspection Date:

CHEMICAL BULK STORAGE NO. 9-000239

TANK 001B

LEVEL OF ACID IN TANK _____

INSPECTION ITEM	WHAT TO INSPECT WHAT TO LOOK FOR	WHAT WAS FOUND BE SPECIFIC	WHAT CORRECTIVE ACTIONS WERE TAKEN/COMMENTS/W.O.'S
DIKE WALL	EROSION, CRACKS, EVIDENCE OF RELEASES, EXCESSIVE SETTLEMENT, STRUCTURAL WEAKNESS, ADEQUACY OF COATINGS OR LINERS (IF APPLICABLE)		
DIKE BASE	EROSION, CRACKS, EVIDENCE OF RELEASES, EXCESSIVE SETTLEMENT, STRUCTURAL WEAKNESS, ADEQUACY OF COATINGS OR LINERS (IF APPLICABLE)		
LIQUID IN DIKE	EVIDENCE OF ANY RELEASE, WHAT IS LIQUID, HOW MUCH LIQUID IS IN DIKE, WHAT IS THE pH OF LIQUID?		
TANK STRUCTURE AND TANK CRADLES	CRACKS, AREAS OF WEAR, CORROSION, POOR MAINTENANCE AND OPERATING PRACTICES, SWELLING, EXCESSIVE SETTLEMENT OF STRUCTURE, SEPARATION OR SWELLING OF TANK INSULATION, ADEQUACY OF EXTERIOR COATINGS, EXTERIOR WELDS, ETC.		
TANK NOZZLES	CORROSION, RUST, EVIDENCE OF ANY RELEASES, CRACKS, BLIND FLANGE OR CAPS MISSING, EXTERIOR WELDS, ETC.		

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Doc. TI -1	Revision No. 2
Revision Date: 3/19/12	

COVANTA NIAGARA

MONTHLY/ANNUAL INSPECTION: ACID STORAGE TANK

Inspection Date:

PLATFORMS AND LADDERS	**CRACKS, CORROSION, EXTERIOR WELDS, ETC.**		
VALVES	**CRACKS, CORROSION, EXTERIOR WELDS, POOR MAINTENANCE AND OPERATING PRACTICES, ETC.**		
PIPES INCLUDE: FILL, OVERFLOW, AND COMPLETE PROCESS PIPE TO PUMPS IN SKID ROOM	**CRACKS, AREA OF WEAR, CORROSION, POOR MAINTENANCE AND OPERATING PRACTICES, EXTERIOR WELDS, ADEQUACY OF EXTERIOR COATING, ADEQUACY AND STRUCTURAL INTEGRITY OF SUPPORTS, EVIDENCE OF LEAKS, ETC.**		
INSTRUMENTATION, IF APPLICABLE	**WHAT IS DATE OF MOST RECENT INSTRUMENT CALIBRATION? ARE INSTRUMENT LEADS INTACT? ARE INSTRUMENTS CORRODED, CRACKED, COVERS MISSING?**		
LEVEL INDICATOR	**IS LEVEL INDICATOR OPERABLE? EVIDENCE OF LEAKS, ETC.**		
VENT/OVERFLOW LINE	**IS VALVE CORRODED, CRACKED, BLOCKED, ETC?**		
LEVEL ALARMS, IF APPLICABLE	**ARE ALARMS OPERABLE?**		
IS SODIUM BICARBONATE AVAILABLE IN SPILL CONTROL CABINET	**IS THERE ADEQUATE SPILL CONTROL EQUIPEMENT? CHECK INVENTORY SHEET**		

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Doc. TI -1	Revision No. 2
Revision Date: 3/19/12	

COVANTA NIAGARA

MONTHLY/ANNUAL INSPECTION: ACID STORAGE TANK

Inspection Date:

