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GDF SUEZ

Appendix 12.

Environmental Monitoring Procedures

Reference: HCF Procedure A-30

Environmental Monitoring and Measuring Procedure

1.0 Purpose

This procedure describes the process for the scheduled monitoring and measurement of key characteristics of the organization's environmental management system activities.

2.0 Scope

This procedure addresses collection of environmental data associated with operations and activities that have the potential to have a significant environmental impact on Hopewell Cogeneration Facility.

3.0 Reference Documents

Document Name
ANSI/ISO14001-2004 Section 4.5.1

4.0 DEFINITIONS

Environmental Key Characteristics - an element of an operation or activity that includes a measurement or an inspection process the results of which supports evaluation of environmental performance of objectives and targets.

Monitoring - a systematic process of watching, checking, observing, inspecting, keeping track of, regulating or otherwise controlling key parameters and characteristics of a department's management activities to determine conformance with a specific standard or other performance requirement, or to measure progress toward its environmental objectives and targets.

Measurement - a systematic method for estimating, testing, or otherwise evaluating key parameters and characteristics of a department's management activities to determine conformance with a specific standard, other performance requirement.

5.0 Procedure

5.1 Quarterly Operating Report (QOR)

A quarterly report shall be established by Environmental Site Representative/Responsible Person to submit monitoring and measuring information to support performance of the EMS. This report can be in the form of the minutes of the quarterly environmental meeting. The report is to be structured as a minimum to:

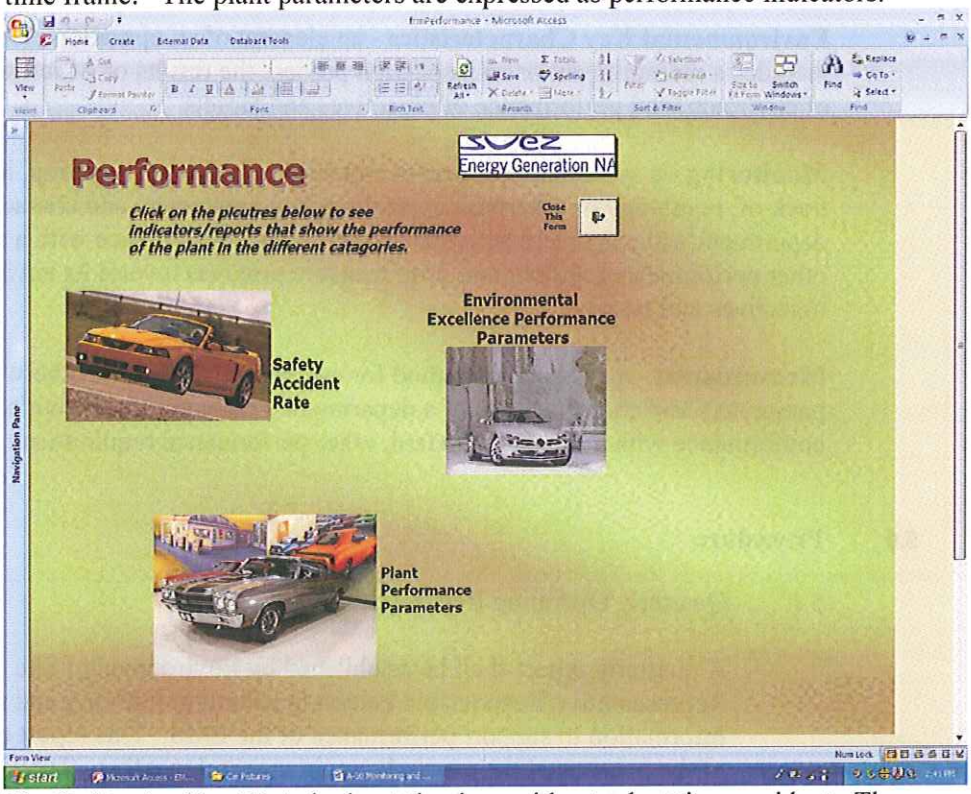
- Provide status of environmental management programs designed to fulfill environmental objectives and targets,
- Provide status of performance indicators as related to targeted timeframes,
- Provide out of compliance status of environmental operating permits issued by environmental regulatory agencies.
- Provide updates on Environmental and Safety Audits.

