EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Field Test Experiments and Validation of CEN/TS 1948-4 Dioxin-like PCBs from stationary sources

– CEN/TC 264/WG 1 “Dioxins and PCBs (Emission)“ –

Annex 6a

Measurement report cooled probe method

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Report-No: 07-01-640276

CEN/TS 1948-4 Validation Test Report

Contracting Body:	DIN Deutsches Institut für Normung e.V. Burggrafenstraße 6, D-10787 Berlin
Plant Identification:	Fernwärme Wien, Abfallbeseitigungsanlage Flötzersteig
Location of Plant:	Flötzersteig 12, A-1160 Wien
Type of Operation:	Municipal Solid Waste Incineration Plant, Lines 1 to 3
Testing Period:	20 - 26/06/2007
Type of Tests performed:	Determination of the mass concentration of dioxin-like PCBs in the common clean gas duct of the lines 1 to 3 of MSWI Flötzersteig in Vienna according to CEN/TS 1948-4
Testing Company:	E.ON Engineering GmbH Bergmannsglückstraße 41-43 D-45986 Gelsenkirchen GERMANY

address: E.ON Engineering GmbH, P.O. Box 20 02 55, 45837 Gelsenkirchen

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1 General Information about the Project

1.1 Name of Contracting Body: DIN Deutsches Institut für Normung e.V.
Burggrafenstraße 6, D-10787 Berlin

1.2 Plant Identification: Fernwärme Wien, Abfallbeseitigungsanlage Flötzersteig

1.3 Location of plant: Flötzersteig 12, A-1160 Wien

1.4 Type of Operation: Municipal Solid Waste Incineration Plant, Lines 1 to 3

1.5 Date of Testing: 20th through 26th June, 2007

1.6 Occasion of Testing: Validation measurements of dioxin-like and marker PCBs according to CEN/TS 1948-4

1.7 Test Program Definition: According to the mandate M/388 of the European Commission "Measuring methods for the determination of dioxin-like PCBs from stationary sources" validation measurements of the technical specification CEN/TS 1948-4 have been performed including the three different types of sampling for stationary sources. Along with two other measuring teams (see 1.13) simultaneous flue gas testing was carried out in the common clean gas duct of three incineration lines of the MSWI Flötzersteig in Vienna. Thereby E.ON Engineering applied the cooled probe method which is one of three sampling methods described in EN 1948-1 or TS 1948-4 respectively. The other two sampling methods - filter/condenser method and dilution method - were applied by the other teams. In total six duplicate flue gas samplings with two independent sampling trains were performed by each team, supplemented by field blank and break through measurements.

1.8 Measuring Parameters:

Mass concentration of dioxin-like PCBs and marker PCBs in the clean gas of a municipal solid waste incineration plant

Dioxin-like PCBs:
PCB 77, PCB 81, PCB 105, PCB 114, PCB 118, PCB 123, PCB 126, PCB 156, PCB 157, PCB 167, PCB 169, PCB 189

Marker PCB:
PCB 28. PCB 52, PCB 101, PCB 138, PCB 153, PCB 180

Complementary, for characterization of the flue gas, velocity, temperature and oxygen content (O_2) of the flue gas as well as duct pressure were measured.

1.9 Conduction of the Testing Program:

The testing program was conductively organized by DIN Deutsches Institut für Normung e.V., represented by the secretary to CEN/TC 264/WG 1, KRdL im VDI und DIN.

1.10 Personnel Involved in Testing:

Johannes Mayer, PhD chemist, E.ON Engineering GmbH
Frank Siebenborn, chemical laboratory assistant, E.ON Engineering GmbH

1.11 Site Supervisor:

Dr. Johannes Mayer
Phone No: +49-209-601 6284
Email: johannes.mayer@eon-engineering.com

1.12 Other Institutes Involved:

For the analytical part of the present work:
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Dr. Peter Luthardt
Mendelstraße 11, D-48149 Münster
Phone No: +49-251-980 2405
Email: p.luthardt@mas-tp.com

1.13 Other Teams in Validation Trials:

For the application of filter/condenser method:
Force Technology
Ole Schleicher
Park Allé 345, DK-2605 Broendby
in cooperation with:
ERGO Forschungsgesellschaft mbH
Dr. Michael Ball
Geierstraße 1, D-22305 Hamburg

For the application of dilution method:
ECO-Research
Dr. Werner Tirler
Via Negrelli, 13, I-39100 Bolzano
in cooperation with:
Monitoring Systems GmbH
Schloss 2, A-2542 Kottingbrunn

2 Description of the Installation

The municipal solid waste incineration plant Flötzersteig consists of 3 lines with Martin grates, incinerating 25 ts of waste/hour. Each line is equipped with a separate state-of-the-art flue gas cleaning system, consisting of a fabric filter with activated carbon injection to reduce mercury and dioxins, a 2-stage wet scrubber for the removal of acid components and a catalyst box to reduce NOx and dioxins. A Schematic of the plant is given below in Figure 1.

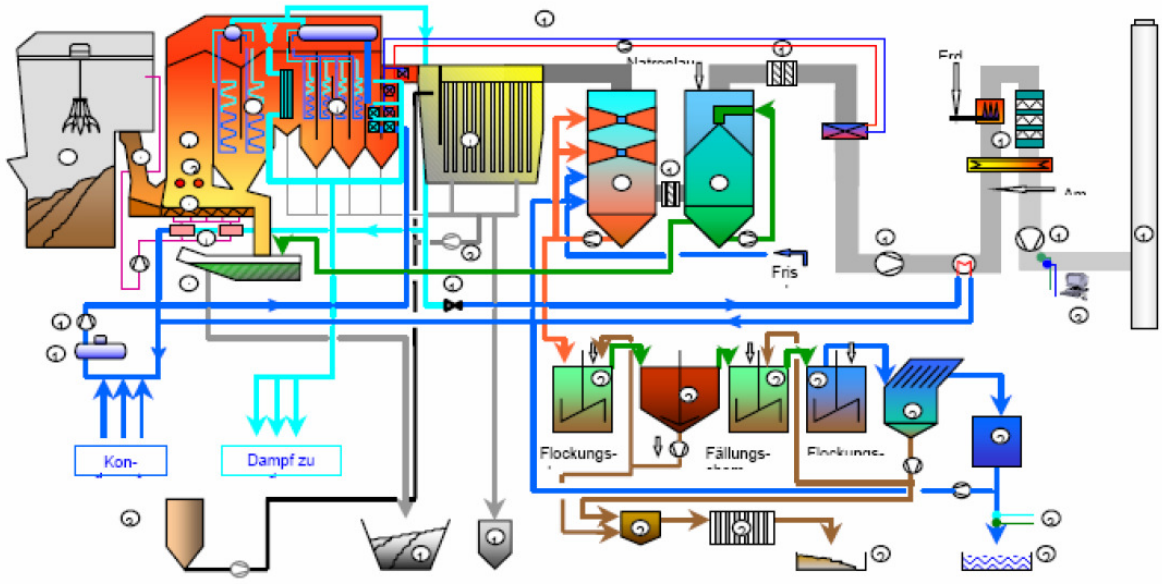


Figure 1: Schematic of MSWI Flötzersteig

All 3 lines are mixed into one stack. The measurement positions are after the mixing. A horizontal flue gas channel before stack allows the measurement of the pollutants. At both sides of the horizontal flue gas channel measurements of the PCBs can be performed.

3 Description of Source and Sampling Location

3.1 Location of the Measurement Cross-Section:

The measurement cross section is located in the common horizontal flue gas duct before the stack.
Diameter of the channel: 2400 mm
Automated measurement systems in this area for: CO, CO_2, NO_x, SO_2, O_2, NH_3, TOC, Hg

3.2 Number of Ports for Sampling and Number of Samplings

Several sampling ports were available at the sampling site. Due to the fact that three teams had to perform duplicate samplings at the same time (in total six samplings simultaneously) it was agreed upon to perform single point measurements instead of traverse sampling.

Figure 2 shows the arrangement of the sampling ports on the west and east side of the clean gas duct and their use for sampling.

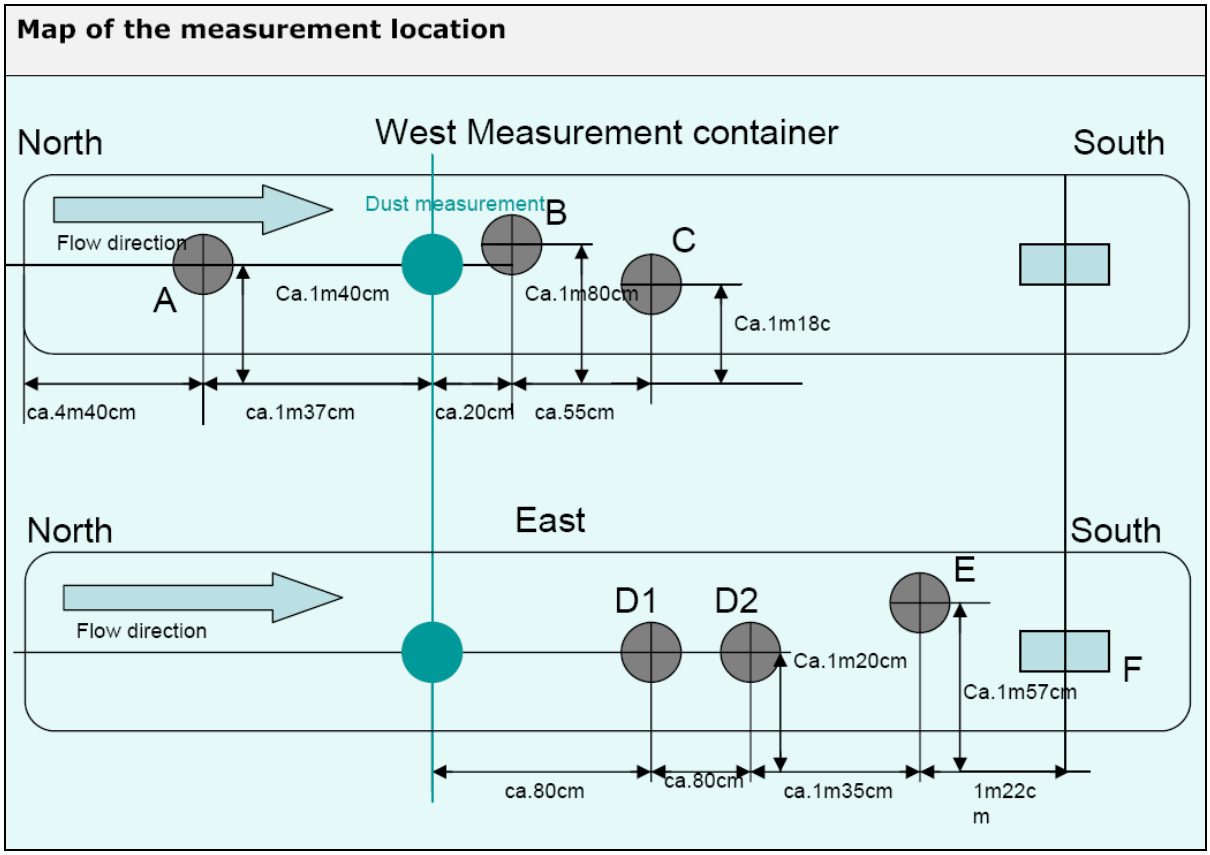


Figure 1: Arrangement of sampling ports and their use for sampling
A: Dilution method; **B:** Filter/condenser method; **C:** Cooled probe method
D1: Cooled probe method; **E:** Filter/condenser method; **F:** Dilution method

The following tests were performed during validation:

Date:	Duplicate sampling:	Field blank:	Break-through test:
19/06/2007		1.	
20/06/2007	1.		
21/06/2007	2.		1.
22/06/2007	3.	2.	
23/06/2007	4.		2.
25/06/2007	5.	3.	
26/06/2007	6.		3.

4 Measuring and Analytical Methods

4.1 Determination of Flue Gas Parameters:

4.1.1 Flue Gas Velocity:

The flue gas velocity was determined by using a Prandtl's pitot tube in combination with an electronic differential pressure transducer from Digitron Company, UK, type 2080P. The measurement was performed at the two sampling points selected for duplicate samplings.

4.1.2 Static Pressure in the Measuring Cross Section:

The static pressure was determined using the differential pressure transducer mentioned in 4.1.1 with corresponding connections.

4.1.3 Air Pressure at the Sampling location:

The ambient air pressure was determined with a calibrated precision barometer, LAMBRECHT Company, Germany.

4.1.4 Flue Gas Temperature:

The flue gas temperature was determined via a Ni/CrNi-thermocouple. The measurement was performed at one sampling point.

4.1.5 Flue Gas Humidity:

The flue gas humidity was not determined by measurement. The values needed for calculation of isokinetic suction were transferred from the calibrated measuring device installed at the plant.

4.1.6 Flue Gas Density:

Flue gas density was calculated by taking into account the amount of oxygen (O_2), carbon dioxide (CO_2; calculated from CO_{2max}), nitrogen (N_2), argon (Ar), the flue gas humidity and temperature as well as pressure in the measuring cross section.

4.2 Gaseous and Particulate Emissions:

4.2.1 Measuring Parameter: Oxygen (O_2)

4.2.1.1 Measuring Method: Paramagnetic; DIN EN 14789
Oxygen concentration was measured in the dry effluent of the gas meter; gas conditioning was therefore not necessary.

4.2.1.2 Analyzer: Manufacturer: M & C Company
Type: PMA 30

4.2.1.3 Measuring Range: 0 - 30 Vol.-%

4.2.1.4 Analyzer Calibration: Calibration Gas: Air (20.9 Vol.-%)

4.2.1.5 Performance Characteristics; Quality Assurance Procedures:

Limit of Determination: 0.1 Vol.-%

Quality Assurance: The analyzer used was checked and calibrated daily before sampling.

4.2.2 Measuring Parameter: Dioxin-like PCBs and Marker PCBs

4.2.2.1 Measuring Method: Sampling, clean-up and analysis of PCBs were performed according to EN 1948-1 in combination with CEN/TS 1948-4. For sampling the cooled probe method was applied.

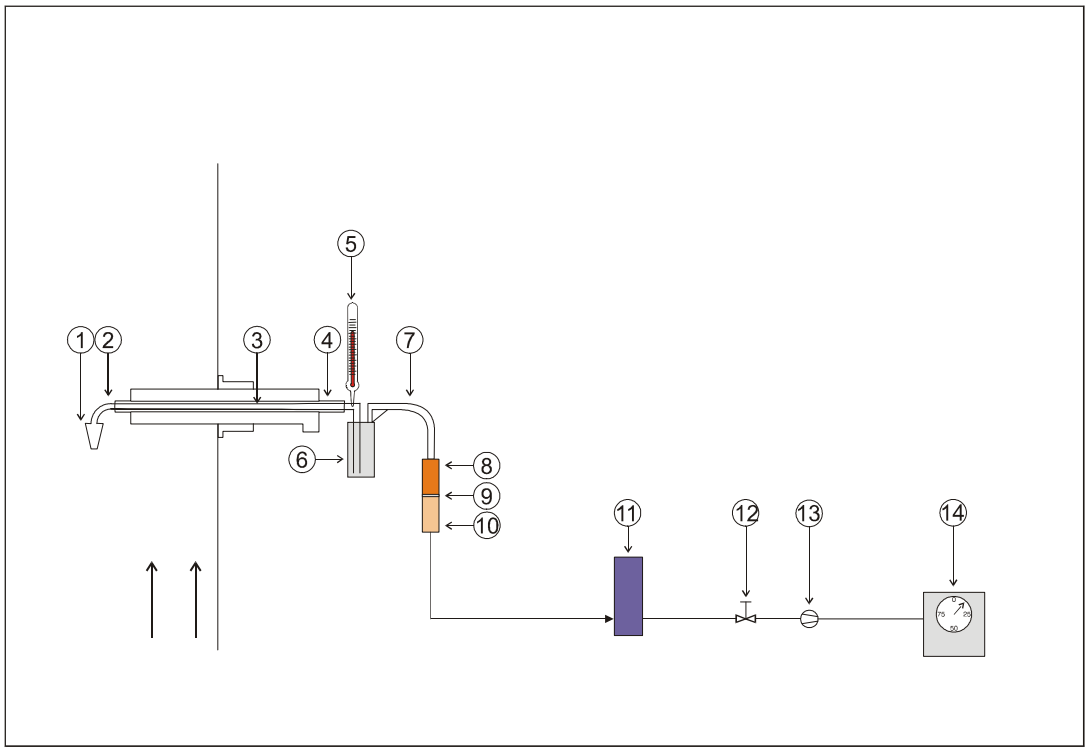
Due to the fact that in the scope of this validation trials in total six samplings had to be performed simultaneously at the same site, the following deviations from the above mentioned standards were agreed upon between the secretary of CEN/TS 264/WG1 and the participants beforehand:

- Traverse sampling on several sampling points according to EN 13284-1 was not performed. Instead all participants performed single point sampling in a restricted area of the channel cross section.

- Determination of the flue gas humidity was not performed by the sampling teams. Instead the readings from the calibrated automated monitoring system of the plant were used for calculation of isokinetic suction.

4.2.2.2 Sampling Equipment:

A schematic of the sampling train used is shown below in Figure 2.



1	Nozzle	6	Condensate flask	11	Silica gel drying tower
2	Elbow	7	Glass connection	12	Control valve
3	Glass or titanium liner	8	Glass wool	13	pump
4	Cooled probe	9	Plane filter GF10HY	14	Dry gas meter
5	Thermometer	10	XAD-2 resin		

Figure 2: Sampling train according to cooled probe method used for PCB testing

Nozzle:	8 mm titanium nozzle
Elbow:	Titanium
Probe:	Titanium, cooled with running water from the local water supply (appox. 15 °C), equipped with a rigidly coupled titanium liner.
Condensate flask:	White glass of 2 litre capacity with screw cap and PTFE seal
Filter cartridge:	Brown glass, inner dimensions: 95 mm height, 45 mm diameter, equipped with a quartz fibre plane filter, type Schleicher&Schüll GF10HY, 50 mm diameter, positioned on a slit bottom and fixed with glass wool plug. Specifications of the plane filter according to EN 1948-1, clause 7.1 a) are fulfilled.
XAD cartridge:	Brown glass, inner dimensions: 95 mm height, 45 mm diameter, equipped with a glass frit and filled with at least 30 g of pre-conditioned XAD-2 resin.
Drying tower:	Drying tower filled with pre-conditioned silica gel.
Meter Unit:	Gas tight vacuum pump (max. 11 m^3/h) with by pass valve for flow control, flow meter (0 - 10 m³/h), dry gas meter (0 - 6 m³/h).