TANK 001B

INSPECTION ITEMS	LOCATION	WHAT TO LOOK FOR	WHAT WAS FOUND (BE SPECIFIC) TAG ITEM	WHAT CORRECTIVE ACTION TAKEN COMMENTS/W.O.
FLANGE GUARDS, FLANGES, SCREWED CONNECTIONS, BOLTS, NUTS, & GASKETS	INCLUDE: FILL, OVERFLOW, COMPLETE PROCESS PIPING TO PUMPS IN SKID ROOM	MISSING OR WORN FLANGE GUARDS AND/OR LEAKS ON THE FLANGES OR THREADS. RUSTED BOLTS/NUTS, ETC.		
FLANGE GUARDS, FLANGES SCREWED CONNECTIONS, BOLTS, NUTS, AND GASKETS	INCLUDES PIPING FROM THE SKID ROOM TO ALL THREE TRAINS, ALL THREE MIXBEDS INCLUDING SAMPLE PIPING	MISSING OR WORN FLANGES GUARDS AND/OR LEAKS ON THE FLANGES OR THREADS. RUSTED BOLTS/NUTS, ETC.		

NOTE: WHEN CHECKING ALL FLANGE AND SCREWED PIPING, BOLTS, AND NUTS - FACE SHIELD AND CHEMICAL GLOVES ARE TO BE WORN.

FOR ITEMS ON THIS NOTE: IF THE INSPECTOR FINDS A PROBLEM, A CORRECTIVE ACTION MUST BE INDICATED

I CERTIFY THAT I INSPECTED THIS TANK AND CONTAINMENT FACILITY TO THE BEST OF MY ABILITY INSPECTION SHEET.

_____

SIGNATURE OF INSPECTOR DATE

RETURN ORIGINAL TO PLANT ENVIRONMENTAL ENGINEER

COVANTA NIAGARA, L.P.
100 ENERGY BLVD. AT 56 ST, NIAGARA FALLS, NY 14304
ADDRESS OF INSPECTOR

ATTACHMENT 6-13

RTIF LEAD OPERATOR'S INSPECTION LOG

(TO BE PROVIDED)

SECTION 7

COVANTA NIAGARA, L.P.

NIAGARA RESOURCE RECOVERY FACILITY

MAINTENANCE PLAN

SECTION 7

COVANTA NIAGARA

SECTION 7

MAINTENANCE PLAN

LIST OF ATTACHMENT

7-1 EMERGENCY REPAIR VENDORS/CONTRACTORS

SECTION 7

COVANTA NIAGARA

MAINTENANCE PLAN

7.1 INTRODUCTION

There are two main types of measures required to achieve the high availability of the Covanta Niagara facility and the Covanta Niagara RTIF. These main areas include:

1. General design criteria require "that the entire Facility will not be shut down due to the failure of a single component or discrete piece of equipment".

2. Maintenance procedures

The Covanta Niagara general design criteria enables the overall facility to continue operating in the event of a failure of a single component or discrete piece of equipment. This is an overall design philosophy that is achieved by implementing installed spare equipment, equipment redundancy, auxiliary system spare capacity, surge capacity at key points within various systems, and if necessary mobile or temporary equipment to replicate the function of systems undergoing repair.

Covanta Niagara's maintenance plan outlines the procedures that are used to ensure facility reliability. The activities of the maintenance plan include three general categories: preventative maintenance, scheduled repairs/major overhauls, and unscheduled repairs. In addition, elements of the maintenance plan include a computerized work order system, stocked spares, special arrangements with key suppliers for expedited spares delivery, on-site maintenance equipment, and offsite maintenance equipment. Stocked spare equipment includes normal consumable materials such as grate bars, wear plates, bearings, motors, actuators, cranes, instruments, and dedicated spares for each major system, and some long lead time items. Special expedited service is available from suppliers of key equipment, which includes boiler tubes, distributed control system components, electrical motor starters, cranes, and other critical components.

In order to accomplish the activities required in the plan, Covanta Niagara has a maintenance department consisting of two groups: instrument/electrical and mechanical. Contract personnel are also used if specialized skills are required or if the required work load exceeds the maintenance department's ability to adequately staff the work.

7.2 COVANTA NIAGARA MAINTENANCE DEPARTMENT

The maintenance manager, who reports to the plant manager, is responsible for the overall function of the maintenance department. Reporting to the maintenance manager are the instrument/electrical supervisor and the mechanical supervisors, and the maintenance planner.