5.2 Performance Tracking

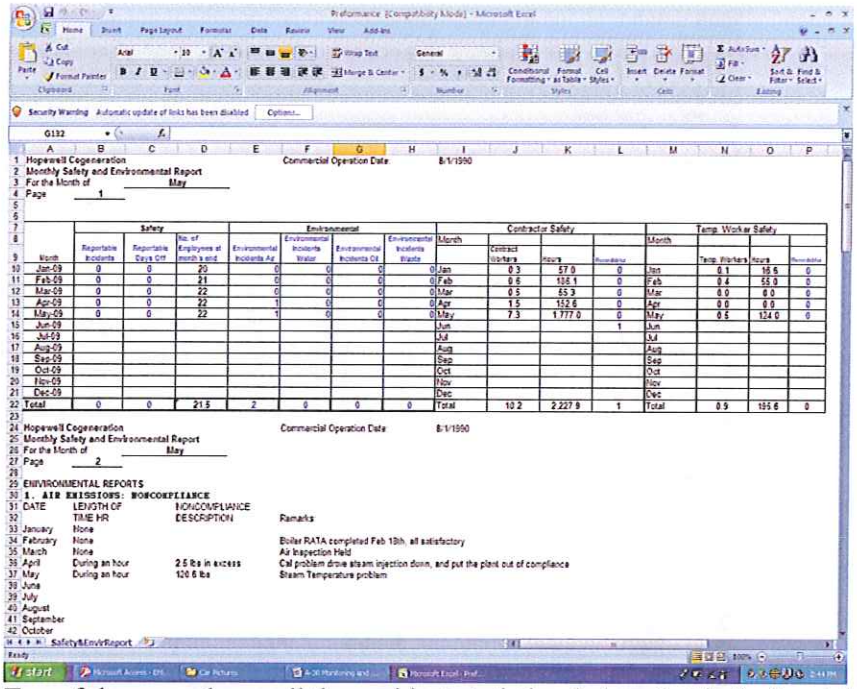
Environmental data collected to reflect environmental performance is to be maintained in such a manner to allow the evaluation of progress toward realizing environmental objectives and targets.

The Non-Conformance Register will become part or all of the quarterly report. The Non-Conformance Register can be modified to take into account additional items to track.

How is this information found?
Open the EMS Database and go to Targets and Objective. From that page there is a button for progress of Targets and Objects. These are also posted in the mail room on the Environmental bulletin board. These updates will give an idea of time frame. The plant parameters are expressed as performance indicators:



The Safety Accident Rate looks at the days without a lost time accident. The environmental excellence show the parameters that are reported to the state. The plant performance parameters shows the month to month tracking:



Hopewell Cogeneration — Commercial Operation Date: 8/1/1990
Monthly Safety and Environmental Report
For the Month of May
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Month	Safety: Reportable Incidents	Reportable Days Off	No. of Employees at month's end	Environmental: Environmental Incidents Air	Environmental Incidents Water	Environmental Incidents Oil	Environmental Incidents Waste	Contractor Safety: Month	Contract Workers	Hours	Fatalities	Temp. Worker Safety: Month	Temp. Workers	Hours	Fatalities
Jan-09	0	0	20	0	0	0	0	Jan	0.3	57.0	0	Jan	0.1	16.6	0
Feb-09	0	0	21	0	0	0	0	Feb	0.6	136.1	0	Feb	0.4	55.0	0
Mar-09	0	0	22	0	0	0	0	Mar	0.5	55.3	0	Mar	0.0	0.0	0
Apr-09	0	0	22	1	0	0	0	Apr	1.5	152.6	0	Apr	0.0	0.0	0
May-09	0	0	22	1	0	0	0	May	7.3	1,777.0	0	May	0.5	124.0	0
Jun-09								Jun			1	Jun			
Jul-09								Jul				Jul			
Aug-09								Aug				Aug			
Sep-09								Sep				Sep			
Oct-09								Oct				Oct			
Nov-09								Nov				Nov			
Dec-09								Dec				Dec			
Total	0	0	21.5	2	0	0	0	Total	10.2	2,227.9	1	Total	0.9	195.6	0