4.2.2.3 Addition of Sampling Standard:

Prior to shipment of the sampling equipment to the plant the glass wool in the filter cartridges as well as the XAD resin were spiked in the laboratory of mas in a 50:50 ratio with sampling standard according to Table 1 of CEN/TS 1948-4 (any 1 ng of PCBs 60, 127 and 159).

4.2.2.4 Assembly of the Sampling Train and Performance of the Leak Check:

The sampling train was assembled according to Figure 2 just before sampling. A leak check of the fully assembled sampling train was performed by plugging the nozzle and evaporating the sampling train to -600 mbar which is approx. three times less than the lowest pressure during sampling.

4.2.2.5 Sampling:

The assembled sampling train was inserted into the duct and the nozzle adjusted to the selected sampling point. After start of sampling (all teams with all sampling trains simultaneously) the required suction rate was manually adjusted and controlled thereafter every 15 Minutes. Temperatures, oxygen content and gas meter were also read every 15 minutes during sampling.

4.2.2.6 Sample Recovery:

After sampling the sampling train was disassembled and condensate flask, filter cartridge and XAD-2 cartridge were locked with appropriate stoppers. All glass connection parts as well as the titanium liner of the probe incl. nozzle were rinsed first with acetone followed by toluene and rinsing solutions were collected and stored in a glass container. All parts of the sample were then stored in a closed sample box to the exclusion of light.

4.2.2.7 Field Blanks:

Field blanks were taken by assembly of the complete sampling train followed by a leak check, disassembly and rinsing of the sampling train. The probe was not inserted into the duct and no flue gas or air was sucked through the sampling train with exception of the leak check.

4.2.2.8 Validation Measurement (Break-through Test):

Three times a break-through test according to EN 1948-1, clause 7.1 c), was performed. During these validation measurements a second XAD-2 cartridge was mounted additionally downstream of the mandatory adsorption stage and sampling was performed as usual. After sampling the second XAD-2 cartridge (back-up cartridge) was analysed separately from the original sample.

4.2.2.9 Sample Storage and Transport:

Samples were stored after sampling in closed boxes in the sampling site area at ambient air temperature. Transfer to the laboratory of mas was carried out under the same conditions within seven days after the last sampling.

4.2.2.10 Measures for Quality Assurance during Sampling:

The gas meters, pressure gauges, thermocouples and oxygen analyzers are checked and calibrated at regular intervals.

The analytical procedures are validated and regularly checked by reference material and, wherever possible, round-robin-tests.

A leak check of the sampling train is performed before sampling. Additionally leak tightness is verified during sampling by oxygen measurements at the outlet of the gas meter.

Isokinetic sampling is re-checked after sampling by calculation of the isokinetic ratio.

4.2.2.11 Analytical Determination

Extraction, clean-up and analytical determination of the PCBs in the samples was carried out according to CEN/TS 1948-4 by mas | münster analytical solutions gmbh, Mendelstraße 11, D-48149 Münster.

4.2.2.12 Extraction

After entry in the laboratories of mas the samples were treated as follows:

Condensate:
Filtration with a fluted filter, type MN 615 ¼ Ø185 mm, and 3-fold liquid-liquid extraction of the filtrate with toluene.

Filter and XAD-2:
Particle collecting media (glass wool and plane filter from the filter cartridge, fluted filter from condensate filtration) were pre-treated with hydrochloric acid and then dried gently at 40 °C. The XAD-2 resin is transferred to an aluminium bowl and dried as well. The cartridge is carefully cleaned rinsed with Acetone/Toluene at the inside. All parts are then transferred into a soxhlet apparatus.

Extraction standard addition:
Extraction standard according to Table D.1 of CEN/TS 1948-4 (any 1 ng of PCBs 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169 and 189 as well as any 5 ng of marker PCBs 28, 52, 101, 138, 153 and 180) was added to the soxhlet apparatus and extraction was performed with toluene for at least 20 h.

After extraction was completed the raw extracts were divided in a ratio of 50:50. A part of 50 % was used for analytical procedure. The other part was sealed and retained for further investigations.

4.2.2.13 Clean-up:

50 % of the raw extract was cleaned-up by column chromatography and use of various adsorbents. After the final clean-up step recovery standard according to Table 1 of CEN/TS 1948-4 (any 1 ng of PCBs 70, 111 and 170) was added to the samples. Finally the samples were concentrated to a volume of 100 µl before injection to the GC/MS system.

4.2.2.14 Identification and Quantification:

For analysis of dioxin-like and marker PCBs a GC/MS system of Thermo Electron GmbH consisting of a gas chromatograph Trace GC Ultra coupled to a high-resolution mass spectrometer MAT 95 XP was used.

5 Plant Operating Conditions during Measurements

The waste incineration plant Flötzersteig was operated during the validation tests at the following conditions:

On Tuesday 19/06/2007 line 2 had to be shut-down due to the necessity of some maintenance work. On Wednesday 20/06/2007, the first sampling day, only two of three incineration lines were in operation. Line 2 was still shut down and purged with fresh air for cooling down. This was continued on Thursday 21/06/2007. On Friday 22/06/2007 conditions were in principle the same as the day before but purging air through line 2 was reduced since people were working inside. On Saturday 23/06/2007 Line 2 was started-up again and PCB samplings were performed during start-up period. On the last two sampling days, 25-26/06/2007, the plant was in normal operation with all three lines on full load. The following Table 1 summarizes some of the most important data. Further data are documented in Annex 4.

Table 1: Plant operating conditions during testing given as daily average values

Date	20/06/07	21/06/07	22/06/07	23/06/07	25/06/07	26/06/07
Total steam production [t/h]	58.5	58.9	59.3	90.3	87.4	89.6
Steam production, line 1 [t/h]	29.5	29.2	29.4	29.1	28.8	29.7
Steam production, line 2 [t/h]	0	0	0	27.3	30.1	30.4
Steam production, line 3 [t/h]	29.0	29.7	29.9	29.7	28.4	29.5
O_2 content in clean gas [Vol.-%]	13.9	13.9	12.2	8.8	8.8	8.7
Clean gas humidity [%]	16.4	16.4	17.6	21.7	22.3	21.3
Clean gas temperature [°C]	131.3	130.7	128.9	133.1	132.5	132.3
Static pressure [mbar]	0.2	0.1	-0.8	-0.5	-0.4	-0.6
Clean gas flow [kNm^3/h]	94.6	96.3	94.8	144.4	141.8	144.7

6 Results

6.1 Sampling Data:

The sampling data of the six PCB samplings on the west side of the clean gas channel are documented in Table 2. The corresponding data of the samplings on the east side are given in Table 3.

Table 2: Sampling Data of the PCB Samplings on the West Side of the Clean Gas Duct

Plant:		**MSWI Flötzersteig**					
Sampling site:		**Clean Gas, West Side**					
Sampling port / point:		**Port C / 1.5 m distance from channel wall**					
Measuring parameters:		**PCBs**					
Sampling date:		20/06/2007	21/06/2007	22/06/2007	23/06/2007	25/06/2007	26/06/2007
Sampling period:		11:10-17:10	09:50-15:50	09:35-15:35	04:10-10:10	09:45-15:45	08:50-14:50
Interruptions:	[min]	0	0	0	0	0	0
E.ON sample designation:		640276-1-1	640276-1-2	640276-1-3	640276-1-4	640276-1-5	640276-1-6
Nozzle diameter:	[mm]	8	8	8	8	8	8
Flue gas velocity at sampling point:	[m/s]	17.0	16.6	11.3	13.7	14.3	14.4
Sucked off sample volume (at actual conditions):	[m³]	12.128	12.015	7.259	9.073	9.651	8.930
Average pressure at gas meter:	[kPa]	98.0	97.3	97.6	97.6	97.	97.0
Average temperature at gas meter:	[°C]	34.5	30.9	27.5	26	32	24
Air pressure:	[kPa]	98.0	97.3	97.6	97.6	97.	97,0
Sucked off sample volume (standard conditions):	[Nm³][a]	10.415	10.365	6.352	7.980	8.313	7.859
Isokinetic ratio:		1.003	1.025	0.948	0.983	1.039	1.004
O_2 content in flue gas [b]:	[Vol-%]	14.3	14.3	10.9	9.5	9.1	8.9
Reference oxygen value	[Vol-%]	11.0	11.0	11.0	11.0	11.0	11.0
O_2 normalisation factor		1.493	1.493	0.990	0.870	0.840	0.826

a Nm^3 refers to 0 °C, 101.3 kPa, dry

b Values provided by FORCE for the individual sampling period; Vol.-% refers to dry flue gas

Table 3: Sampling Data of the PCB Samplings on the East Side of the Clean Gas Duct

Plant:		**MSWI Flötzersteig**					
Sampling site:		**Clean Gas, East Side**					
Sampling port / point:		**Port D.1 / 0.7 m distance from channel wall**					
Measuring parameters:		**PCBs**					
Sampling date:		20/06/2007	21/06/2007	22/06/2007	23/06/2007	25/06/2007	26/06/2007
Sampling period:		11:10-17:10	09:50-15:50	09:35-15:35	04:10-10:10	09:45-15:45	08:50-14:50
Interruptions:	[min]	0	0	0	0	0	0
E.ON sample designation:		640276-2-1	640276-2-2	640276-2-3	640276-2-4	640276-2-5	640276-2-6
Nozzle diameter:	[mm]	8	8	8	8	8	8
Flue gas velocity at sampling point:	[m/s]	16.7	16.0	11.3	13.7	14.4	14.3
Sucked off sample volume (at actual conditions):	[m³]	12.083	11.657	7.271	9.263	9.738	8.800
Average pressure at gas meter:	[kPa]	98.0	97.3	97.6	97.6	97.5	97.0
Average temperature at gas meter:	[°C]	31	28.5	24	21.5	28	21
Air pressure:	[kPa]	98.0	97.3	97.6	97.6	97.5	97,0
Sucked off sample volume (standard conditions):	[Nm³][a]	10.495	10.137	6.438	8.271	8.499	7.823
Isokinetic ratio:		1.029	1.040	0.961	1.019	1.057	1,004
O_2 content in flue gas [b]:	[Vol-%]	14.3	14.3	10.9	9.5	9.1	8.9
Reference oxygen value	[Vol-%]	11.0	11.0	11.0	11.0	11.0	11.0
O_2 normalisation factor		1.493	1.493	0.990	0.870	0.840	0.826

a Nm^3 refers to 0 °C, 101.3 kPa, dry

b Values provided by FORCE for the individual sampling period; Vol.-% refers to dry flue gas

6.2 Results of PCB Testing:

The results of PCB testing on the west and east side of the clean gas channel are documented in the Tables 4 and 5. It was agreed upon between the participants to normalise all data to 11 % oxygen, regardless if the actual O_2 value was above or below 11 %.

Table 4: Results of PCB Testing on the West Side of the Clean Gas Duct

PCB Results	**Clean Gas 1 / West Side / Port C**					
Date of sampling	**20/06/2007**	**21/06/2007**	**22/06/2007**	**23/06/2007**	**25/06/2007**	**26/06/2007**
E.ON sample designation	640276-1-1	640276-1-2	640276-1-3	640276-1-4	640276-1-5	640276-1-6
mas sample no.	07 0388 001	07 0388 002	07 0388 003	07 0388 004	07 0388 005	07 0388 006
Sample volume [Nm^3]	10.415	10.365	6.352	7.980	8.313	7.859
O_2 content in flue gas [Vol.-%]	14.35	14.39	11.30	9.66	9.27	9.10
O_2 correction factor	1.504	1.513	1.031	0.882	0.853	0.840
Unit	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³
Dioxin-like PCB (WHO-PCB)						
Non-ortho PCB						
PCB 77	0.0375	0.0294	0.00950	0.0103	0.00758	0.00752
PCB 81	0.00305	0.001342	0.000689	0.00111	0.00096	0.000451
PCB 126	0.00223	0.000764	0.000446	0.00117	0.000292	0.000208
PCB 169	0.000464	0.000380	0.000527	0.000283	0.000342	0.000216
Mono-ortho PCB						
PCB 105	0.0430	0.0224	0.0117	0.0141	0.0099	0.0113
PCB 114	0.00517	0.00359	0.00111	0.00136	0.00094	0.00101
PCB 118	0.158	0.1459	0.109	0.0825	0.0805	0.0526
PCB 123	0.00372	0.001307	0.000755	0.00110	0.000575	0.000428
PCB 156	0.01245	0.01101	0.00549	0.00733	0.00528	0.00592
PCB 157	0.00492	0.00642	0.00478	0.00345	0.00339	0.00234
PCB 167	0.00970	0.00808	0.00611	0.00643	0.00408	0.00381
PCB 189	0.00265	0.00372	0.00265	0.00260	0.00152	0.00127
WHO-TEQ excl. LOQ[a]	**0.000264**	**0.000111**	**0.0000690**	**0.000137**	**0.0000475**	**0.0000349**
WHO-TEQ incl. LOQ[b]	0.000264	0.000111	0.0000690	0.000137	0.0000475	0.0000349
Marker PCB						
PCB 28	1.102	0.643	0.333	0.443	0.273	0.245
PCB 52	0.647	0.566	0.273	0.274	0.188	0.203
PCB 101	0.486	0.410	0.192	0.223	0.157	0.153
PCB 153	0.343	0.276	0.153	0.217	0.126	0.133
PCB 138	0.214	0.178	0.0901	0.111	0.0744	0.0800
PCB 180	0.1112	0.0764	0.0488	0.090	0.0375	0.0403
Total 6 marker PCB excl. LOQ[a]	2.90	2.15	1.09	1.36	0.86	0.85
Total 6 marker PCB incl. LOQ[b]	2.90	2.15	1.09	1.36	0.86	0.85

All concentration values [ng/Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at 11 % O_2
Sample volume data [Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at actual O_2
Oxygen concentration values [Vol.-%] related to dry flue gas
a TEQs and totals calculated including quantified congeners only
b TEQs and totals calculated including the entire limit of quantification for non-quantified congeners

Table 5: Results of PCB Testing on the East Side of the Clean Gas Duct

PCB Results	Clean Gas 2 / East Side / Port D.1					
Date of sampling	**20/06/2007**	**21/06/2007**	**22/06/2007**	**23/06/2007**	**25/06/2007**	**26/06/2007**
E.ON sample designation	640276-2-1	640276-2-2	640276-2-3	640276-2-4	640276-2-5	640276-2-6
mas sample no.	07 0388 007	07 0388 008	07 0388 009	07 0388 010	07 0388 011	07 0388 012
Sample volume [Nm^3]	10.495	10.137	6.438	8.271	8.499	7.823
O_2 content in flue gas [Vol.-%]	14.35	14.39	11.30	9.66	9.27	9.10
O_2 correction factor	1.504	1.513	1.031	0.882	0.853	0.840
Unit	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³
Dioxin-like PCB (WHO-PCB)						
Non-ortho PCB						
PCB 77	0.0487	0.0209	0.00968	0.0117	0.00742	0.00604
PCB 81	0.00310	0.001217	0.000815	0.00151	0.000722	0.000658
PCB 126	0.00240	0.001052	0.000480	0.00187	0.00105	0.000307
PCB 169	0.000407	0.000410	0.000408	0.00082	0.000513	0.000290
Mono-ortho PCB						
PCB 105	0.0536	0.0221	0.0123	0.0171	0.0122	0.00820
PCB 114	0.00703	0.00327	0.001011	0.00172	0.00139	0.00091
PCB 118	0.205	0.1403	0.111	0.098	0.0798	0.0656
PCB 123	0.00313	0.000868	0.00122	0.00160	0.00089	0.000659
PCB 156	0.0162	0.00953	0.00828	0.0096	0.0085	0.00492
PCB 157	0.00531	0.00477	0.00371	0.00379	0.00307	0.00364
PCB 167	0.01178	0.00681	0.00623	0.00694	0.00580	0.00478
PCB 189	0.00223	0.00315	0.00294	0.00290	0.00195	0.00164
WHO-TEQ excl. LOQ[a]	**0.000290**	**0.0001370**	**0.0000725**	**0.000216**	**0.000127**	**0.0000467**
WHO-TEQ incl. LOQ[b]	0.000290	0.0001370	0.0000725	0.000216	0.000127	0.0000467
Marker PCB						
PCB 28	1.233	0.488	0.347	0.496	0.300	0.205
PCB 52	0.798	0.424	0.254	0.286	0.204	0.143
PCB 101	0.615	0.305	0.208	0.270	0.181	0.129
PCB 153	0.410	0.246	0.199	0.297	0.153	0.111
PCB 138	0.286	0.155	0.0956	0.134	0.094	0.0606
PCB 180	0.1244	0.1005	0.0489	0.112	0.0494	0.0349
Total 6 marker PCB excl. LOQ[a]	3.47	1.72	1.15	1.60	0.98	0.683
Total 6 marker PCB incl. LOQ[b]	3.47	1.72	1.15	1.60	0.98	0.683

All concentration values [ng/Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at 11 % O_2
Sample volume data [Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at actual O_2
Oxygen concentration values [Vol.-%] related to dry flue gas
a TEQs and totals calculated including quantified congeners only
b TEQs and totals calculated including the entire limit of quantification for non-quantified congeners

The results of field blanks and break through tests are given in Table 6. The corresponding recovery rates of all samples are summarised in Annex 1 of this report.