The Instrument/Electrical group consists of a supervisor and Tech 1 through Tech 10 electricians and instrument personnel. The primary function of this group is to maintain the plant's electrical equipment, electrical distribution system, and instrument and control equipment. The group, with supplemental manpower from outside contractors, as necessary, is also responsible for the installation of new equipment.

The mechanical group consists of supervisors and Tech 1 through Tech 3 mechanics. The primary function of this group is to maintain all the mechanical equipment. The group also does installation of new equipment and as with the instrument/electrical group obtains supplemental manpower from outside contractors during periods of higher work loads.

The minimum skills required to obtain a position in the maintenance department are determined by the maintenance manager and the maintenance supervisors. The training programs for skill improvement and advancement within the maintenance group are outlined in Covanta Niagara's personnel Training Plan. Depending on the skill level of personnel (Tech 10, being the most skilled, through Tech 1), Covanta Niagara would expect maintenance personnel, working under the guidance of a supervisor, to be able to read maintenance manuals and prints and to take those manuals, prints, etc. into the field and do preventative maintenance, calibrations, repair work, etc. on equipment.

7.3 Covanta Niagara RTIF Maintenance Department

The RTIF Maintenance Department, consisting of Maintenance Mechanics and Container Mechanics, will be directed by the RTIF Superintendent and will be responsible for all

onsite maintenance, repair and preservation of rolling equipment, railcars, containers, track, buildings, other structures and equipment. The Maintenance Mechanics are responsible for repairing and refurbishing major parts items. The Maintenance Mechanic in conjunction with the RTIF Superintendent, ensure supplies and materials are ordered for major repairs and ongoing period maintenance, thus having all parts and material ready for use. Container Mechanics will be responsible for preventive maintenance and repairs to the RTIF containers. All RTIF vehicle and equipment maintenance will be conducted in the RTIF building.

7.4 WORK ORDER SYSTEM

A computerized work order system is used by both the Covanta Niagara Maintenance and RTIF Maintenance Departments for all repair work and equipment replacement. Work orders are given three types of classifications, as follows:

"3" - Scheduled as operations and normal maintenance work allows. This type of work would also include that to be done during the scheduled outages. In addition, this type of work can also be carried on a back log.

"2" - Work to be done within 24 hours - is not critical to operation or safety.

"1" - Emergency work must be done immediately because critical operating equipment or safety issues are involved.

Any Covanta Niagara employee can submit a work order when it is determined that equipment repair or replacement is required. The technician or shift supervisor enters the work order into the computer system where it is initially stored on the "work request" list.

Each morning (Monday thru Friday) operations and maintenance supervision attend a "turnover" meeting at shift change. At that meeting the maintenance work schedule is reviewed for the coming day. Operations supervision reviews the work orders submitted during the night shift and changes the schedule if an "1" (emergency) work order has come in. After the meeting, the maintenance supervisor receives all the new work orders and then issues "1" work orders to maintenance personnel to do the required work. It may be necessary to cancel a job(s) because of the need to get new "1" work orders completed. The outstanding work orders are then in two categories - either in "work

request list" if no action has been taken, or "backlog list" if parts are on order, or work scheduled and canceled because of higher priority jobs. Those lists are reviewed periodically to assure that the work gets completed.

Each afternoon operations and maintenance supervision attend a "scheduling" meeting to review the progress of the ongoing work and to review the work orders on the "backlog" and "work request" lists. Operations supervision then prioritizes the work for maintenance to do the following day. The maintenance planner will then take the operation's prioritized list and schedule the jobs for the following day. The maintenance planner is responsible for maintaining the computerized work order system to assure that completed work orders are so noted, that the backlog list is updated, and that the "work request" list is periodically reviewed for scheduling.