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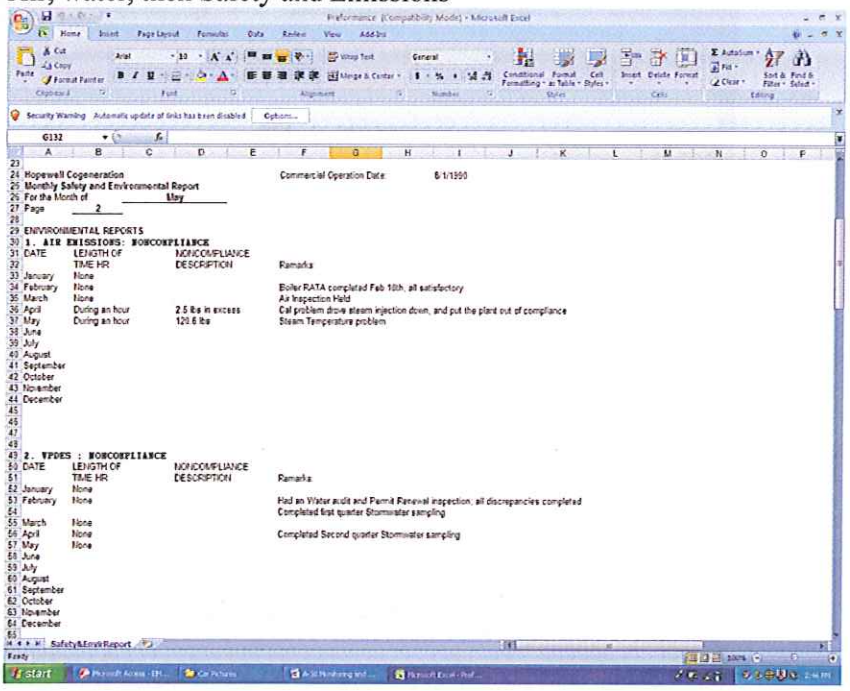
ENVIRONMENTAL REPORTS
1. AIR EMISSIONS: NONCOMPLIANCE

DATE	LENGTH OF TIME HR	NONCOMPLIANCE DESCRIPTION	Remarks
January	None		
February	None		Boiler RATA completed Feb 18th, all satisfactory
March	None		Air Inspection Held
April	During an hour	2.5 lbs in excess	Cal problem drove steam injection down, and put the plant out of compliance
May	During an hour	120.6 lbs	Steam Temperature problem
June			
July			
August			
September			
October			

Top of the page shows all the accident statistics, below that is the breakdown of Air, water, then Safety and Emissions