Table 6: Results of PCB Field Blanks and Break-through Samples

PCB Results	Field blank // Break-trough samples					
Kind of samples	**Field blanks**			**Break-through samples**		
Date of sampling	**19/06/2007**	**22/06/2007**	**25/06/2007**	**21/06/2007**	**23/06/2007**	**26/06/2007**
Sample designation	640276-1-B1	640276-2-B2	640276-1-B3	640276-2-2b	640276-2-4b	640276-2-6b
mas sample no.	07 0388 013	07 0388 014	07 0388 015	07 0388 016	07 0388 017	07 0388 018
Sample volume [Nm^3]	9.000	9.000	9.000	10.137	8.271	7.823
O_2 content in flue gas [Vol.-%]	14.35	11.30	9.27	14.39	9.66	9.10
O_2 correction factor	1.504	1.031	0.853	1.513	0.882	0.840
Unit	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³	ng/Nm³
Dioxin-like PCB (WHO-PCB)						
Non-ortho PCB						
PCB 77	0.01049	0.00878	0.0120	0.00413	0.00360	0.00316
PCB 81	0.000686	0.000470	0.00092	0.000672	0.000566	0.000505
PCB 126	0.000483	0.000643	0.000619	0.0001244	0.000206	0.000127
PCB 169	nd	0.000168	0.000195	0.000261	0.000109	0.000204
Mono-ortho PCB						
PCB 105	0.01268	0.0170	0.0165	0.00349	0.00366	0.00387
PCB 114	0.001240	0.00167	0.00175	nd	0.000513	0.000416
PCB 118	0.0917	0.0974	0.093	0.0601	0.0481	0.0495
PCB 123	0.000885	0.00131	0.000778	0.000802	0.000356	0.000423
PCB 156	0.00610	0.0114	0.00791	0.00325	0.00278	0.00211
PCB 157	0.00434	0.00428	0.00342	0.00322	0.00277	0.00291
PCB 167	0.00589	0.00894	0.00694	0.00442	0.00332	0.00269
PCB 189	0.00243	0.00296	0.00220	0.00222	0.00143	0.00177
WHO-TEQ excl. LOQ[a]	**0.0000660**	**0.0000876**	**0.0000830**	**0.0000255**	**0.0000305**	**0.0000234**
WHO-TEQ incl. LOQ[b]	0.0000675	0.0000876	0.0000830	0.0000256	0.0000305	0.0000234
Marker PCB						
PCB 28	0.315	0.281	0.377	0.0993	0.097	0.084
PCB 52	0.219	0.180	0.221	0.0712	0.111	0.0749
PCB 101	0.173	0.185	0.179	0.0522	0.0498	0.0406
PCB 153	0.152	0.193	0.176	0.0719	0.0571	0.0493
PCB 138	0.0736	0.132	0.101	0.0280	0.0248	0.0198
PCB 180	0.0406	0.0794	0.0533	0.0308	0.0185	0.0192
Total 6 marker PCB excl. LOQ[a]	0.972	1.05	1.11	0.353	0.358	0.288
Total 6 marker PCB incl. LOQ[b]	0.972	1.05	1.11	0.353	0.358	0.288

All concentration values [ng/Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at 11 % O_2
Sample volume data [Nm^3] normalised to 0 °C, 101.3 kPa, dry flue gas at actual O_2
Oxygen concentration values [Vol.-%] related to dry flue gas
a TEQs and totals calculated including quantified congeners only
b TEQs and totals calculated including the entire limit of quantification for non-quantified congeners

For calculation of the field blank results an average sample volume of 9 m^3 was assumed. For calculation of break-through results the same sample volume was used as for the corresponding samples.

6.3 Limits of Quantification and Measurement Uncertainty:

Limits of quantification (LOQ) were determined for this validation test considering the achieved signal-to-noise ratio (limit of detection) in combination with the individual analytical blank of the mas laboratory. Resulting LOQs, based on an average sample volume of 9 Nm^3, are given in Annex 2.

Determination of the uncertainty of measurement is a mandatory request of DIN EN ISO/IEC 17025. Both, the sampling team of E.ON as well as analytical team of mas had determined their individual uncertainty of measurement according to their own specified procedures.
In Annex 3 the individual uncertainties of measurement for sampling and analysis are documented and an extended combined uncertainty of measurement is calculated for the overall procedure. These data are given for information only, since interlaboratory tests and round robin tests may be used for determination of the individual uncertainty of measurement and the results of this validation trial change the hereto existing data base. Uncertainties of measurement will be re-calculated after the results of this validation trial are available.

PAU/May
28/09/2007

Hans-Joachim Dieckmann

Dr. Johannes Mayer

7 Annexes

Analytical PCB Data and Recovery Rates — Annex 1.1

	Clean Gas 1 / West Side / Port C					
Date of sampling	**20/06/2007**	**21/06/2007**	**22/06/2007**	**23/06/2007**	**25/06/2007**	**26/06/2007**
E.ON sample designation	640276-1-1	640276-1-2	640276-1-3	640276-1-4	640276-1-5	640276-1-6
mas sample no.	07 0388 001	07 0388 002	07 0388 003	07 0388 004	07 0388 005	07 0388 006
Date of entry in the lab	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007
Date of extr. standard addition	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of extraction	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of clean-up	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007
Date of GC/MS injection	28/07/2007	07/08/2007	28/07/2007	28/07/2007	28/07/2007	28/07/2007
Recovery Rates of Sampling Standards						
$^{13}C_{12}$-PCB 60 [%]	99	95	94	93	98	99
$^{13}C_{12}$-PCB 127 [%]	104	101	105	92	91	107
$^{13}C_{12}$-PCB 159 [%]	87	94	92	92	91	71
Recovery Rates of Extraction Standards						
$^{13}C_{12}$-PCB 77 [%]	92	70	86	84	75	52
$^{13}C_{12}$-PCB 81 [%]	95	86	95	88	97	97
$^{13}C_{12}$-PCB 105 [%]	98	147	106	98	104	100
$^{13}C_{12}$-PCB 114 [%]	98	136	99	102	110	97
$^{13}C_{12}$-PCB 118 [%]	70	117	73	77	86	69
$^{13}C_{12}$-PCB 123 [%]	91	143	97	96	108	98
$^{13}C_{12}$-PCB 126 [%]	61	98	79	74	90	55
$^{13}C_{12}$-PCB 156 [%]	106	101	120	128	103	114
$^{13}C_{12}$-PCB 157 [%]	105	94	114	130	106	109
$^{13}C_{12}$-PCB 167 [%]	106	107	119	128	101	119
$^{13}C_{12}$-PCB 169 [%]	101	88	91	106	93	94
$^{13}C_{12}$-PCB 189 [%]	119	96	111	121	103	104
$^{13}C_{12}$-PCB 28 [%]	81	98	81	76	82	83
$^{13}C_{12}$-PCB 52 [%]	74	72	74	67	79	78
$^{13}C_{12}$-PCB 101 [%]	84	86	90	81	97	85
$^{13}C_{12}$-PCB 138 [%]	80	91	94	110	87	78
$^{13}C_{12}$-PCB 153 [%]	75	89	89	107	84	78
$^{13}C_{12}$-PCB 180 [%]	100	67	83	103	81	87

Analytical PCB Data and Recovery Rates (continued) — Annex 1.2

	Clean Gas 2 / East Side / Port D.1					
Date of sampling	**20/06/2007**	**21/06/2007**	**22/06/2007**	**23/06/2007**	**25/06/2007**	**26/06/2007**
E.ON sample designation	640276-2-1	640276-2-2	640276-2-3	640276-2-4	640276-2-5	640276-2-6
mas sample no.	07 0388 007	07 0388 008	07 0388 009	07 0388 010	07 0388 011	07 0388 012
Date of entry in the lab	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007
Date of extr. standard addition	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of extraction	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of clean-up	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007
Date of GC/MS injection	28/07/2007	07/08/2007	28/07/2007	28/07/2007	28/07/2007	28/07/2007
Recovery Rates of Sampling Standards						
$^{13}C_{12}$-PCB 60 [%]	90	103	98	92	92	93
$^{13}C_{12}$-PCB 127 [%]	105	91	80	99	85	103
$^{13}C_{12}$-PCB 159 [%]	78	81	112	104	99	78
Recovery Rates of Extraction Standards						
$^{13}C_{12}$-PCB 77 [%]	77	66	94	87	84	89
$^{13}C_{12}$-PCB 81 [%]	91	99	91	100	95	100
$^{13}C_{12}$-PCB 105 [%]	100	147	95	100	100	106
$^{13}C_{12}$-PCB 114 [%]	99	145	95	98	101	97
$^{13}C_{12}$-PCB 118 [%]	68	117	86	74	85	69
$^{13}C_{12}$-PCB 123 [%]	96	146	95	93	100	96
$^{13}C_{12}$-PCB 126 [%]	63	98	72	69	79	59
$^{13}C_{12}$-PCB 156 [%]	111	108	127	144	111	116
$^{13}C_{12}$-PCB 157 [%]	106	105	129	145	115	109
$^{13}C_{12}$-PCB 167 [%]	115	109	149	151	116	115
$^{13}C_{12}$-PCB 169 [%]	94	96	97	88	94	99
$^{13}C_{12}$-PCB 189 [%]	103	95	79	107	89	88
$^{13}C_{12}$-PCB 28 [%]	76	99	84	86	85	81
$^{13}C_{12}$-PCB 52 [%]	71	75	71	79	78	77
$^{13}C_{12}$-PCB 101 [%]	85	85	86	83	88	85
$^{13}C_{12}$-PCB 138 [%]	84	90	136	132	110	94
$^{13}C_{12}$-PCB 153 [%]	81	86	133	131	107	85
$^{13}C_{12}$-PCB 180 [%]	84	68	97	122	94	94

Analytical PCB Data and Recovery Rates (continued) — Annex 1.3

Field blanks // Break-trough samples						
Kind of samples	**Field blanks**			**Break-through samples**		
Date of sampling	**19/06/2007**	**22/06/2007**	**25/06/2007**	**21/06/2007**	**23/06/2007**	**26/06/2007**
E.ON sample designation	640276-1-B1	640276-2-B2	640276-1-B3	640276-2-2b	640276-2-4b	640276-2-6b
mas sample no.	07 0388 013	07 0388 014	07 0388 015	07 0388 016	07 0388 017	07 0388 018
Date of entry in the lab	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007	03/07/2007
Date of extr. standard addition	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of extraction	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007	06/07/2007
Date of clean-up	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007	10/07/2007
Date of GC/MS injection	28/07/2007	07/08/2007	28/07/2007	28/07/2007	28/07/2007	28/07/2007
Recovery Rates of Sampling Standards						
$^{13}C_{12}$-PCB 60 [%]	90	96	87	90	99	100
$^{13}C_{12}$-PCB 127 [%]	86	101	82	87	85	66
$^{13}C_{12}$-PCB 159 [%]	89	88	89	88	97	88
Recovery Rates of Extraction Standards						
$^{13}C_{12}$-PCB 77 [%]	86	81	91	91	94	81
$^{13}C_{12}$-PCB 81 [%]	87	96	96	96	109	95
$^{13}C_{12}$-PCB 105 [%]	87	100	102	104	110	93
$^{13}C_{12}$-PCB 114 [%]	91	94	106	103	103	96
$^{13}C_{12}$-PCB 118 [%]	78	73	98	92	95	90
$^{13}C_{12}$-PCB 123 [%]	93	101	97	101	102	93
$^{13}C_{12}$-PCB 126 [%]	68	61	77	96	102	94
$^{13}C_{12}$-PCB 156 [%]	113	116	109	105	97	106
$^{13}C_{12}$-PCB 157 [%]	105	105	108	102	109	108
$^{13}C_{12}$-PCB 167 [%]	110	116	95	101	107	114
$^{13}C_{12}$-PCB 169 [%]	88	105	82	94	94	88
$^{13}C_{12}$-PCB 189 [%]	94	87	83	83	93	99
$^{13}C_{12}$-PCB 28 [%]	79	77	75	73	80	83
$^{13}C_{12}$-PCB 52 [%]	63	75	73	73	79	81
$^{13}C_{12}$-PCB 101 [%]	79	84	88	84	90	82
$^{13}C_{12}$-PCB 138 [%]	85	94	96	88	88	92
$^{13}C_{12}$-PCB 153 [%]	88	85	94	81	82	90
$^{13}C_{12}$-PCB 180 [%]	74	81	78	83	82	87

Limits of Quantification

Annex 2

Dioxin-like PCB (WHO-PCB)	**ng/Nm³**
Non-ortho PCB	
PCB 77	**0.0002**
PCB 81	**0.0001**
PCB 126	**0.00005**
PCB 169	**0.0001**
Mono-ortho PCB	
PCB 105	**0.001**
PCB 114	**0.0002**
PCB 118	**0.002**
PCB 123	**0.0002**
PCB 156	**0.0002**
PCB 157	**0.0002**
PCB 167	**0.0002**
PCB 189	**0.0002**
WHO-TEQ excl. LOQ[a]	
WHO-TEQ incl. LOQ[b]	**0.00000667**
Marker PCB	**ng/Nm³**
PCB 28	**0.002**
PCB 52	**0.002**
PCB 101	**0.002**
PCB 153	**0.002**
PCB 138	**0.002**
PCB 180	**0.002**
Total 6 marker PCB excl. LOQ[a]	
Total 6 marker PCB incl. LOQ[b]	**0.012**

Concentration values [ng/Nm³] normalised to 0 °C, 101.3 kPa, dry flue gas, based on a average sample volume of 9 m³
As a rule, the limits of detection are below the limits of quantification by a factor of 3

a Totals and TEQs calculated including quantified congeners only

b TEQs calculated including the entire limit of quantification for non-quantified congeners

Measurement Uncertainty for Determination of PCB — Annex 3

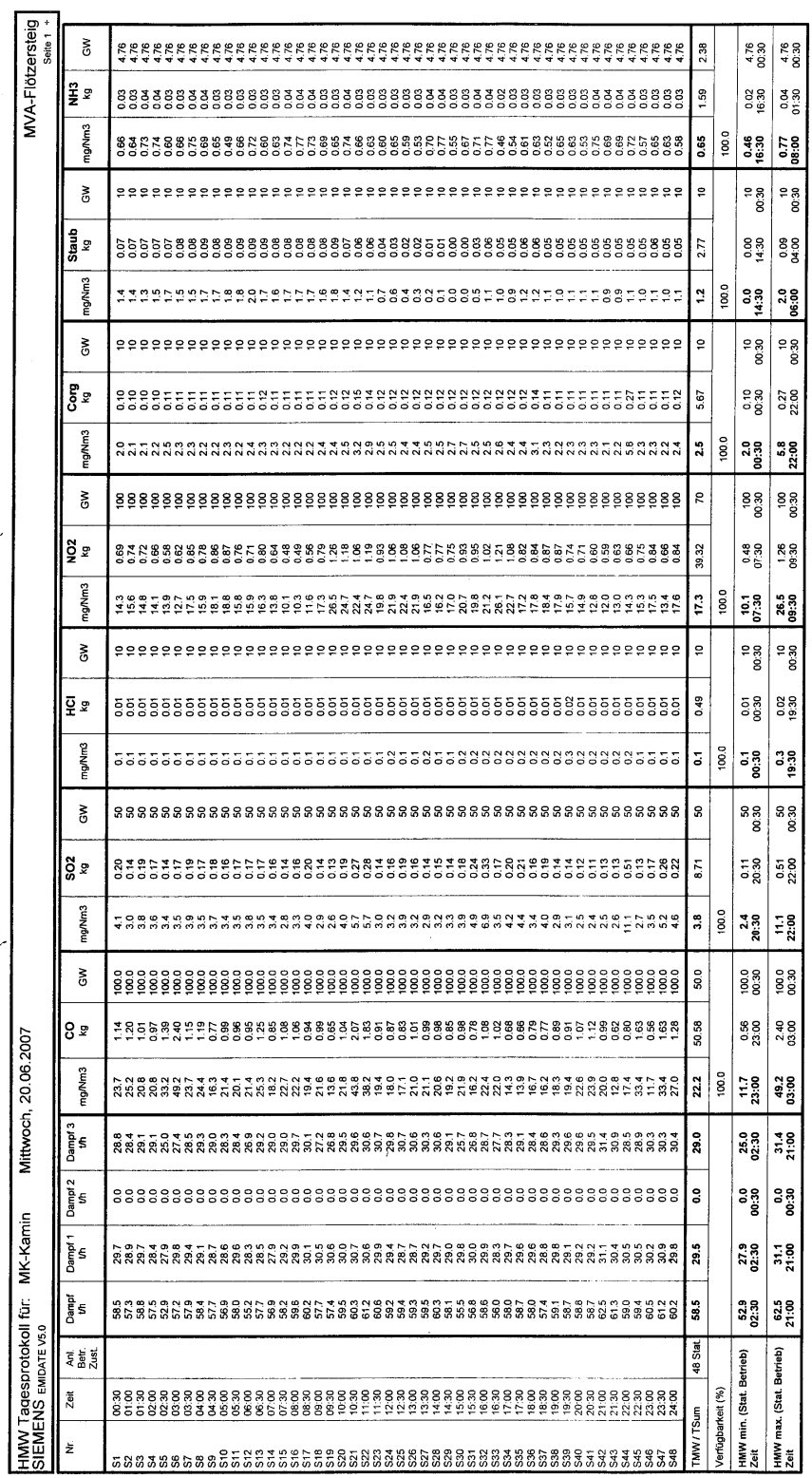
Uncertainty of Sampling:
(extended combined standard uncertainty according to GUM at k=2) **PCB: 5.6 %**

Uncertainty of analytics (extraction, clean-up and GC/MS):
(extended combined standard uncertainty according to GUM at k=2) **PCB: 11 %**

Uncertainty of overall procedure (sampling + analytics):
(extended combined standard uncertainty according to GUM at k=2) **PCB: 25 %**