7.5 SCHEDULED EQUIPMENT OUTAGES

During each year Covanta Niagara schedules outages for the boilers, pollution control equipment, ash handling and processing equipment, etc. in order to do preventative maintenance (PM), non-critical repairs, and equipment replacement. Normally each year an annual outage will be taken on each boiler, for approximately 5–15 days, depending on work scopes. The outages on the two boilers are staggered. In addition to the annual outages approximately every 3 months each boiler is taken down for a 2 – 4 day outage in order to clean the boiler and do PM work.

The outages described above are primarily used to work on equipment that otherwise operates continuously. Each outage is planned in advance and specific work done. Both from experience and equipment manufacturers' recommendations, it is known what routine work is required during an outage in order to eliminate/minimize unscheduled downtime. Also, inspections, non-destructive testing, etc. of equipment components can be done during the scheduled outages in order to detect conditions which may require additional work. The additional work would either be done immediately or during a future outage.

7.6 SPARE PARTS

Covanta Niagara has an on-site warehouse for the storage of spare parts. Covanta Niagara RTIF will store spare parts at the RTIF building.

Spare parts are managed on a computerized inventory maintenance system. All the spare parts are listed in the computer and identified by keywords such as:

Identification number
Manufacturer
Manufacturer's part number
Equipment that the part is used on
Minimum/maximum quantity
Specific warehouse location

When the quantity of a spare part drops below the minimum required to be in storage, the computer automatically generates a requisition to purchase additional items. The materials supervisor is then responsible for ensuring that the order is placed.

When a plant technician needs a part, he uses the plant computer system to access the spare parts inventory list. Keywords such as those listed above are used to find the part. The technician then notes the spare part identification number and the warehouse location. The technician then goes to the warehouse, locates the spare part and then completes a Bin card that is with each spare part. The Bin Card is completed with the technician's name, date, quantity taken and work order number. The Bin Card is then put in a holding box for subsequent reconciliation by warehouse personnel.

Warehouse personnel will enter information from the completed Bin Cards into the computer which will then track the quantity in stock and the need to order additional items.

The determination of which spare parts are kept on hand is based on several factors:

- How critical is the equipment to operation?
- Is there installed spare capacity available?
- Delivery time for parts - i.e. off-the-shelf from local supplier, long lead time, etc.
- Type of failure likely:
  - Gradually wear out - allows time to order spares

- fail suddenly

- Likelihood of failure

7.7 PREVENTATIVE MAINTENANCE

Covanta Niagara's and Covanta Niagara's RTIF preventative maintenance (PM) program includes inspections and maintenance on equipment critical to the operations of the facility, calibrations of instrument/control equipment, and calibration and maintenance of monitoring equipment required by regulations and permits. In most cases, equipment manufacturers will have a suggested preventative maintenance schedule. The PM system is computerized and works as follows:

- Equipment identification, tasks required, and frequency (starting with input date) are put into the computer.

- Every two weeks, the maintenance planner prints out the PM list, as well as a work order to go with the PMs for that week.

- The maintenance planner issues the work orders to the appropriate mechanical or instrument/electrical supervisor.

- The work order "backlog" list which has the open PM jobs is reviewed by the maintenance planner on a periodic basis.

- When a work order is completed, it is marked **completed** and returned to the maintenance planner who inputs a completed status into the computer for that work order.

- Any PM that is not completed will remain on the work order backlog list until completed.

7.7.1 INSTRUMENTATION LIST

All of the DBA plant instrumentation has been entered into a computer program "Shop Access" that can be accessed through the Covanta Niagara computer network.

With each instrument entered into the computer system, all pertinent information related to the instrument is included, such as, tag number, equipment description, location, P & ID reference, termination locations (field, DCS, PLC, etc.), calibration data, calibration schedule, etc.

After an instrument calibration is completed, a hard copy computer printout with calibration data is placed into the appropriate equipment file.

In addition to the computer system, a hard copy of the instrument manufacturers data sheet is kept in an instrument book.

7.8 EMERGENCY CONTRACTORS

Covanta Niagara uses many equipment vendors and service contractors. Many of these vendors/contractors are on 24 hour call and can respond to emergency situations. A list of the emergency repair vendors/contractors with purchase order agreements is shown in Attachment 7-1.