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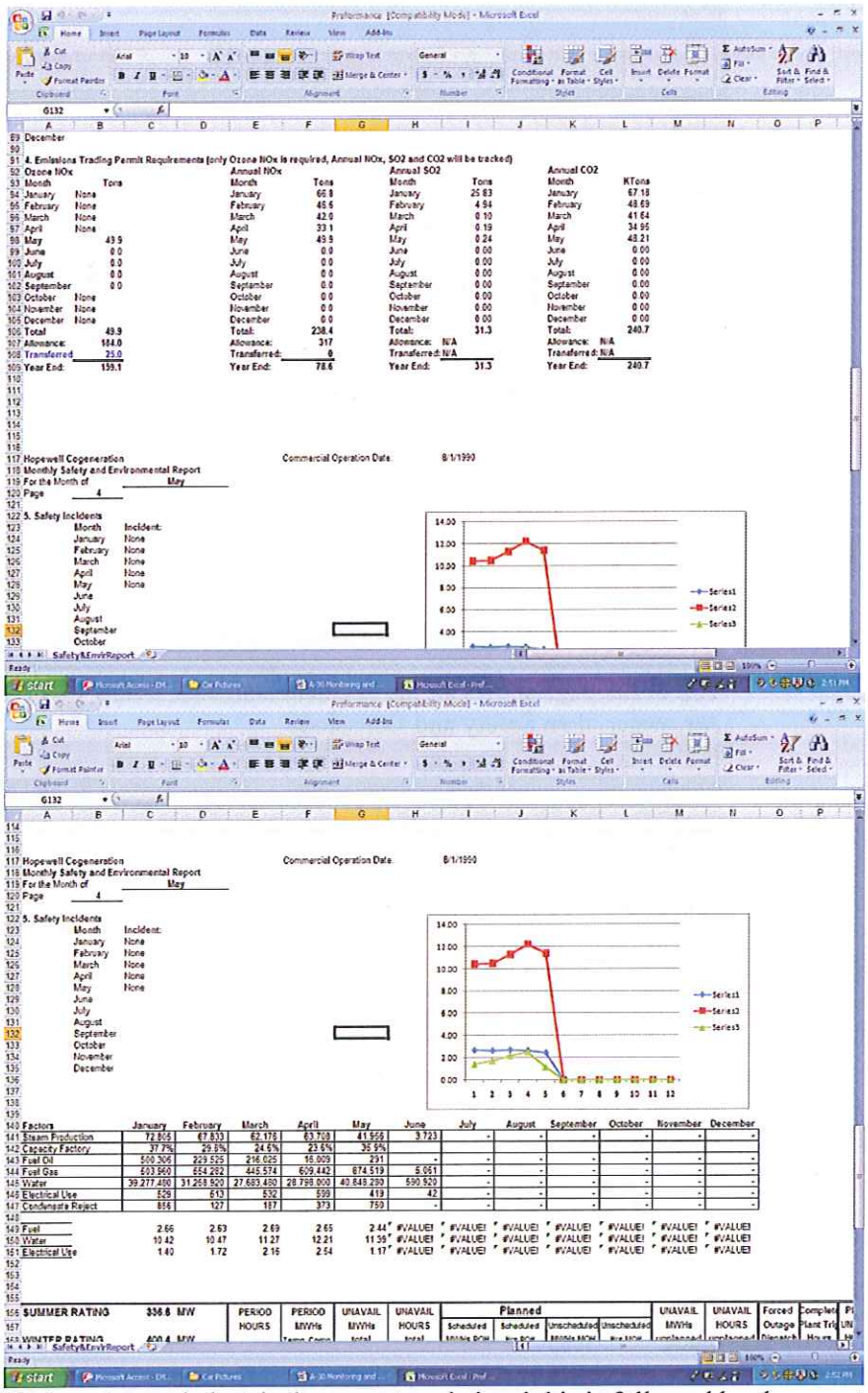
ENVIRONMENTAL REPORTS
1. AIR EMISSIONS: NONCOMPLIANCE

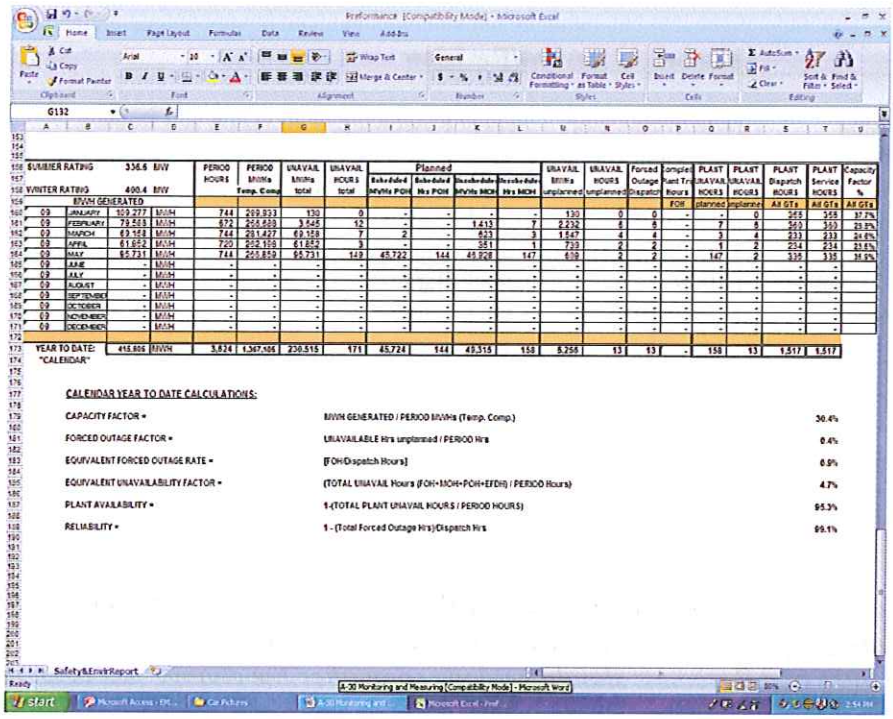
DATE	LENGTH OF TIME HR	NONCOMPLIANCE DESCRIPTION	Remarks
January	None		
February	None		Boiler RATA completed Feb 18th, all satisfactory
March	None		Air Inspection Held
April	During an hour	2.5 lbs in excess	Cal problem drove steam injection down, and put the plant out of compliance
May	During an hour	120.6 lbs	Steam Temperature problem
June			
July			
August			
September			
October			
November			
December			