Operating Data provided by the Plant Operator

Annex 4.1



HMW Tagesprotokoll für: MK-Kamin Mittwoch, 20.06.2007

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Seite 1 +

Nr	Zeit	Anl. Betr. Zust.	Dampf t/h	Dampf 1 t/h	Dampf 2 t/h	Dampf 3 t/h	CO mg/Nm3	CO kg	CO GW	SO2 mg/Nm3	SO2 kg	SO2 GW	HCl mg/Nm3	HCl kg	HCl GW	NO2 mg/Nm3	NO2 kg	NO2 GW	Corg mg/Nm3	Corg kg	Corg GW	Staub mg/Nm3	Staub kg	Staub GW	NH3 mg/Nm3	NH3 kg	NH3 GW
S1	00:30		58.5	29.7	0.0	28.8	23.7	1.14	100.0	4.1	0.20	50	0.1	0.01	10	14.9	0.69	100	2.0	0.10	10	1.4	0.07	10	0.66	0.03	4.76
S2	01:00		57.3	28.9		28.4	25.2	1.20	100.0	3.0	0.14	50	0.1	0.01	10	15.6	0.74	100	2.1	0.10	10	1.4	0.07	10	0.64	0.03	4.76
S3	01:30		58.8	29.7	0.0	29.1	20.8	1.01	100.0	3.8	0.19	50	0.1	0.01	10	14.8	0.72	100	2.1	0.10	10	1.3	0.07	10	0.73	0.04	4.76
S4	02:00		57.5	28.4	0.0	29.1	20.8	0.97	100.0	3.6	0.17	50	0.1	0.01	10	14.1	0.66	100	2.2	0.10	10	1.5	0.07	10	0.74	0.04	4.76
S5	02:30		52.9	27.9	0.0	25.0	33.2	1.39	100.0	3.4	0.14	50	0.1	0.01	10	13.9	0.58	100	2.5	0.11	10	1.7	0.07	10	0.60	0.03	4.76
S6	03:00		57.2	29.8	0.0	27.4	49.2	2.40	100.0	3.5	0.17	50	0.1	0.01	10	12.7	0.62	100	2.3	0.11	10	1.5	0.08	10	0.75	0.04	4.76
S7	03:30		57.9	29.4	0.0	28.5	22.7	1.15	100.0	3.9	0.19	50	0.1	0.01	10	17.5	0.85	100	2.3	0.11	10	1.5	0.08	10	0.75	0.04	4.76
S8	04:00		58.4	29.1	0.0	29.3	24.4	1.19	100.0	3.5	0.17	50	0.1	0.01	10	15.9	0.78	100	2.2	0.11	10	1.7	0.09	10	0.69	0.04	4.76
S9	04:30		56.7	28.7	0.0	28.0	21.4	0.99	100.0	3.7	0.18	50	0.1	0.01	10	18.1	0.86	100	2.2	0.11	10	1.7	0.08	10	0.65	0.03	4.76
S10	05:00		55.2	28.3	0.0	26.9	21.4	0.95	100.0	3.8	0.17	50	0.1	0.01	10	18.8	0.87	100	2.3	0.11	10	1.8	0.09	10	0.49	0.03	4.76
S11	05:30		58.0	28.5	0.0	28.4	20.1	0.96	100.0	3.5	0.17	50	0.1	0.01	10	16.5	0.76	100	2.2	0.11	10	1.8	0.09	10	0.66	0.03	4.76
S12	06:00		55.2	28.3	0.0	26.9	21.4	0.95	100.0	3.8	0.17	50	0.1	0.01	10	15.9	0.71	100	2.2	0.11	10	2.0	0.09	10	0.72	0.03	4.76
S13	06:30		57.7	28.5	0.0	29.2	25.3	1.25	100.0	3.5	0.17	50	0.1	0.01	10	16.3	0.80	100	2.3	0.12	10	1.7	0.09	10	0.60	0.03	4.76
S14	07:00		56.9	27.9	0.0	29.0	18.2	0.85	100.0	3.4	0.16	50	0.1	0.01	10	13.8	0.64	100	2.3	0.11	10	1.6	0.08	10	0.63	0.03	4.76
S15	07:30		58.2	29.2	0.0	29.0	22.7	1.08	100.0	2.8	0.14	50	0.1	0.01	10	10.1	0.48	100	2.2	0.11	10	1.7	0.08	10	0.74	0.04	4.76
S16	08:00		59.5	29.9	0.0	29.7	22.2	1.06	100.0	3.3	0.16	50	0.1	0.01	10	10.3	0.49	100	2.2	0.11	10	1.7	0.08	10	0.77	0.04	4.76
S17	08:30		60.2	30.1	0.0	30.1	19.4	0.94	100.0	4.0	0.20	50	0.1	0.01	10	11.6	0.56	100	2.2	0.11	10	1.7	0.08	10	0.73	0.04	4.76
S18	09:00		57.7	30.5	0.0	27.2	23.6	0.89	100.0	2.9	0.14	50	0.1	0.01	10	17.3	0.79	100	2.4	0.11	10	1.6	0.08	10	0.69	0.03	4.76
S19	09:30		59.5	30.0	0.0	29.5	21.8	1.04	100.0	4.6	0.13	50	0.1	0.01	10	26.5	1.28	100	2.4	0.12	10	1.8	0.09	10	0.65	0.03	4.76
S20	10:00		60.3	30.7	0.0	29.6	43.8	2.07	100.0	5.7	0.27	50	0.1	0.01	10	22.4	1.06	100	3.2	0.15	10	1.4	0.07	10	0.74	0.04	4.76
S21	10:30		61.2	30.6	0.0	30.6	38.2	1.83	100.0	5.7	0.28	50	0.1	0.01	10	24.7	1.19	100	2.9	0.14	10	1.1	0.05	10	0.63	0.03	4.76
S22	11:00		60.6	29.9	0.0	30.7	19.4	0.91	100.0	3.0	0.14	50	0.1	0.01	10	19.8	0.93	100	2.5	0.12	10	0.7	0.04	10	0.60	0.03	4.76
S23	11:30		59.2	29.4	0.0	29.8	18.0	0.87	100.0	3.2	0.16	50	0.2	0.01	10	21.9	1.06	100	2.5	0.12	10	0.6	0.03	10	0.65	0.03	4.76
S24	12:00		59.4	28.7	0.0	30.7	17.1	0.83	100.0	3.9	0.19	50	0.1	0.01	10	22.4	1.08	100	2.4	0.12	10	0.4	0.02	10	0.59	0.03	4.76
S25	12:30		59.3	28.7	0.0	30.6	21.0	1.01	100.0	3.2	0.16	50	0.1	0.01	10	21.9	1.06	100	2.4	0.12	10	0.3	0.02	10	0.53	0.03	4.76
S26	13:00		59.5	29.2	0.0	30.3	20.1	0.98	100.0	2.9	0.14	50	0.2	0.01	10	16.5	0.77	100	2.5	0.12	10	0.2	0.01	10	0.70	0.04	4.76
S27	13:30		60.3	29.0	0.0	30.6	19.2	0.85	100.0	3.3	0.15	50	0.1	0.01	10	16.2	0.75	100	2.5	0.12	10	0.1	0.01	10	0.77	0.04	4.76
S28	14:00		58.1	29.1	0.0	29.1	21.8	0.98	100.0	3.9	0.18	50	0.2	0.01	10	20.7	0.93	100	2.7	0.12	10	0.0	0.00	10	0.55	0.03	4.76
S29	14:30		55.5	29.8	0.0	25.7	21.9	0.98	100.0	3.9	0.18	50	0.2	0.01	10	19.8	0.95	100	2.5	0.12	10	0.0	0.00	10	0.57	0.03	4.76
S30	15:00		56.8	30.0	0.0	26.8	16.2	0.78	100.0	4.9	0.24	50	0.2	0.01	10	21.2	1.02	100	2.5	0.12	10	0.5	0.03	10	0.71	0.04	4.76
S31	15:30		58.6	29.9	0.0	28.7	22.4	1.08	100.0	6.9	0.33	50	0.2	0.01	10	26.1	1.21	100	2.6	0.12	10	1.1	0.06	10	0.77	0.04	4.76
S32	16:00		56.0	28.3	0.0	27.7	22.0	1.02	100.0	3.5	0.17	50	0.2	0.01	10	22.7	1.08	100	2.4	0.12	10	1.0	0.05	10	0.46	0.02	4.76
S33	16:30		58.0	29.7	0.0	28.3	14.3	0.68	100.0	4.2	0.20	50	0.2	0.01	10	17.8	0.84	100	2.4	0.12	10	0.9	0.05	10	0.54	0.03	4.76
S34	17:00		58.7	29.6	0.0	29.1	13.9	0.66	100.0	4.4	0.21	50	0.2	0.01	10	17.2	0.82	100	2.4	0.12	10	1.2	0.06	10	0.61	0.03	4.76
S35	17:30		57.0	28.6	0.0	28.4	16.7	0.79	100.0	3.4	0.16	50	0.2	0.01	10	18.4	0.84	100	3.1	0.14	10	1.2	0.06	10	0.63	0.03	4.76
S36	18:00		57.4	28.8	0.0	28.6	19.2	0.89	100.0	4.0	0.19	50	0.2	0.01	10	18.9	0.87	100	2.3	0.11	10	1.1	0.05	10	0.52	0.03	4.76
S37	18:30		58.7	29.1	0.0	29.6	19.4	0.91	100.0	3.1	0.14	50	0.3	0.02	10	15.7	0.74	100	2.2	0.11	10	1.0	0.05	10	0.65	0.03	4.76
S38	19:00		59.1	29.8	0.0	29.3	22.6	1.07	100.0	2.5	0.12	50	0.2	0.01	10	14.9	0.71	100	2.3	0.11	10	1.1	0.05	10	0.63	0.03	4.76
S39	19:30		58.7	29.6	0.0	29.6	23.9	1.12	100.0	2.4	0.11	50	0.2	0.01	10	12.8	0.60	100	2.3	0.11	10	1.1	0.05	10	0.53	0.03	4.76
S40	20:00		58.8	29.2	0.0	29.5	20.0	0.99	100.0	2.5	0.13	50	0.2	0.01	10	12.0	0.59	100	2.1	0.11	10	0.9	0.05	10	0.75	0.04	4.76
S41	20:30		58.7	29.2	0.0	29.5	12.8	0.62	100.0	2.6	0.13	50	0.2	0.01	10	13.0	0.63	100	2.2	0.11	10	0.9	0.05	10	0.69	0.04	4.76
S42	21:00		62.5	31.1	0.0	31.4	17.4	0.80	100.0	11.1	0.51	50	0.2	0.01	10	14.3	0.66	100	5.6	0.27	10	1.1	0.05	10	0.72	0.04	4.76
S43	21:30		61.3	30.4	0.0	30.9	33.4	1.63	100.0	2.7	0.13	50	0.1	0.01	10	15.3	0.75	100	2.3	0.11	10	1.0	0.05	10	0.57	0.03	4.76
S44	22:00		59.0	30.5	0.0	28.5	24.1	1.17	100.0	5.5	0.26	50	0.1	0.01	10	17.5	0.84	100	2.3	0.11	10	1.1	0.06	10	0.65	0.03	4.76
S45	22:30		60.4	30.5	0.0	30.3	33.4	1.63	100.0	5.5	0.27	50	0.1	0.01	10	13.4	0.66	100	2.2	0.11	10	1.0	0.05	10	0.63	0.03	4.76
S46	23:00		61.2	30.9	0.0	30.3	27.0	1.28	100.0	4.6	0.22	50	0.1	0.01	10	17.6	0.84	100	2.4	0.12	10	1.1	0.05	10	0.58	0.03	4.76
S47	23:30		60.2	29.8	0.0	30.4																					
S48	24:00																										
TMW / TSum		48 Stat.	**58.5**	**29.5**	**0.0**	**29.0**	**22.2**	**50.58**	**50.0**	**3.8**	**8.71**	**50**	**0.1**	**0.49**	**10**	**17.3**	**39.32**	**70**	**2.5**	**5.67**	**10**	**1.2**	**2.77**	**10**	**0.65**	**1.59**	**2.38**
Verfügbarkeit (%)							100.0			100.0			100.0			100.0			100.0			100.0			100.0		
HMW min. (Stat. Betrieb)			**52.9**	**27.9**	**0.0**	**25.0**	**11.7**	**0.56**	**100.0**	**2.4**	**0.11**	**50**	**0.1**	**0.01**	**10**	**10.1**	**0.48**	**100**	**2.0**	**0.10**	**10**	**0.0**	**0.00**	**10**	**0.46**	**0.02**	**4.76**
Zeit			**02:30**	**02:30**	**00:30**	**02:30**	**23:00**	**23:00**	**00:30**	**20:30**	**20:30**	**00:30**	**00:30**	**00:30**	**00:30**	**07:30**	**07:30**	**00:30**	**00:30**	**00:30**	**00:30**	**14:30**	**14:30**	**00:30**	**16:30**	**16:30**	**00:30**
HMW max. (Stat. Betrieb)			**62.5**	**31.1**	**0.0**	**31.4**	**49.2**	**2.40**	**100.0**	**11.1**	**0.51**	**50**	**0.3**	**0.02**	**10**	**26.5**	**1.26**	**100**	**5.8**	**0.27**	**10**	**2.0**	**0.09**	**10**	**0.77**	**0.04**	**4.76**
Zeit			**21:00**	**21:00**	**00:30**	**21:00**	**03:00**	**03:00**	**00:30**	**22:00**	**22:00**	**00:30**	**19:30**	**19:30**	**00:30**	**09:30**	**09:30**	**00:30**	**22:00**	**22:00**	**00:30**	**06:00**	**04:00**	**00:30**	**08:00**	**01:30**	**00:30**

TMW Bemerkung:

Zeichenerklärung:

Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G: A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 1,2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:16:10