7.9 DRAWING INVENTORY

The plant engineering group is responsible for keeping a complete inventory of original design and as-built drawings that pertain to the Covanta Niagara facility. The drawings are kept in the plant's administration building in the drafting room. Engineering drawings are on computer disk. To ensure secure backup of the drawings, periodically the drawings on the computer disks are transferred onto a CD ROM. When an engineering drawing needs to be modified, the appropriate disk is put into the computer, the drawing pulled up on the screen, the changes made, the drawing is given a revision number, and drawing saved. A drawing index is kept both in the computer and as a hard copy in a notebook. Prints of engineering drawings may also be kept in a flat file.

Vendor/subcontractor prints are kept in a flat file. There is also a vendor/subcontractor drawing index.

7.10 ANNUAL FACILITY INSPECTION

As required in 6 NYCRR Part 360-3(h) (6), Covanta Niagara completes an annual inspection of the facility by an engineer licensed in New York State. The inspection, completed once each calendar year, is to ensure that the facility is being operated in accordance with all the plans developed to comply with the Part 360 regulations. In addition, the inspection ensures that the facility is in good operating condition to provide worker safety, environmental compliance, and reliability.

7.11 EFFECTIVENESS OF MAINTENANCE PROGRAM

The effective maintenance program at Covanta Niagara has resulted in a very reliable facility. Major outages continue to be scheduled each year in order to replace/ repair worn equipment.

7.12 MAJOR EQUIPMENT MAINTENANCE MANUALS

A copy of the major equipment manuals will be kept in the drafting room in the plant's administration building and a copy of the RTIF equipment manuals will be kept in the RTIF building.

7.13 MAJOR REVISIONS TO THE MAINTENANCE PLAN

May 2006

Name change to Covanta from American Ref-Fuel

March 2014

Removed maintenance attachments. Actual equipment information, operating manuals, work schedules, and preventative maintenance programs are available in the maintenance supervisor, chief engineer's, and plant engineer's office.

May 2014

Add Section 7.3 – Covanta Niagara RTIF Maintenance Department. Revise the section numbers accordingly. Update 7.4 – Work Order System. Update 7.6 – Spare Parts.

Update 7.7 – Preventative Maintenance. Additions to Attachment 7-1 – Emergency Repair Vendors/Contractors. Update 7.12 – Major Equipment Maintenance Manuals.

July 2014

Minor QA/QC edits. Update to Section 7.3.

ATTACHMENT 7-1

EMERGENCY REPAIR VENDORS/CONTRACTORS

VENDOR/CONTRACTOR	ITEM/SERVICE
Volland Electric	Repair/Balance Rotating Equipment
Andersen Electric	Electrical Supplies
Belt Maintenance	Belt Supply and Repair
DWC Mechanical .	HVAC
Airgas East	Welding Supplies
OTIS	Elevator Repair
Davis-Ulmer Sprinkler	Fire System Repair
Gaines Electrical Contractors	Electrical Contractor
Grainger, W. W.	Mill Supplies
Morris Material	Crane Repair
National Vac .	Vacuum Trucks and Water Wash
IDS Div/Lake Supply	Pipe, Valves & Fittings
Motion Industrial	Power Transmission
NERM / Covanta Field Services	Boiler Repair
Zampell Refractories	Refractory Repair
Upstate Steel	Steel Fabrication & Supply
Stritt & Priebe	Valve Supply and Repair
Tonawanda Machine	Fabrication and machining
R. B. U'Ren Equipment	Equipment Rentals
Weber Hydraulic	Hydraulics
Brights Systems / National Maintenance	Mechanical Repairs
North American Industrial Services	Boiler Blasting
Milton Caterpillar	Mobile Service Repairs

LiftTech Equipment	Forktruck, and Reach Stacker Maintenance
Valley Tire	Tire Service
CSXT	Rail Maintenance and Repairs

SECTION 8

COVANTA NIAGARA, L.P.

NIAGARA RESOURCE RECOVERY FACILITY

START-UP, SHUT-DOWN, AND MALFUNCTION PROCEDURES