2. NPDES : NONCOMPLIANCE

DATE	LENGTH OF TIME HR	NONCOMPLIANCE DESCRIPTION	Remarks
January	None		
February	None		Had an Water audit and Permit Renewal inspection, all discrepancies completed Completed first quarter Stormwater sampling
March	None		
April	None		Completed Second quarter Stormwater sampling
May	None		
June			
July			
August			
September			
October			
November			
December			



Fuel, water, and electrical use are trended and this is followed by the year to date of reliability and availability as well as forced outages.



SUMMER RATING		336.6	MW	PERIOD HOURS	PERIOD MWHs Temp. Comp	UNAVAIL MWHs total	UNAVAIL HOURS total	Planned				UNAVAIL MWHs unplanned	UNAVAIL HOURS unplanned	Forced Outage Dispatch	Complex Plant Trip Hours	PLANT UNAVAIL HOURS	PLANT UNAVAIL HOURS	PLANT Dispatch HOURS	PLANT Service HOURS	Capacity Factor %
WINTER RATING		400.4	MW					Scheduled MWHs POH	Scheduled Hrs POH	Unscheduled MWHs MOH	Unscheduled Hrs MOH				FOH	planned	unplanned	All GTs	All GTs	All GTs
MWH GENERATED																				
09	JANUARY	109,277	MWH	744	299,933	130	0	-	-	-	-	130	0	0	-	-	0	355	355	37.7%
09	FEBRUARY	79,568	MWH	672	255,588	3,545	12	-	-	1,413	7	2,232	5	5	-	7	5	360	360	29.9%
09	MARCH	69,158	MWH	744	281,427	69,158	7	2	-	623	3	1,547	4	4	-	3	4	233	233	24.6%
09	APRIL	61,852	MWH	720	252,198	61,852	3	-	-	351	1	739	2	2	-	1	2	234	234	21.6%
09	MAY	95,731	MWH	744	255,859	95,731	149	45,722	144	45,928	147	609	2	2	-	147	2	335	335	36.9%
09	JUNE	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	JULY	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	AUGUST	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	SEPTEMBER	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	OCTOBER	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	NOVEMBER	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	DECEMBER	-	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
YEAR TO DATE: "CALENDAR"		415,806	MWH	3,624	1,367,105	230,515	171	45,724	144	49,315	158	5,256	13	13	-	158	13	1,517	1,517	

CALENDAR YEAR TO DATE CALCULATIONS:

CAPACITY FACTOR =	MWH GENERATED / PERIOD MWHs (Temp. Comp.)	30.4%
FORCED OUTAGE FACTOR =	UNAVAILABLE Hrs unplanned / PERIOD Hrs	0.4%
EQUIVALENT FORCED OUTAGE RATE =	[FOH/Dispatch Hours]	0.9%
EQUIVALENT UNAVAILABILITY FACTOR =	(TOTAL UNAVAIL Hours (FOH+MOH+POH+EFDH) / PERIOD Hours)	4.7%
PLANT AVAILABILITY =	1-(TOTAL PLANT UNAVAIL HOURS / PERIOD HOURS)	95.3%
RELIABILITY =	1 - (Total Forced Outage Hrs)/Dispatch Hrs	99.1%

This will give all the information needed for any quarterly report/update on performance.

6.0 Roles and Responsibilities

6.1 This is the responsibility of the Site Environmental Representative or their designee.

7.0 Distribution:

7.1 In the computer under Z:\Public \EMS \Procedures \ A-30 Monitoring and Measuring.doc

7.2 In EMS Manuals under tab 12

8.0 History of Review/Revision

Revision Number	Date of Revision or Review	Person Reviewing or Revision and Remarks
Review	10/5/06	Chuck Barnes based on ISO Audit
Review	4/2/07	Chuck Barnes
Review	8/15/08	Taylor Dunford
Review/update	6/4/09	Chuck Barnes
Review	8/30/2010	Chuck Barnes

As of 2010 Procedure and Checklist Reviews will be conducted every other year; the even numbered procedures/checklist on the even years and the others on the odd years. Updates and Revisions should be done soon after the change has been made.