CEN Validation Measurements of PCB according to TS 1948-4

Operating Data provided by the Plant Operator

Annex 4.2

HMW Tagesprotokoll für: MK-Kamin Mittwoch, 20.06.2007 MVA-Flötzersteig

SIEMENS EMIDATE V5.0 Seite 2

Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	GW	pn W1/L1 ph	pn W1/L2 ph	pn W1/L3 ph	O2 korr %	Faktor_korr	CO2 %	CO2 Masse t	CO/CO2 t	CO/CO2 GW t	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	bWL ges. MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	00:30		2.27	0.22	50.0	1.77	2.14	1.82	13.1	F	6.9	8.30	0.00022	0.002	13.1	-0.4	17.7	131.5	96.0	47.9	58.9	10.7	23.6	
S2	01:00		2.40	0.23	50.0	1.82	2.14	1.81	13.2	F	6.9	8.30	0.00023	0.002	13.2	-0.3	18.1	132.4	95.1	47.0	68.4	3.1	22.6	
S3	01:30		2.66	0.26	50.0	1.79	2.15	1.78	13.1	F	7.0	8.46	0.00019	0.002	13.1	-0.3	18.0	132.7	97.5	48.1	70.0	8.0	22.6	
S4	02:00		2.64	0.25	50.0	1.77	2.15	1.81	13.5	F	6.6	8.06	0.00019	0.002	13.5	-0.2	17.4	132.3	93.1	47.1	78.4	6.0	21.9	
S5	02:30		1.99	0.17	50.0	1.83	2.15	1.82	14.2	F	6.0	7.22	0.00030	0.002	14.2	-0.3	16.9	131.9	83.5	43.4	65.0	7.5	21.9	
S6	03:00		1.60	0.16	50.0	1.81	2.15	1.81	13.2	F	6.7	8.25	0.00046	0.002	13.2	-0.3	17.9	132.3	97.3	46.9	60.5	9.0	21.6	
S7	03:30		1.46	0.14	50.0	1.80	2.15	1.80	13.3	F	6.7	8.34	0.00022	0.002	13.3	-0.2	18.1	132.5	97.1	47.5	59.9	10.1	21.1	
S8	04:00		1.46	0.14	50.0	1.81	2.15	1.81	13.1	F	6.5	8.10	0.00015	0.002	13.1	-0.3	18.2	132.3	97.4	47.9	61.8	8.3	20.6	
S9	04:30		1.04	0.10	50.0	1.81	2.15	1.80	13.5	F	6.6	8.29	0.00018	0.002	13.5	-0.2	17.5	132.3	94.4	47.4	62.8	8.1	20.6	
S10	05:00		1.28	0.12	50.0	1.80	2.15	1.80	13.7	F	6.4	8.03	0.00020	0.002	13.7	-0.2	17.7	132.4	92.6	46.6	62.1	9.2	20.0	
S11	05:30		1.43	0.14	50.0	1.80	2.15	1.81	13.5	F	6.6	8.29	0.00018	0.002	13.5	-0.2	17.3	132.7	95.6	47.6	65.7	7.3	20.0	
S12	06:00		1.54	0.14	50.0	1.79	2.15	1.80	14.0	F	6.2	7.71	0.00019	0.002	14.0	-0.2	16.8	132.7	88.9	45.3	68.0	5.5	19.8	
S13	06:30		1.67	0.18	50.0	1.81	2.14	1.79	13.3	F	6.7	8.46	0.00023	0.002	13.3	-0.2	18.2	133.0	98.3	47.4	169.7	5.9	20.3	
S14	07:00		1.55	0.14	50.0	1.81	2.15	1.80	13.3	F	6.8	8.00	0.00016	0.002	13.3	-0.5	17.8	132.5	92.6	46.7	171.6	9.8	20.2	
S15	07:30		1.42	0.13	50.0	1.74	2.15	1.77	12.7	F	7.2	8.12	0.00021	0.002	12.7	-0.7	18.2	132.1	95.0	47.7	171.1	9.4	20.7	
S16	08:00		1.74	0.17	50.0	1.71	2.15	1.77	12.9	F	7.1	8.24	0.00020	0.002	12.9	-0.5	17.5	132.1	95.4	48.9	164.3	8.9	21.7	
S17	08:30		1.99	0.19	50.0	1.83	2.15	1.78	12.8	F	7.0	8.27	0.00018	0.002	12.8	-0.6	17.0	132.0	96.7	49.4	155.5	11.6	22.4	
S18	09:00		0.91	0.08	50.0	1.77	2.16	1.81	13.7	F	6.4	7.85	0.00020	0.002	13.7	-0.3	17.1	130.9	91.5	46.7	154.6	11.8	23.4	
S19	09:30		1.05	0.10	50.0	1.81	2.16	1.82	14.3	F	5.8	8.14	0.00013	0.002	14.3	0.3	16.2	132.8	95.4	47.0	164.4	12.3	23.9	
S20	10:00		1.09	0.10	50.0	1.77	2.16	1.80	14.5	F	5.7	8.27	0.00020	0.002	14.5	0.5	15.1	132.7	95.4	48.8	154.6	10.6	24.8	
S21	10:30		0.83	0.08	50.0	1.81	2.16	1.74	14.6	F	5.5	8.04	0.00041	0.002	14.6	0.5	13.7	132.0	94.5	49.4	156.0	10.1	25.6	
S22	11:00		1.08	0.10	50.0	1.77	2.16	1.69	14.5	F	5.8	8.19	0.00035	0.002	14.5	0.5	14.4	132.2	95.9	50.2	169.0	10.4	26.0	
S23	11:30		0.98	0.09	50.0	1.83	2.16	1.83	14.3	F	5.8	7.98	0.00018	0.002	14.3	0.3	15.2	129.3	93.2	49.6	161.7	11.0	27.2	
S24	12:00		0.93	0.09	50.0	1.81	2.16	1.83	14.1	F	6.0	8.19	0.00017	0.002	14.1	0.4	16.3	128.7	96.4	48.5	174.1	9.5	27.9	
S25	12:30		1.28	0.12	50.0	1.79	2.16	1.83	14.1	F	6.0	8.22	0.00016	0.002	14.1	0.4	16.8	128.7	96.3	48.7	188.9	11.6	28.5	
S26	13:00		1.09	0.11	50.0	1.79	2.16	1.83	14.1	F	6.0	8.25	0.00019	0.002	14.1	0.4	16.6	128.6	96.7	48.7	185.8	10.2	28.8	
S27	13:30		0.93	0.09	50.0	1.76	2.16	1.82	14.3	F	5.8	7.96	0.00019	0.002	14.3	0.4	15.5	128.9	95.4	48.9	178.0	10.4	29.7	
S28	14:00		0.87	0.08	50.0	1.82	2.16	1.81	14.2	F	5.7	7.86	0.00019	0.002	14.2	0.4	15.1	129.3	94.6	49.5	154.4	10.2	30.1	
S29	14:30		0.22	0.02	50.0	1.83	2.17	1.81	14.6	F	5.6	7.58	0.00018	0.002	14.6	0.4	14.5	129.4	88.4	47.7	163.5	7.2	30.9	
S30	15:00		0.01	0.00	50.0	1.82	2.17	1.82	14.6	F	5.6	7.73	0.00020	0.002	14.6	0.5	15.7	129.2	89.2	45.5	148.0	9.2	31.4	
S31	15:30		0.05	0.00	50.0	1.81	2.17	1.79	14.1	F	6.1	8.28	0.00015	0.002	14.1	0.5	16.2	129.0	95.7	46.6	185.4	6.0	31.7	
S32	16:00		0.14	0.01	50.0	1.77	2.17	1.80	14.1	F	6.1	8.32	0.00020	0.002	14.1	0.5	16.5	128.6	96.0	48.0	181.0	8.6	31.9	
S33	16:30		0.31	0.03	50.0	1.82	2.17	1.80	14.3	F	5.8	7.99	0.00020	0.002	14.3	0.5	16.8	128.3	92.9	45.9	179.4	8.1	32.2	
S34	17:00		1.24	0.02	50.0	1.78	2.17	1.78	14.2	F	5.9	8.10	0.00013	0.002	14.2	0.5	16.5	128.1	94.9	47.5	131.9	7.9	31.9	
S35	17:30		1.58	0.15	50.0	1.81	2.17	1.82	14.2	F	5.8	8.02	0.00013	0.002	14.2	0.4	16.0	130.0	94.6	48.2	158.4	9.7	31.5	
S36	18:00		3.87	0.36	50.0	1.82	2.17	1.82	14.3	F	5.8	8.04	0.00015	0.002	14.3	0.5	16.1	132.3	94.6	47.2	141.2	8.5	31.9	
S37	18:30		4.71	0.45	50.0	1.81	2.18	1.82	14.3	F	5.8	8.12	0.00015	0.002	14.3	0.5	16.4	132.7	94.6	47.1	163.1	8.6	31.6	
S38	19:00		6.47	0.63	50.0	1.78	2.18	1.79	14.1	F	6.0	8.38	0.00017	0.002	14.1	0.5	16.9	132.7	97.3	48.4	162.8	9.1	31.7	
S39	19:30		6.25	0.59	50.0	1.81	2.18	1.79	14.3	F	5.8	7.99	0.00018	0.002	14.3	0.4	15.9	132.5	94.0	43.2	206.6	12.5	31.0	
S40	20:00		6.11	0.58	50.0	1.80	2.18	1.81	14.3	F	5.8	8.06	0.00021	0.002	14.3	0.4	15.7	132.4	94.5	43.2	199.4	12.1	30.7	
S41	20:30		4.63	0.43	50.0	1.79	2.18	1.81	14.3	F	5.8	7.95	0.00022	0.002	14.3	0.4	14.9	132.2	93.7	48.1	200.1	8.4	30.2	
S42	21:00		4.06	0.40	50.0	1.80	2.18	1.77	14.0	F	5.9	8.19	0.00019	0.002	14.0	0.5	14.9	132.3	98.3	51.2	199.8	6.6	29.5	
S43	21:30		3.53	0.34	50.0	1.79	2.18	1.77	14.1	F	5.8	7.99	0.00012	0.002	14.1	0.4	14.7	132.1	96.5	50.3	165.9	6.9	29.0	
S44	22:00		4.95	0.62	50.0	1.81	2.18	1.82	14.4	F	5.5	7.86	0.00015	0.002	14.4	0.3	14.8	132.3	97.7	48.3	158.8	7.6	28.0	
S45	22:30		0.45	0.04	50.0	1.80	2.19	1.82	14.0	F	6.1	8.40	0.00030	0.002	14.0	0.4	16.1	132.2	97.4	48.7	171.4	5.5	27.3	
S46	23:00		2.79	0.27	50.0	1.80	2.20	1.80	14.2	F	6.0	8.27	0.00011	0.002	14.2	0.5	15.8	131.3	95.8	49.6	164.8	5.2	26.6	
S47	23:30		2.52	0.25	50.0	1.81	2.20	1.74	14.0	F	5.9	8.15	0.00032	0.002	14.0	0.4	15.1	131.4	97.7	50.3	141.0	3.4	26.6	
S48	24:00		3.99	0.34	50.0	1.80	2.20	1.82	14.3	F	5.9	8.15	0.00024	0.002	14.3	0.5	15.5	131.7	94.7	48.3	137.4	2.6	26.3	
TMW / TSum		48 Stat.	2.15	0.20	50.0	1.80	2.16	1.80	13.9	F	6.2	388.87	0.00020	0.002	13.9	0.2	16.4	131.3	94.6	48.0	141.8	8.5	26.2	
Verfügbarkeit (%)			100.0								100.0		100.0		100.0		100.0		100.0					
HMW min. (Stat. Betrieb)			0.01	0.00	50.0	1.71	2.14	1.69	12.7		5.5	7.22	0.00011	0.002	12.7	-0.7	13.7	128.1	83.5	43.4	58.9	2.6	19.8	
Zeit			15:00	15:00	00:30	08:00	00:30	11:00	07:30		10:30	02:30	23:00	00:30	07:30	07:30	10:30	17:00	02:30	02:30	00:30	24:00	06:00	
HMW max. (Stat. Betrieb)			6.75	0.63	50.0	1.83	2.20	1.83	14.6		7.2	8.46	0.00046	0.002	14.6	0.5	18.2	133.0	98.3	51.2	206.6	12.5	32.2	
Zeit			22:00	19:00	00:30	02:30	23:00	11:30	10:30		07:30	01:30	03:00	00:30	10:30	10:00	04:00	06:30	06:30	21:00	19:30	19:30	16:30	

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen

Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb

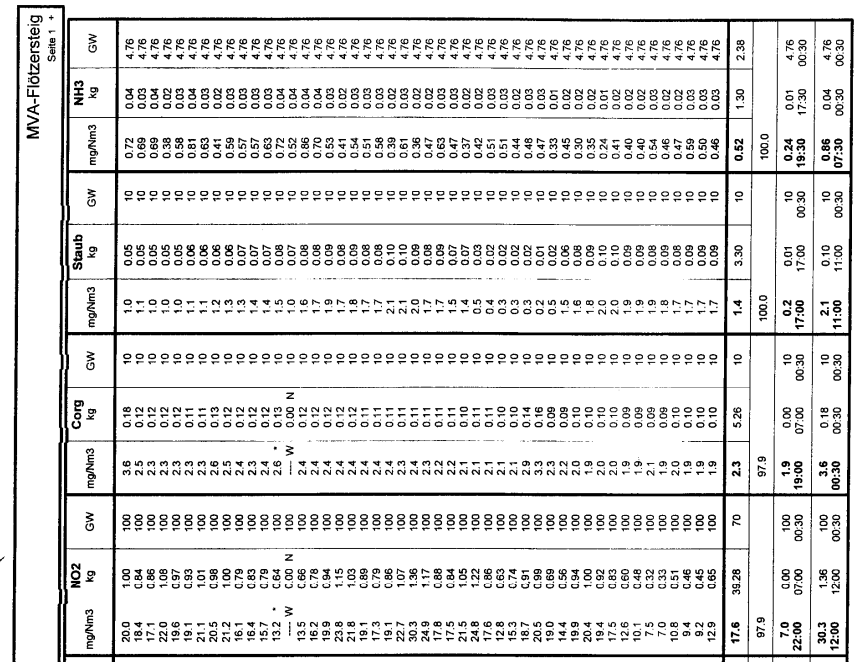
G, A, B: Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1,2-fach, 2-fach); g, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1,2-fach, 2-fach)

F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:16:12

Operating Data provided by the Plant Operator

Annex 4.3



HMW Tagesprotokoll für: MK-Kamin Donnerstag, 21.06.2007 — MVA-Flötzersteig

SIEMENS EMIDATE V5.0 — Seite 1

Nr.	Zeit	And. Betr. Zust.	Dampf th	Dampf 1 th	Dampf 2 th	Dampf 3 th	CO kg	CO mg/Nm3	CO GW	SO2 kg	SO2 mg/Nm3	SO2 GW	HCl kg	HCl mg/Nm3	HCl GW	NO2 kg	NO2 mg/Nm3	NO2 GW	Corg kg	Corg mg/Nm3	Corg GW	Staub kg	Staub mg/Nm3	Staub GW	NH3 kg	NH3 mg/Nm3	NH3 GW
S1	00:30		61.2	30.6	0.0	30.6	1.22	24.1	100.0	0.32	6.4	50	0.01	0.1	10	1.00	20.0	100	0.18	3.6	10	0.05	1.0	10	0.04	0.72	4.76
S2	01:00		56.9	29.6	0.0	27.3	0.72	15.8	100.0	0.17	3.8	50	0.01	0.1	10	0.84	18.4	100	0.12	2.5	10	0.05	1.1	10	0.03	0.69	4.76
S3	01:30		58.8	29.6	0.0	29.2	1.40	28.0	100.0	0.22	4.3	50	0.01	0.1	10	0.86	17.1	100	0.12	2.3	10	0.05	1.0	10	0.04	0.69	4.76
S4	02:00		59.2	29.9	0.0	29.3	0.76	15.4	100.0	0.20	4.0	50	0.01	0.1	10	1.08	22.0	100	0.12	2.3	10	0.05	1.0	10	0.02	0.38	4.76
S5	02:30		59.8	30.0	0.0	29.8	0.63	12.7	100.0	0.20	4.1	50	0.01	0.1	10	0.97	19.6	100	0.12	2.3	10	0.05	1.0	10	0.03	0.58	4.76
S6	03:00		59.5	30.1	0.0	29.5	0.59	12.0	100.0	0.22	4.4	50	0.01	0.1	10	0.93	19.1	100	0.12	2.3	10	0.06	1.1	10	0.04	0.81	4.76
S7	03:30		59.3	30.1	0.0	29.2	0.69	14.0	100.0	0.20	4.2	50	0.01	0.1	10	1.01	20.1	100	0.11	2.3	10	0.06	1.1	10	0.03	0.63	4.76
S8	04:00		58.4	29.5	0.0	28.9	0.78	16.4	100.0	0.20	4.2	50	0.01	0.1	10	0.98	20.5	100	0.11	2.6	10	0.06	1.2	10	0.02	0.41	4.76
S9	04:30		57.9	29.6	0.0	28.3	0.74	15.7	100.0	0.18	3.8	50	0.01	0.1	10	0.98	21.2	100	0.12	2.5	10	0.06	1.3	10	0.03	0.59	4.76
S10	05:00		58.5	30.6	0.0	27.9	0.90	18.3	100.0	0.24	4.8	50	0.01	0.1	10	0.79	16.1	100	0.12	2.5	10	0.06	1.3	10	0.03	0.57	4.76
S11	05:30		60.8	30.4	0.0	30.4	1.30	25.7	100.0	0.29	5.7	50	0.01	0.1	10	0.83	16.4	100	0.12	2.3	10	0.07	1.4	10	0.03	0.57	4.76
S12	06:00		61.4	30.8	0.0	30.6	1.24	24.6	100.0	0.19	3.8	50	0.01	0.1	10	0.79	15.7	100	0.12	2.4	10	0.07	1.4	10	0.03	0.63	4.76
S13	06:30		60.2	29.7	0.0	30.5	0.63	12.9	100.0	0.18	3.7	50	0.01	0.1	10	0.64	13.2	100	0.13	2.6	10	0.08	1.5	10	0.04	0.72	4.76
S14	07:00		59.2	28.0	0.0	30.2	0.00	0.00	100.0	0.00	0.00	50	0.00	0.00	10	0.00	0.00	100	0.00	0.00	10	0.07	1.0	10	0.04	0.52	4.76
S15	07:30		58.8	28.7	0.0	30.1	1.06	21.7	100.0	0.25	5.0	50	0.00	0.00	10	0.66	13.5	100	0.12	2.4	10	0.08	1.6	10	0.04	0.86	4.76
S16	08:00		58.2	28.0	0.0	30.2	0.92	17.8	100.0	0.18	3.7	50	0.00	0.00	10	0.78	16.2	100	0.12	2.4	10	0.07	1.4	10	0.04	0.70	4.76
S17	08:30		58.6	28.6	0.0	30.0	1.26	26.9	100.0	0.22	4.7	50	0.00	0.00	10	0.94	19.9	100	0.12	2.4	10	0.06	1.3	10	0.03	0.53	4.76
S18	09:00		59.3	28.8	0.0	30.5	0.87	17.9	100.0	0.23	4.7	50	0.00	0.00	10	0.73	14.9	100	0.12	2.4	10	0.06	1.3	10	0.02	0.41	4.76
S19	09:30		60.0	29.2	0.0	30.8	0.67	14.2	100.0	0.18	3.7	50	0.00	0.00	10	1.03	21.8	100	0.12	2.4	10	0.06	1.3	10	0.03	0.54	4.76
S20	10:00		59.8	29.4	0.0	30.4	0.87	18.6	100.0	0.17	3.5	50	0.00	0.00	10	0.89	19.1	100	0.12	2.4	10	0.08	1.8	10	0.03	0.64	4.76
S21	10:30		59.5	29.6	0.0	29.9	0.83	18.1	100.0	0.27	5.9	50	0.00	0.00	10	0.79	17.3	100	0.11	2.4	10	0.08	1.7	10	0.03	0.58	4.76
S22	11:00		59.9	29.4	0.0	30.5	1.33	29.6	100.0	0.34	7.6	50	0.00	0.00	10	0.86	19.1	100	0.11	2.4	10	0.08	1.7	10	0.03	0.58	4.76
S23	11:30		59.3	29.7	0.0	30.6	1.22	25.8	100.0	0.19	4.0	50	0.00	0.00	10	1.07	22.7	100	0.11	2.3	10	0.10	2.1	10	0.03	0.61	4.76
S24	12:00		57.1	28.3	0.0	27.8	0.89	15.3	100.0	0.14	3.2	50	0.00	0.00	10	1.36	30.3	100	0.11	2.4	10	0.10	2.1	10	0.02	0.36	4.76
S25	12:30		57.0	28.2	0.0	28.8	0.89	17.0	100.0	0.22	4.6	50	0.00	0.00	10	1.17	24.9	100	0.11	2.3	10	0.09	2.0	10	0.02	0.47	4.76
S26	13:00		60.2	29.5	0.0	30.7	1.31	26.5	100.0	0.22	4.5	50	0.00	0.00	10	0.91	17.8	100	0.11	2.3	10	0.08	1.7	10	0.03	0.47	4.76
S27	13:30		59.8	29.4	0.0	30.4	1.36	28.3	100.0	0.17	3.4	50	0.00	0.00	10	0.84	17.5	100	0.11	2.2	10	0.09	1.7	10	0.03	0.63	4.76
S28	14:00		59.8	29.3	0.0	30.5	1.04	21.4	100.0	0.22	4.5	50	0.00	0.00	10	1.05	21.5	100	0.10	2.1	10	0.07	1.5	10	0.03	0.47	4.76
S29	14:30		59.5	29.3	0.0	30.2	0.83	16.9	100.0	0.18	3.7	50	0.00	0.00	10	1.22	24.8	100	0.11	2.1	10	0.07	1.4	10	0.02	0.47	4.76
S30	15:00		60.1	29.6	0.0	30.5	0.87	17.7	100.0	0.21	4.2	50	0.00	0.00	10	0.86	17.6	100	0.11	2.1	10	0.07	1.4	10	0.02	0.47	4.76
S31	15:30		59.5	29.4	0.0	30.1	1.25	25.6	100.0	0.20	4.1	50	0.00	0.00	10	0.63	12.8	100	0.10	2.1	10	0.07	1.4	10	0.03	0.51	4.76
S32	16:00		59.0	29.6	0.0	30.4	1.13	23.3	100.0	0.14	3.0	50	0.00	0.00	10	0.74	15.3	100	0.10	2.1	10	0.07	1.4	10	0.02	0.44	4.76
S33	16:30		59.3	29.6	0.0	30.3	0.79	16.2	100.0	0.14	2.9	50	0.00	0.00	10	0.91	18.7	100	0.14	2.9	10	0.07	1.4	10	0.03	0.48	4.76
S34	17:00		60.8	29.8	0.0	31.0	1.13	22.3	100.0	0.22	4.5	50	0.00	0.00	10	0.99	20.5	100	0.16	3.3	10	0.07	1.4	10	0.03	0.47	4.76
S35	17:30		52.1	26.1	0.0	26.0	0.67	23.9	100.0	0.14	3.9	50	0.00	0.00	10	0.68	15.0	100	0.09	2.3	10	0.02	0.5	10	0.01	0.33	4.76
S36	18:00	AA	45.8	24.6	0.0	21.2	0.94	23.7	100.0	0.11	2.7	50	0.00	0.00	10	0.58	14.4	100	0.09	2.2	10	0.06	1.5	10	0.02	0.45	4.76
S37	18:30		56.9	29.1	0.0	27.8	1.37	28.8	100.0	0.19	4.0	50	0.00	0.00	10	0.94	19.9	100	0.10	2.2	10	0.06	1.5	10	0.02	0.45	4.76
S38	19:00		59.0	29.2	0.0	29.8	1.81	36.8	100.0	0.19	3.9	50	0.00	0.00	10	0.92	20.4	100	0.10	1.9	10	0.08	1.8	10	0.03	0.70	4.76
S39	19:30		58.8	28.4	0.0	29.6	0.84	17.7	100.0	0.14	3.1	50	0.00	0.00	10	0.92	19.4	100	0.10	2.0	10	0.10	2.0	10	0.02	0.35	4.76
S40	20:00		57.0	27.4	0.0	29.6	0.56	11.9	100.0	0.14	3.0	50	0.00	0.00	10	0.83	17.5	100	0.10	2.0	10	0.10	2.0	10	0.01	0.25	4.76
S41	20:30		57.3	28.8	0.0	28.5	0.94	19.9	100.0	0.13	2.7	50	0.00	0.00	10	0.60	12.6	100	0.09	1.9	10	0.09	1.9	10	0.02	0.41	4.76
S42	21:00		58.3	28.3	0.0	30.0	1.07	22.3	100.0	0.17	3.5	50	0.00	0.00	10	0.48	10.1	100	0.09	1.9	10	0.09	1.9	10	0.02	0.40	4.76
S43	21:30		53.8	23.6	0.0	30.2	0.71	15.5	100.0	0.13	2.8	50	0.00	0.00	10	0.32	7.5	100	0.09	2.1	10	0.09	1.9	10	0.02	0.40	4.76
S44	22:00		56.3	26.2	0.0	30.1	1.38	29.4	100.0	0.11	2.3	50	0.00	0.00	10	0.53	12.0	100	0.09	1.9	10	0.08	1.8	10	0.03	0.54	4.76
S45	22:30		58.4	28.5	0.0	29.9	0.91	19.2	100.0	0.13	2.8	50	0.00	0.00	10	0.51	10.8	100	0.09	1.9	10	0.09	1.8	10	0.03	0.46	4.76
S46	23:00		59.9	29.8	0.0	30.0	0.92	18.8	100.0	0.14	3.0	50	0.00	0.00	10	0.46	9.4	100	0.10	1.9	10	0.08	1.7	10	0.02	0.47	4.76
S47	23:30		60.5	30.1	0.0	30.4	1.42	28.9	100.0	0.13	2.6	50	0.00	0.00	10	0.45	9.2	100	0.10	1.9	10	0.09	1.7	10	0.02	0.41	4.76
S48	24.00		60.7	30.2	0.0	30.5	1.18	23.6	100.0	0.13	2.5	50	0.00	0.00	10	0.65	12.9	100	0.10	1.9	10	0.09	1.7	10	0.03	0.46	4.76
TMW / TSum	47 Stat.		**58.9**	**29.2**	**0.0**	**29.7**	**20.7**	**46.60**	**50.0**	**4.0**	**8.90**	**50**	**0.5**	**1.33**	**10**	**17.6**	**39.28**	**70**	**2.3**	**5.26**	**10**	**1.4**	**3.30**	**10**	**0.52**	**1.30**	**2.38**
Verfügbarkeit (%)								97.9			97.9			95.8			97.9			97.9			100.0			100.0	
HMW min. (Stat. Betrieb)			**52.1**	**23.6**	**0.0**	**26.0**	**0.00**	**11.9**	**100.0**	**0.00**	**2.3**	**50**	**0.00**	**0.1**	**10**	**0.00**	**7.0**	**100**	**0.00**	**1.9**	**10**	**0.01**	**0.2**	**10**	**0.01**	**0.24**	**4.76**
Zeit			**17:30**	**21:30**	**00:30**	**17:30**	**07:00**	**20:00**	**00:30**	**07:00**	**22:00**	**00:30**	**07:00**	**00:30**	**00:30**	**07:00**	**22:00**	**00:30**	**07:00**	**19:00**	**00:30**	**17:00**	**17:00**	**00:30**	**17:30**	**19:30**	**00:30**
HMW max. (Stat. Betrieb)			**61.4**	**31.0**	**0.0**	**31.0**	**1.81**	**36.8**	**100.0**	**0.34**	**7.6**	**50**	**0.06**	**1.3**	**10**	**1.36**	**30.3**	**100**	**0.18**	**3.6**	**10**	**0.10**	**2.1**	**10**	**0.10**	**0.86**	**4.76**
Zeit			**06:00**	**02:30**	**00:30**	**17:00**	**19:00**	**19:00**	**00:30**	**11:00**	**11:00**	**00:30**	**08:00**	**08:00**	**00:30**	**12:00**	**12:00**	**00:30**	**00:30**	**00:30**	**00:30**	**11:00**	**11:00**	**00:30**	**07:30**	**00:30**	**00:30**

TMW Bemerkung:

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 1,2-fach, 2-fach), g, a, b: Grenzwertüberschreitung mit Vertrauensbereich (1-fach, 1,2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:16:20

Operating Data provided by the Plant Operator

Annex 4.4

HMW Tagesprotokoll für: MK-Kamin Donnerstag, 21.06.2007 — MVA-Flötzersteig

SIEMENS EMIDA/TE V5.0 — Seite 2

Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	GW	pn W1/L1 ph	pn W1/L2 ph	pn W1/L3 ph	O2 korr %	Faktor_korr t	CO2 %	CO2 Masse t	CO/CO2 t	CO/CO2 GW t	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	BWL ges. MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	00:30		5.03 *	0.51	50.0	1.75	2.20	1.82	13.9	---- F	6.2	8.62	0.00022	0.002	13.9	0.5	16.6	132.6	100.7	50.2	184.9	4.1	25.8	
S2	01:00		6.23	0.57	50.0	1.82	2.20	1.82	14.4	---- F	5.8	7.83	0.00014	0.002	14.4	0.3	16.3	132.0	90.7	46.6	165.5	2.4	25.4	
S3	01:30		3.11	0.31	50.0	1.81	2.20	1.79	13.8	---- F	6.2	8.51	0.00026	0.002	13.8	0.5	16.9	131.7	99.9	48.1	308.3	1.0	25.8	
S4	02:00		3.07	0.30	50.0	1.82	2.20	1.81	14.0	---- F	6.1	8.47	0.00014	0.002	14.0	0.4	17.1	132.0	98.1	48.5	295.4	5.9	25.3	
S5	02:30		2.38 *	0.23	50.0	1.80	2.20	1.80	14.0	---- F	6.1	8.49	0.00012	0.002	14.0	0.3	16.9	132.2	98.7	49.0	291.4	3.5	24.5	
S6	03:00		2.46	0.24	50.0	1.80	2.20	1.79	14.1	---- F	6.1	8.41	0.00011	0.002	14.1	0.3	15.9	131.9	97.3	48.9	272.1	5.2	24.7	
S7	03:30		2.51	0.24	50.0	1.79	2.20	1.77	14.2	---- F	6.0	8.35	0.00011	0.002	14.2	0.4	15.6	131.8	96.1	48.6	339.0	3.1	24.6	
S8	04:00		2.98 *	0.25	50.0	1.72	2.20	1.69	14.3	---- F	5.8	8.12	0.00015	0.002	14.3	0.5	15.4	131.6	95.4	47.9	149.8	13.4	23.6	
S9	04:30		4.16 *	0.41	50.0	1.82	2.20	1.80	14.4	---- F	5.8	8.21	0.00014	0.002	14.4	0.5	15.8	132.0	93.4	47.5	195.7	7.9	23.1	
S10	05:00		4.91	0.50	50.0	1.82	2.20	1.81	13.9	---- F	6.1	8.62	0.00017	0.002	13.9	0.4	16.6	132.0	101.3	49.8	203.7	7.8	22.2	
S11	05:30		5.07	0.51	50.0	1.80	2.21	1.81	13.9	---- F	6.1	8.51	0.00023	0.002	13.9	0.4	16.4	131.9	100.6	50.4	168.2	4.5	22.3	
S12	06:00		4.68 *	0.45	50.0	1.82	2.20	1.80	14.1 *	---- F	5.9 *	8.12	0.00012	0.002	14.1 *	0.4	15.8	131.6	96.8	49.3	140.8	4.8	23.2	
S13	06:30		3.73	0.53	50.0	1.82	2.21	1.80	11.0 E	---- E	---- W	0.00 N	---- F	0.002	11.0 E	0.3	16.3	131.6	142.0	47.8	159.7	9.1	23.0	
S14	07:00		6.34	0.62	50.0	1.73	2.21	1.76	14.2	---- E	6.0	8.40	0.00020	0.002	14.2	0.3	16.4	131.8	97.2	48.2	152.5	12.2	22.9	
S15	07:30		6.97 *	0.67	50.0	1.78	2.21	1.80	14.3	---- F	5.9	8.31	0.00016	0.002	14.3	0.3	16.1	131.8	96.1	48.6	162.4	11.9	23.1	
S16	08:00		8.38 *	0.79	50.0	1.82	2.21	1.82	14.4	---- F	5.8	8.14	0.00024	0.002	14.4	0.3	15.6	131.5	94.2	48.1	167.1	12.3	23.2	
S17	08:30		8.49 *	0.87	50.0	1.82	2.21	1.81	14.4	---- F	5.8	8.20	0.00016	0.002	14.4	0.3	15.3	131.9	94.7	49.3	178.3	14.7	24.3	
S18	09:00		6.40	0.56	50.0	1.82	2.21	1.78	14.5	---- F	5.6	7.96	0.00017	0.002	14.5	0.3	14.9	130.0	93.4	49.1	174.0	16.8	24.9	
S19	09:30		6.37 *	0.58	50.0	1.77	2.21	1.77	14.6	---- F	5.6	7.84	0.00016	0.002	14.6	0.3	13.9	128.4	91.1	48.8	162.5	15.9	25.8	
S20	10:00		8.28 *	0.75	50.0	1.76	2.22	1.78	14.6	---- F	5.6	7.73	0.00027	0.002	14.6	0.2	13.9	128.2	90.0	49.1	189.2	16.6	26.5	
S21	10:30		8.10 *	0.76	50.0	1.81	2.22	1.83	14.3	---- F	5.8	7.99	0.00024	0.002	14.3	0.3	15.4	128.3	94.2	49.4	180.9	16.4	27.4	
S22	11:00		7.03 *	0.63	50.0	1.78	2.22	1.83	14.6	---- F	5.5	7.54	0.00014	0.002	14.6	0.3	16.3	127.9	89.4	46.8	171.9	17.7	28.7	
S23	11:30		8.10 *	0.76	50.0	1.77	2.22	1.82	14.3	---- F	5.8	7.96	0.00016	0.002	14.3	0.3	16.8	127.8	93.8	46.7	179.5	21.3	30.0	
S24	12:00		5.25 *	0.49	50.0	1.82	2.22	1.82	14.3	---- F	5.8	8.39	0.00024	0.002	14.3	0.4	17.2	127.4	96.5	49.4	188.3	22.8	31.1	
S25	12:30		5.98 *	0.59	50.0	1.82	2.22	1.81	14.1	---- F	5.8	8.15	0.00026	0.002	14.1	0.4	16.5	127.6	95.5	49.4	205.9	26.3	32.0	
S26	13:00		7.00 *	0.67	50.0	1.82	2.23	1.80	14.1	---- F	5.8	8.24	0.00020	0.002	14.3	0.5	16.4	127.3	97.0	49.0	204.1	26.6	32.5	
S27	13:30		5.34 *	0.52	50.0	1.85	2.23	1.79	14.3	---- F	5.8	8.24	0.00015	0.002	14.2	0.5	15.8	127.7	98.3	48.7	202.9	22.2	33.0	
S28	14:00		3.52 *	0.35	50.0	1.81	2.23	1.80	14.2	---- F	5.9	8.35	0.00015	0.002	14.2	0.5	15.8	127.7	98.3	48.7	202.9	22.2	33.0	
S29	14:30		3.40 *	0.33	50.0	1.82	2.23	1.78	14.1	---- F	6.0	8.34	0.00016	0.002	14.1	0.4	15.9	128.2	98.0	49.3	203.2	23.5	33.2	
S30	15:00		4.49 *	0.44	50.0	1.82	2.23	1.79	14.0	---- F	6.1	8.30	0.00023	0.002	14.0	0.4	15.9	127.9	97.4	48.7	206.4	21.4	33.4	
S31	15:30		4.72 *	0.46	50.0	1.82	2.23	1.81	14.1	---- F	6.0	8.29	0.00021	0.002	14.1	0.3	15.7	128.5	96.7	49.2	206.4	21.2	33.1	
S32	16:00		3.32 *	0.32	50.0	1.78	2.23	1.80	14.1	---- F	5.8	8.10	0.00015	0.002	14.1	0.3	15.6	132.1	97.1	49.1	206.6	19.4	33.4	
S33	16:30		2.91 *	0.28	50.0	1.73	2.23	1.76	14.2	---- F	5.7	7.92	0.00022	0.002	14.2	0.4	14.6	131.9	96.4	49.8	264.2	36.8	29.2	
S34	17:00		2.72 *	0.26	50.0	1.82	2.23	1.78	14.4	---- F	5.5	6.60	0.00022	0.002	14.4	-0.5	14.4	130.8	77.3	47.7	310.6	41.2	18.3	
S35	17:30		2.12 *	0.15	50.0	1.82	2.23	1.68	14.6	---- F	5.5	6.40	0.00022	0.002	14.6	-0.5	15.9	128.9	78.3	47.6	352.2	39.9	18.9	
S36	18:00	AA	2.33 *	0.22	50.0	1.83	2.22	1.80	14.1	---- F	5.9	8.05	0.00027	0.002	13.4	-0.1	17.1	130.5	94.7	46.5	307.7	39.9	18.2	
S37	18:30		2.15 *	0.21	50.0	1.80	2.23	1.82	13.0	---- F	7.0	8.40	0.00034	0.002	13.0	-0.4	18.2	131.2	98.2	48.5	310.0	30.7	18.0	
S38	19:00		1.70 *	0.16	50.0	1.82	2.23	1.81	13.2	---- F	6.8	8.06	0.00016	0.002	13.2	-0.4	18.2	131.4	94.4	46.6	322.1	24.8	18.4	
S39	19:30		1.26 *	0.12	50.0	1.80	2.23	1.80	13.1	---- E	6.8	8.03	0.00011	0.002	13.1	-0.5	18.2	131.3	94.5	46.8	324.3	27.4	18.7	
S40	20:00		1.06 *	0.10	50.0	1.79	2.23	1.80	13.1	---- E	6.9	8.09	0.00018	0.002	13.1	-0.5	18.0	131.5	94.2	46.9	319.3	23.7	19.2	
S41	20:30		1.08 *	0.10	50.0	1.78	2.23	1.80	13.0	---- E	7.0	8.19	0.00020	0.002	13.0	-0.5	17.9	131.9	95.4	48.3	327.1	22.8	19.6	
S42	21:00		0.71 *	0.06	50.0	1.82	2.23	1.81	13.6	---- E	6.5	7.35	0.00015	0.002	13.6	-0.7	16.8	130.9	85.6	43.9	316.3	19.0	20.0	
S43	21:30		0.73 *	0.07	50.0	1.79	2.23	1.78	13.0	---- E	7.0	8.01	0.00027	0.002	13.0	-0.7	17.5	131.8	93.7	47.2	310.4	19.0	19.6	
S44	22:00		0.79 *	0.08	50.0	1.81	2.23	1.79	13.2	---- E	6.8	8.07	0.00018	0.002	13.2	-0.7	17.5	131.5	94.4	47.9	307.1	15.6	19.3	
S45	22:30		0.79 *	0.08	50.0	1.81	2.23	1.80	12.9	---- F	7.0	8.32	0.00017	0.002	12.9	-0.6	17.5	131.5	97.5	49.0	307.7	15.1	19.3	
S46	23:00		0.94 *	0.09	50.0	1.84	2.24	1.80	12.9	---- F	7.1	8.39	0.00026	0.002	12.9	-0.6	17.5	131.7	97.8	49.7	306.7	15.0	19.6	
S47	23:30		1.44 *	0.14	50.0	1.74	2.24	1.81	12.8	---- F	7.2	8.59	0.00022	0.002	12.8	-0.6	18.2	132.0	100.2	49.7	308.0	11.4	19.7	
S48	24:00																							
TMW / TSum		47 Stat.	**4.01**	0.39	50.0	1.80	2.22	1.80	13.9	---- F	6.1	381.07	0.00019	0.002	13.9	0.1	16.4	130.7	96.3	48.3	229.7	16.3	24.6	
Verfügbarkeit (%)			100.0								97.9		97.9		97.9		100.0		100.0					
HMW min. (Stat. Betrieb)			**0.71**	0.06	50.0	1.72	2.20	1.76	11.0		5.5	0.00	0.00011	0.002	11.0	-0.7	13.9	127.3	72.3	42.7	68.9	1.0	18.0	
Zeit			**21:30**	21:30	00:30	04:00	00:30	07:30	07:00		12:00	07:00	03:00	00:30	07:00	21:30	10:30	14:00	17:30	17:30	04:00	01:30	19:00	
HMW max. (Stat. Betrieb)			**8.99**	0.87	50.0	1.84	2.24	1.83	14.6		7.2	8.62	0.00034	0.002	14.6	0.5	18.2	132.6	142.0	50.4	339.0	41.2	33.4	
Zeit			**09:00**	09:00	00:30	23:30	23:30	11:30	10:30		24:00	00:30	19:00	00:30	10:30	00:30	19:00	00:30	07:00	06:00	03:30	17:30	15:30	

Zeichenerklärung:
Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = Ab-/Anfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 1,2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

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Operating Data provided by the Plant Operator

Annex 4.5

HMW Tagesprotokoll für: MK-Kamin Freitag, 22.06.2007 MVA-Flötzersteig
SIEMENS EMIDATE V5.0 Seite 1 +

Nr.	Zeit	Anl. Betr. Zust.	Dampf t/h	Dampf 1 t/h	Dampf 2 t/h	Dampf 3 t/h	CO mg/Nm3	CO kg	CO GW	SO2 mg/Nm3	SO2 kg	SO2 GW
S1	00:30		60.9	30.5	0.0	30.4	13.6	0.68	100.0	3.1	0.16	50
S2	01:00		61.3	30.4	0.0	30.9	14.6	0.71	100.0	4.4	0.22	50
S3	01:30		60.8	30.1	0.0	30.7	16.2	0.78	100.0	4.5	0.22	50
S4	02:00		60.4	30.1	0.0	30.3	14.6	0.67	100.0	3.5	0.16	50
S5	02:30		60.6	30.8	0.0	29.8	13.0	0.63	100.0	3.4	0.17	50
S6	03:00		60.9	30.5	0.0	30.4	14.2	0.70	100.0	3.7	0.19	50
S7	03:30		60.3	30.2	0.0	30.1	13.4	0.67	100.0	3.1	0.16	50
S8	04:00		60.0	30.2	0.0	29.8	17.6	0.86	100.0	3.2	0.16	50
S9	04:30		59.9	30.6	0.0	29.3	12.9	0.61	100.0	3.4	0.16	50
S10	05:00		60.0	30.7	0.0	29.3	18.3	0.88	100.0	4.4	0.21	50
S11	05:30		59.4	30.1	0.0	29.3	11.7	0.55	100.0	3.2	0.15	50
S12	06:00		59.9	30.1	0.0	29.8	14.6	0.70	100.0	3.4	0.16	50
S13	06:30		60.5	30.2	0.0	30.3	21.0	1.03	100.0	3.6	0.18	50
S14	07:00		60.2	30.0	0.0	30.2	15.2	0.72	100.0	4.7	0.22	50
S15	07:30		60.6	30.2	0.0	30.4	19.4	0.92	100.0	4.7	0.22	50
S16	08:00		60.5	29.9	0.0	30.6	19.3	0.92	100.0	4.0	0.19	50
S17	08:30		60.8	30.6	0.0	30.2	28.7	1.39	100.0	5.4	0.26	50
S18	09:00		62.2	32.1	0.0	30.1	19.7	0.96	100.0	4.4	0.22	50
S19	09:30		61.3	31.1	0.0	30.2	23.2	1.11	100.0	4.1	0.20	50
S20	10:00		61.4	31.5	0.0	29.9	26.1	1.24	100.0	4.4	0.21	50
S21	10:30		63.9	32.9	0.0	31.0	22.9	1.13	100.0	4.6	0.23	50
S22	11:00		62.2	32.1	0.0	30.1	14.5	0.69	100.0	3.4	0.16	50
S23	11:30		59.3	31.0	0.0	28.3	23.5	1.02	100.0	5.9	0.26	50
S24	12:00		58.4	29.4	0.0	29.0	17.4	0.84	100.0	4.2	0.20	50
S25	12:30		52.9	26.6	0.0	26.3	20.1	0.83	100.0	3.6	0.14	50
S26	13:00		54.8	27.2	0.0	27.6	24.5	1.12	100.0	6.7	0.31	50
S27	13:30		56.9	28.5	0.0	28.4	15.0	0.70	100.0	3.2	0.15	50
S28	14:00		57.7	28.2	0.0	29.5	16.5	0.75	100.0	2.8	0.13	50
S29	14:30		58.3	27.8	0.0	30.5	30.0	1.40	100.0	2.9	0.14	50
S30	15:00		58.6	28.2	0.0	30.4	13.6	0.63	100.0	4.4	0.20	50
S31	15:30		58.3	28.1	0.0	30.2	25.9	1.20	100.0	4.2	0.20	50
S32	16:00		58.7	28.1	0.0	30.6	14.8	0.69	100.0	2.1	0.10	50
S33	16:30		57.0	26.8	0.0	30.2	14.8	0.69	100.0	1.7	0.08	50
S34	17:00		57.8	27.7	0.0	30.1	15.0	0.74	100.0	2.8	0.14	50
S35	17:30		57.8	27.8	0.0	30.0	18.8	0.90	100.0	2.9	0.14	50
S36	18:00		56.6	26.5	0.0	30.1	30.5	1.41	100.0	2.6	0.12	50
S37	18:30		56.1	26.2	0.0	29.9	21.9	1.01	100.0	2.6	0.12	50
S38	19:00		57.1	27.0	0.0	30.1	25.1	1.18	100.0	2.8	0.13	50
S39	19:30		58.6	28.4	0.0	30.2	23.9	1.16	100.0	2.8	0.14	50
S40	20:00		58.6	28.1	0.0	30.5	34.7	1.67	100.0	3.1	0.15	50
S41	20:30		58.8	28.4	0.0	30.4	31.5	1.52	100.0	3.0	0.14	50
S42	21:00		59.5	29.3	0.0	30.2	17.0	0.84	100.0	2.8	0.14	50
S43	21:30		58.7	29.2	0.0	29.5	17.8	0.88	100.0	2.5	0.13	50
S44	22:00	AA	60.4	30.0	0.0	30.4	21.7	1.11	100.0	3.2	0.17	50
S45	22:30	AA	59.6	30.0	0.0	29.6	18.0	0.92	100.0	3.2	0.17	50
S46	23:00	AA	59.4	30.0	0.0	29.4	18.6	0.94	100.0	3.4	0.17	50
S47	23:30	AA	59.0	30.0	0.0	29.0	17.7	0.91	100.0	3.8	0.20	50
S48	24:00	AA	58.6	29.9	0.0	28.7	28.7	1.46	100.0	4.3	0.22	50
TMW / TSum		43 Stat.	**59.3**	**29.4**	**0.0**	**29.9**	**19.5**	45.07	50.0	**3.6**	8.40	50
Verfügbarkeit (%)							100.0			100.0		
HMW min. (Stat. Betrieb) Zeit			**52.9 12:30**	**26.2 18:30**	**0.0 00:30**	**26.3 12:30**	**11.7 05:30**	0.55 05:30	100.0 00:30	**1.7 16:30**	0.08 16:30	50 00:30
HMW max. (Stat. Betrieb) Zeit			**63.9 10:30**	**32.9 10:30**	**0.0 00:30**	**31.0 10:30**	**34.7 20:00**	1.67 20:00	100.0 00:30	**6.7 13:00**	0.31 13:00	50 00:30

Nr.	HCl mg/Nm3	HCl kg	HCl GW	NO2 mg/Nm3	NO2 kg	NO2 GW	Corg mg/Nm3	Corg kg	Corg GW	Staub mg/Nm3	Staub kg	Staub GW	NH3 mg/Nm3	NH3 kg	NH3 GW
S1	0.7	0.04	10	13.7	0.68	100	1.9	0.10	10	1.7	0.09	10	0.49	0.03	4.76
S2	0.7	0.04	10	11.5	0.56	100	1.9	0.09	10	1.8	0.09	10	0.45	0.02	4.76
S3	0.7	0.04	10	7.7	0.37	100	1.9	0.09	10	1.7	0.08	10	0.46	0.02	4.76
S4	0.7	0.03	10	7.9	0.37	100	2.0	0.09	10	1.8	0.09	10	0.34	0.02	4.76
S5	0.7	0.04	10	10.4	0.50	100	1.9	0.09	10	1.7	0.08	10	0.45	0.02	4.76
S6	0.7	0.04	10	12.0	0.60	100	1.9	0.10	10	1.7	0.09	10	0.44	0.02	4.76
S7	0.7	0.04	10	13.6	0.68	100	1.9	0.10	10	1.8	0.09	10	0.45	0.02	4.76
S8	0.7	0.04	10	13.4	0.65	100	2.0	0.10	10	1.9	0.09	10	0.46	0.02	4.76
S9	0.7	0.04	10	10.3	0.49	100	2.0	0.10	10	2.0	0.10	10	0.39	0.02	4.76
S10	0.7	0.04	10	8.9	0.43	100	2.0	0.10	10	2.0	0.10	10	0.45	0.02	4.76
S11	0.7	0.04	10	8.8	0.41	100	2.0	0.10	10	2.0	0.10	10	0.64	0.03	4.76
S12	0.7	0.04	10	9.3	0.45	100	2.0	0.10	10	2.0	0.10	10	0.47	0.02	4.76
S13	0.7	0.04	10	9.8	0.48	100	2.0	0.10	10	1.8	0.09	10	0.38	0.02	4.76
S14	0.7	0.04	10	8.3	0.39	100	2.0	0.10	10	1.9	0.09	10	0.47	0.02	4.76
S15	0.7	0.04	10	8.9	0.42	100	2.0	0.10	10	1.9	0.09	10	0.50	0.03	4.76
S16	0.7	0.04	10	9.9	0.47	100	2.0	0.10	10	1.8	0.09	10	0.47	0.02	4.76
S17	0.7	0.04	10	11.0	0.53	100	2.0	0.10	10	1.7	0.08	10	0.52	0.03	4.76
S18	0.6	0.03	10	10.3	0.50	100	2.3	0.11	10	1.7	0.09	10	0.53	0.03	4.76
S19	0.6	0.03	10	8.6	0.41	100	3.0	0.14	10	1.7	0.08	10	0.49	0.03	4.76
S20	0.6	0.03	10	6.5	0.31	100	1.9	0.09	10	1.0	0.05	10	0.46	0.02	4.76
S21	0.5	0.03	10	5.6	0.28	100	1.7	0.09	10	0.6	0.03	10	0.48	0.03	4.76
S22	0.5	0.03	10	3.8	0.18	100	1.6	0.08	10	0.1	0.01	10	0.51	0.03	4.76
S23	0.7	0.03	10	11.8	0.52	100	2.2	0.10	10	1.1	0.05	10	0.68	0.03	4.76
S24	0.6	0.03	10	11.4	0.55	100	1.8	0.09	10	0.7	0.04	10	0.48	0.03	4.76
S25	0.5	0.02	10	4.1	0.17	100	1.6	0.07	10	0.0	0.00	10	0.51	0.02	4.76
S26	0.4	0.02	10	5.3	0.25	100	1.5	0.07	10	0.1	0.01	10	0.55	0.03	4.76
S27	0.5	0.03	10	6.4	0.30	100	1.4	0.07	10	0.2	0.01	10	0.51	0.03	4.76
S28	0.5	0.03	10	6.7	0.31	100	1.4	0.07	10	0.4	0.02	10	0.41	0.02	4.76
S29	0.5	0.03	10	7.1	0.33	100	1.4	0.07	10	0.3	0.02	10	0.38	0.02	4.76
S30	0.5	0.03	10	6.8	0.31	100	1.4	0.07	10	0.3	0.02	10	0.44	0.02	4.76
S31	0.5	0.03	10	7.0	0.33	100	1.3	0.06	10	0.3	0.02	10	0.38	0.02	4.76
S32	0.5	0.03	10	7.3	0.34	100	1.3	0.06	10	0.9	0.04	10	0.37	0.02	4.76
S33	0.5	0.03	10	8.1	0.38	100	1.8	0.09	10	1.3	0.06	10	0.39	0.02	4.76
S34	0.7	0.04	10	15.4	0.76	100	2.6	0.13	10	1.8	0.09	10	0.47	0.03	4.76
S35	0.7	0.04	10	13.5	0.64	100	1.9	0.09	10	2.0	0.10	10	0.49	0.03	4.76
S36	0.7	0.03	10	9.9	0.46	100	1.9	0.09	10	2.0	0.10	10	0.56	0.03	4.76
S37	0.7	0.04	10	10.7	0.50	100	1.9	0.09	10	2.0	0.10	10	0.63	0.03	4.76
S38	0.7	0.04	10	9.2	0.43	100	1.9	0.09	10	2.1	0.10	10	0.52	0.03	4.76
S39	0.7	0.04	10	9.8	0.48	100	1.9	0.09	10	2.2	0.11	10	0.57	0.03	4.76
S40	0.7	0.04	10	11.7	0.56	100	2.0	0.10	10	2.3	0.11	10	0.63	0.03	4.76
S41	0.6	0.03	10	10.8	0.52	100	1.9	0.09	10	2.2	0.11	10	0.58	0.03	4.76
S42	0.6	0.03	10	11.3	0.56	100	1.8	0.09	10	2.2	0.11	10	0.55	0.03	4.76
S43	0.6	0.03	10	12.0	0.59	100	1.8	0.09	10	2.3	0.12	10	0.59	0.03	4.76
S44	0.7	0.04	10	13.9	0.71	100	1.9	0.10	10	2.4	0.12	10	0.59	0.03	4.76
S45	0.7	0.04	10	17.7	0.91	100	2.1	0.11	10	2.2	0.11	10	0.69	0.04	4.76
S46	0.8	0.04	10	18.3	0.93	100	2.2	0.11	10	2.2	0.11	10	0.72	0.04	4.76
S47	0.7	0.04	10	18.9	0.97	100	2.1	0.11	10	2.1	0.11	10	0.66	0.04	4.76
S48	0.7	0.04	10	16.0	0.82	100	2.1	0.11	10	2.2	0.11	10	0.61	0.03	4.76
TMW / TSum	**0.6**	1.69	10	**9.5**	23.79	70	**1.9**	4.48	10	**1.5**	3.70	10	**0.49**	1.26	2.38
Verfügbarkeit (%)	100.0			100.0			100.0			100.0			100.0		
HMW min. (Stat. Betrieb) Zeit	**0.4 13:00**	0.02 12:30	10 00:30	**3.8 11:00**	0.17 12:30	100 00:30	**1.3 15:30**	0.06 15:30	10 00:30	**0.0 12:30**	0.00 12:30	10 00:30	**0.34 02:00**	0.02 01:00	4.76 00:30
HMW max. (Stat. Betrieb) Zeit	**0.7 00:30**	0.04 00:30	10 00:30	**15.4 17:00**	0.76 17:00	100 00:30	**3.0 09:30**	0.14 09:30	10 00:30	**2.3 20:00**	0.12 21:30	10 00:30	**0.68 11:30**	0.03 00:30	4.76 00:30

TMW Bemerkung:

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "--" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1.2-fach, 2-fach), g, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1.2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:01:22

Operating Data provided by the Plant Operator

Annex 4.6

HMW Tagesprotokoll für: MK-Kamin Freitag, 22.06.2007 MVA-Flötzersteig
SIEMENS EMIDATE V5.0 Seite 2 -

Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	Hg_Verewa GW	ph W1/L1 ph	ph W1/L2 ph	ph W1/L3 ph	O2 korr %	Faktor_korr 1	CO2 %	CO2 Masse t	CO/CO2 1	CO/CO2 GW 1	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	BWL ges. MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	00:30		0.78	0.08	50.0	1.77	2.24	1.78	13.0	--- F	6.9	8.39	0.00013	0.002	13.0	-0.5	17.2	132.3	99.2	49.9	303.3	11.9	20.0	
S2	01:00		0.83	0.08	50.0	1.76	2.24	1.78	13.0	--- F	6.9	8.24	0.00013	0.002	13.0	-0.6	16.0	131.7	97.3	50.3	299.9	12.9	20.1	
S3	01:30		1.64	0.16	50.0	1.74	2.24	1.81	13.0	--- F	6.9	8.15	0.00015	0.002	13.0	-0.7	15.0	131.4	95.5	49.9	287.7	12.1	20.2	
S4	02:00		2.85	0.26	50.0	1.82	2.24	1.80	13.3	--- F	6.7	7.88	0.00013	0.002	13.3	-0.7	14.9	131.0	92.1	49.5	292.0	10.5	20.2	
S5	02:30		3.74	0.36	50.0	1.82	2.24	1.80	13.0	--- F	6.9	8.13	0.00012	0.002	13.0	-0.7	16.5	131.5	96.2	49.6	299.7	14.6	20.0	
S6	03:00		4.92	0.49	50.0	1.81	2.24	1.80	12.8	--- F	7.1	8.43	0.00013	0.002	12.8	-0.6	18.0	131.8	98.9	49.9	291.3	15.9	19.8	
S7	03:30		5.43	0.54	50.0	1.82	2.24	1.82	12.8	--- F	7.2	8.59	0.00012	0.002	12.8	-0.5	18.7	131.7	99.4	49.5	299.0	20.9	19.7	
S8	04:00		5.60	0.54	50.0	1.75	2.24	1.78	13.0	--- F	7.0	8.41	0.00016	0.002	13.0	-0.5	18.0	131.8	97.3	49.2	305.7	22.5	19.3	
S9	04:30		4.90	0.46	50.0	1.78	2.24	1.81	13.2	--- F	6.8	8.08	0.00012	0.002	13.2	-0.5	16.6	131.4	94.6	49.1	309.0	23.1	18.9	
S10	05:00		5.86	0.56	50.0	1.81	2.24	1.78	13.1	--- F	6.7	7.99	0.00017	0.002	13.1	-0.6	16.2	131.4	95.6	49.2	300.4	20.0	18.6	
S11	05:30		6.13	0.57	50.0	1.81	2.24	1.80	13.3	--- F	6.6	7.88	0.00011	0.002	13.3	-0.7	16.1	131.3	93.1	48.7	300.4	11.6	18.4	
S12	06:00		6.44	0.61	50.0	1.82	2.24	1.79	13.1	--- F	6.9	8.18	0.00013	0.002	13.1	-0.7	16.7	131.4	95.3	49.1	312.2	12.9	18.6	
S13	06:30		5.30	0.52	50.0	1.77	2.24	1.76	12.9	--- F	7.1	8.40	0.00019	0.002	12.9	-0.6	17.3	131.4	98.2	49.7	316.3	18.0	19.0	
S14	07:00		5.87	0.55	50.0	1.73	2.24	1.80	13.2	--- F	6.8	8.07	0.00014	0.002	13.2	-0.6	16.3	131.2	94.3	49.4	311.8	19.2	19.1	
S15	07:30		7.00	0.66	50.0	1.69	2.25	1.68	13.2	--- F	6.8	8.15	0.00018	0.002	13.2	-0.6	16.1	131.2	94.6	49.7	307.2	13.9	19.4	
S16	08:00		7.41	0.70	50.0	1.79	2.25	1.78	13.2	--- F	6.9	8.19	0.00017	0.002	13.2	-0.5	16.0	131.3	94.7	49.7	301.1	8.5	20.2	
S17	08:30		6.41	0.62	50.0	1.84	2.35	1.83	13.0	--- F	7.0	8.33	0.00026	0.002	13.0	-0.6	16.5	131.2	96.5	49.8	313.0	10.9	20.4	
S18	09:00		6.85	0.67	50.0	1.81	3.17	1.83	12.9	--- F	7.1	8.38	0.00018	0.002	12.9	-0.5	16.8	131.9	97.4	51.0	276.1	7.1	20.9	
S19	09:30		6.43	0.61	50.0	1.82	3.38	1.83	12.7	--- F	7.2	8.18	0.00021	0.002	12.7	-0.7	16.1	130.9	95.5	50.3	299.7	7.6	21.3	
S20	10:00		6.36	0.60	50.0	1.82	3.38	1.82	12.0	--- F	7.9	8.13	0.00024	0.002	12.0	-0.8	16.6	127.6	94.9	50.3	328.3	6.7	22.0	
S21	10:30		4.99	0.49	50.0	1.78	3.41	1.82	11.7 *	--- F	8.5	8.31	0.00021	0.002	11.2	-0.9	17.0	124.9	98.1	52.4	299.8	5.4	22.1	
S22	11:00		4.31	0.41	50.0	1.76	2.78	1.80	11.0 E	--- F	8.6	7.89	0.00014	0.002	10.8	-1.0	16.9	125.5	95.1	51.1	224.9	3.5	22.4	
S23	11:30		6.09	0.53	50.0	1.67	2.07	1.82	14.2	--- F	5.9	7.51	0.00022	0.002	14.2	0.0	13.3	120.7	87.4	48.6	184.7	4.4	23.2	
S24	12:00		5.31	0.51	50.0	1.75	2.08	1.83	14.2 *	--- F	7.3	8.15	0.00016	0.002	12.5	-0.4	16.2	116.2	96.1	47.9	192.6	8.6	22.9	
S25	12:30		4.85	0.40	50.0	1.83	2.09	1.82	11.0 E	--- F	8.8	6.89	0.00019	0.002	10.7	-1.5	20.4	122.5	81.9	43.3	183.5	11.0	22.9	
S26	13:00		6.06	0.56	50.0	1.84	2.10	1.77	11.0 E	--- F	9.5	7.68	0.00023	0.002	9.9	-1.4	21.9	125.9	91.6	44.9	162.9	11.5	23.6	
S27	13:30		5.80	0.54	50.0	1.82	2.11	1.75	11.0 E	--- F	9.1	7.60	0.00014	0.002	10.1	-1.4	20.4	127.4	92.5	46.7	172.2	14.4	24.0	
S28	14:00		5.50	0.50	50.0	1.80	2.11	1.80	11.0 E	--- F	9.1	7.54	0.00015	0.002	10.3	-1.4	19.2	127.8	90.9	47.3	172.2	16.9	24.3	
S29	14:30		4.75	0.44	50.0	1.83	2.12	1.75	11.0 E	--- F	9.3	7.67	0.00029	0.002	9.9	-1.4	20.1	128.2	93.0	47.8	169.2	17.2	24.9	
S30	15:00		5.02	0.46	50.0	1.77	2.12	1.75	11.0 E	--- F	9.4	7.52	0.00013	0.002	9.8	-1.4	19.5	128.3	91.7	48.0	163.1	17.9	25.3	
S31	15:30		4.96	0.46	50.0	1.81	2.12	1.83	11.0 E	--- F	9.6	7.60	0.00025	0.002	9.5	-1.3	20.3	128.1	92.7	47.9	183.5	21.3	26.4	
S32	16:00		4.19	0.39	50.0	1.84	4.59	1.83	11.0 E	--- F	9.8	7.58	0.00014	0.002	9.3	-1.4	21.6	128.2	92.8	48.2	187.2	23.7	26.5	
S33	16:30		2.46	0.23	50.0	1.84	7.19	1.82	11.0 E	--- F	9.5	7.55	0.00014	0.002	9.6	-1.3	21.5	128.0	92.9	46.8	180.6	21.6	26.9	
S34	17:00		3.17	0.31	50.0	1.83	7.97	1.82	12.4 *	--- F	7.5	8.07	0.00014	0.002	12.1	-0.6	18.5	127.1	97.9	47.3	177.6	19.3	27.1	
S35	17:30		4.02	0.38	50.0	1.83	8.55	1.81	12.9	--- F	6.8	7.83	0.00018	0.002	12.9	-0.5	16.5	126.0	95.0	47.4	166.2	17.0	26.4	
S36	18:00		5.88	0.54	50.0	1.83	8.47	1.82	12.7	--- F	7.0	7.62	0.00029	0.002	12.7	-0.7	17.2	127.2	92.6	46.4	183.8	8.1	26.0	
S37	18:30		5.56	0.52	50.0	1.82	8.40	1.82	12.8	--- F	6.9	7.73	0.00021	0.002	12.8	-0.7	17.5	128.3	92.9	46.0	292.8	29.6	17.8	
S38	19:00		5.48	0.51	50.0	1.81	8.34	1.81	12.7	--- F	7.0	7.79	0.00024	0.002	12.7	-0.7	17.5	128.4	93.5	46.9	303.1	24.1	17.6	
S39	19:30		5.31	0.51	50.0	1.83	8.32	1.80	12.7	--- F	7.0	8.04	0.00023	0.002	12.7	-0.7	17.5	128.7	96.7	48.1	303.2	23.1	17.8	
S40	20:00		5.00	0.48	50.0	1.82	8.28	1.81	12.9	--- F	6.9	8.06	0.00033	0.002	12.9	-0.7	17.4	128.8	95.9	48.0	316.7	20.3	17.8	
S41	20:30		4.42	0.43	50.0	1.82	8.28	1.81	12.5	--- F	7.3	8.11	0.00029	0.002	12.5	-0.8	17.8	129.1	96.6	48.3	326.4	20.0	17.6	
S42	21:00		4.86	0.48	50.0	1.81	8.26	1.81	12.4	--- F	7.3	8.20	0.00016	0.002	12.4	-0.7	18.1	130.3	98.5	48.8	315.4	27.9	17.1	
S43	21:30		4.65	0.46	50.0	1.81	8.26	1.79	12.4	--- F	7.3	8.16	0.00017	0.002	12.4	-0.7	18.3	131.1	98.6	48.1	315.0	22.8	17.3	
S44	22:00	AA	4.41	0.45	50.0	1.80	7.88	1.79	12.9	--- F	6.7	8.35	0.00021	0.002	12.9	-0.5	17.1	131.4	102.0	49.5	314.0	21.5	17.3	
S45	22:30	AA	4.51	0.46	50.0	1.81	7.47	1.80	13.7	--- F	6.0	8.31	0.00018	0.002	13.7	-0.1	15.8	131.2	102.0	48.9	310.9	20.8	17.3	
S46	23:00	AA	5.60	0.57	50.0	1.78	7.49	1.79	13.8	--- F	6.0	8.27	0.00018	0.002	13.8	-0.1	15.7	131.1	101.1	48.7	316.9	20.9	17.4	
S47	23:30	AA	5.61	0.57	50.0	1.73	7.48	1.80	13.7	--- F	6.1	8.47	0.00017	0.002	13.7	-0.1	15.7	131.2	102.4	48.4	311.6	16.9	17.5	
S48	24:00	AA	5.35	0.54	50.0	1.82	7.43	1.78	13.5	--- F	6.3	8.44	0.00027	0.002	13.5	-0.3	15.9	131.5	101.6	48.1	313.1	16.0	17.6	
TMW / TSum		43 Stat.	**4.96**	0.47	50.0	1.80	3.91	1.80	12.5	--- F	7.6	385.12	0.00018	0.002	12.2	-0.8	17.6	128.9	94.8	48.6	261.2	15.6	21.3	
Verfügbarkeit (%)			100.0								100.0		100.0		100.0		100.0		100.0					
HMW min. (Stat. Betrieb) Zeit			**0.78 00:30**	0.08 00:30	50.0 00:30	1.67 11:30	2.07 11:30	1.68 07:30	11.0 11:00		5.9 11:30	6.89 12:30	0.00011 05:30	0.002 00:30	9.3 16:00	-1.5 12:30	13.3 11:30	116.2 12:00	81.9 12:30	43.3 12:30	162.9 13:00	3.5 11:00	17.1 21:00	
HMW max. (Stat. Betrieb) Zeit			**7.41 08:00**	0.70 08:00	50.0 00:30	1.84 08:30	8.55 17:30	1.83 08:30	14.2 11:30		9.8 16:00	8.59 03:30	0.00033 20:00	0.002 00:30	14.2 11:30	0.0 11:30	21.9 13:00	132.3 00:30	99.4 03:30	52.4 10:30	328.3 10:00	29.6 18:30	27.1 17:00	

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "--" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1.2-fach, 2-fach), g, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1.2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:01:24

Operating Data provided by the Plant Operator

Annex 4.7

TMW Tagesprotokoll für: MK-Kamin Samstag, 23.06.2007 — MVA-Flötzersteig

SIEMENS EMIDATE V5.0 — Seite 1

Nr.	Zeit	Anl. Betr. Zust.	Dampf t/h	Dampf 1 t/h	Dampf 2 t/h	Dampf 3 t/h	CO kg	CO GW	CO mg/Nm3	SO2 kg	SO2 GW	SO2 mg/Nm3	HCl kg	HCl GW	HCl mg/Nm3	NO2 kg	NO2 GW	NO2 mg/Nm3	Corg kg	Corg GW	Corg mg/Nm3	Staub kg	Staub GW	Staub mg/Nm3	NH3 kg	NH3 GW
S1	00:30	AA	59.0	29.8	0.0	29.2	1.41	100.0	27.7	0.27	50	5.3	0.04	10	0.7	0.78	100	15.3	0.11	10	2.1	0.11	10	0.78	0.04	4.76
S2	01:00	AA	58.8	29.7	0.0	29.1	1.18	100.0	22.7	0.22	50	4.1	0.04	10	0.7	0.79	100	14.5	0.11	10	2.1	0.11	10	0.66	0.04	4.76
S3	01:30	AA	58.4	30.0	0.0	28.4	1.06	100.0	20.1	0.19	50	3.6	0.04	10	0.6	0.88	100	15.0	0.11	10	2.0	0.11	10	0.60	0.03	4.76
S4	02:00	AA	60.6	29.6	2.0	29.0	1.75	100.0	31.1	0.29	50	5.2	0.04	10	0.6	0.99	100	15.7	0.11	10	1.9	0.11	10	0.53	0.03	4.76
S5	02:30	AA	71.1	29.3	12.8	28.6	0.95	100.0	16.3	0.20	50	3.4	0.04	10	0.6	0.99	100	17.1	0.11	10	1.8	0.11	10	0.65	0.04	4.76
S6	03:00	AA	77.1	29.6	14.8	27.9	1.07	100.0	18.1	0.21	50	3.5	0.04	10	0.6	0.97	100	16.8	0.11	10	1.8	0.12	10	0.55	0.03	4.76
S7	03:30	AA	75.9	27.8	19.8	28.3	0.93	100.0	15.2	0.21	50	3.4	0.04	10	0.6	0.97	100	15.9	0.11	10	1.8	0.11	10	0.56	0.04	4.76
S8	04:00	AA	82.5	29.9	24.1	28.5	0.79	100.0	12.1	0.19	50	2.9	0.04	10	0.6	0.91	100	13.9	0.13	10	1.9	0.11	10	0.66	0.05	4.76
S9	04:30	AA	85.1	29.8	27.0	28.3	0.99	100.0	14.8	0.14	50	2.1	0.04	10	0.5	0.73	100	10.9	0.12	10	1.7	0.11	10	0.67	0.05	4.76
S10	05:00	AA	80.2	30.5	21.0	28.7	3.43	100.0	56.9	0.17	50	2.7	0.03	10	0.5	0.60	100	9.9	0.10	10	1.6	0.09	10	0.76	0.05	4.76
S11	05:30	AA	84.8	29.9	27.3	27.6	3.39	100.0	48.4	0.22	50	3.1	0.03	10	0.4	0.82	100	11.6	0.09	10	1.3	0.10	10	0.54	0.04	4.76
S12	06:00	AA	89.9	30.5	30.4	29.0	2.36	100.0	33.1	0.26	50	3.4	0.03	10	0.4	1.12	100	15.8	0.09	10	1.3	0.10	10	0.70	0.05	4.76
S13	06:30	AA	90.5	31.1	29.7	29.3	2.05	100.0	33.1	0.18	50	2.6	0.04	10	0.5	0.93	100	13.4	0.10	10	1.4	0.10	10	0.49	0.04	4.76
S14	07:00	AA	87.4	30.5	28.8	28.1	1.40	100.0	19.7	0.25	50	3.6	0.04	10	0.5	1.20	100	17.9	0.10	10	1.4	0.10	10	0.42	0.03	4.76
S15	07:30	AA	89.1	29.5	30.4	29.2	1.79	100.0	25.8	0.28	50	4.0	0.04	10	0.5	1.23	100	17.5	0.10	10	1.4	0.10	10	0.51	0.04	4.76
S16	08:00	AA	89.1	29.5	28.2	29.4	1.66	100.0	24.3	0.20	50	2.9	0.03	10	0.4	1.02	100	15.0	0.10	10	1.4	0.10	10	0.45	0.03	4.76
S17	08:30	AA	86.5	29.4	30.6	29.4	1.62	100.0	22.6	0.22	50	3.0	0.03	10	0.4	0.80	100	11.3	0.10	10	1.3	0.10	10	0.55	0.04	4.76
S18	09:00	AA	89.7	29.4	31.1	29.5	1.25	100.0	18.0	0.25	50	3.6	0.03	10	0.4	0.81	100	9.5	0.10	10	1.4	0.10	10	0.77	0.05	4.76
S19	09:30	AA	91.4	31.6	30.4	29.3	2.00	100.0	28.4	0.24	50	3.5	0.04	10	0.5	0.88	100	9.6	0.10	10	1.4	0.10	10	0.70	0.05	4.76
S20	10:00	AA	92.8	32.3	31.1	29.4	1.75	100.0	24.6	0.24	50	3.4	0.04	10	0.5	0.88	100	10.3	0.10	10	1.4	0.10	10	0.72	0.05	4.76
S21	10:30	AA	94.0	30.8	33.9	29.3	2.00	100.0	27.5	0.09	50	1.3	0.03	10	0.4	0.74	100	10.3	0.10	10	1.3	0.10	10	0.72	0.05	4.76
S22	11:00	AA	93.5	31.1	32.0	29.4	1.15	100.0	16.1	0.09	50	1.3	0.03	10	0.4	0.93	100	13.7	0.10	10	1.4	0.10	10	0.50	0.04	4.76
S23	11:30	AA	92.2	29.7	32.9	29.6	1.23	100.0	16.1	0.14	50	1.9	0.03	10	0.4	1.35	100	18.8	0.18	10	2.5	0.12	10	0.50	0.04	4.76
S24	12:00	AA	90.4	29.6	30.8	30.0	1.92	100.0	26.8	0.20	50	2.9	0.03	10	0.4	0.94	100	13.4	0.10	10	1.4	0.10	10	0.54	0.04	4.76
S25	12:30	AA	91.0	29.0	32.9	29.1	3.06	100.0	43.2	0.21	50	2.9	0.03	10	0.4	0.91	100	12.6	0.10	10	1.3	0.10	10	0.74	0.06	4.76
S26	13:00	AA	88.5	29.4	30.1	29.0	2.25	100.0	32.0	0.21	50	2.9	0.03	10	0.4	0.97	100	15.0	0.10	10	1.4	0.10	10	0.70	0.05	4.76
S27	13:30	AA	91.7	29.3	32.9	29.5	2.13	100.0	29.2	0.13	50	1.7	0.02	10	0.3	1.08	100	15.7	0.10	10	1.4	0.10	10	0.58	0.04	4.76
S28	14:00	AA	89.8	28.0	32.7	29.1	3.72	100.0	51.2	0.15	50	2.1	0.02	10	0.4	1.15	100	13.8	0.10	10	1.4	0.10	10	0.54	0.04	4.76
S29	14:30	AA	87.2	26.5	31.7	29.0	2.67	100.0	37.5	0.31	50	4.3	0.03	10	0.4	1.15	100	14.5	0.10	10	1.3	0.10	10	0.56	0.04	4.76
S30	15:00		89.5	27.5	32.6	29.4	2.48	100.0	34.4	0.31	50	4.3	0.03	10	0.4	1.07	100	13.5	0.10	10	1.4	0.10	10	0.69	0.05	4.76
S31	15:30		89.1	28.6	30.7	29.3	1.50	100.0	21.1	0.20	50	2.8	0.03	10	0.4	0.91	100	12.8	0.10	10	1.4	0.10	10	0.67	0.05	4.76
S32	16:00		90.3	31.3	31.2	29.7	2.62	100.0	35.7	0.18	50	2.4	0.03	10	0.4	0.96	100	13.1	0.10	10	1.3	0.10	10	0.63	0.05	4.76
S33	16:30		91.8	31.0	30.6	30.2	2.66	100.0	39.2	0.20	50	2.7	0.02	10	0.3	0.94	100	12.9	0.10	10	1.3	0.10	10	0.74	0.06	4.76
S34	17:00		91.7	30.7	30.7	30.3	2.31	100.0	31.9	0.21	50	2.9	0.03	10	0.4	0.91	100	12.6	0.10	10	1.2	0.09	10	0.70	0.05	4.76
S35	17:30		91.1	29.8	30.8	30.5	1.95	100.0	27.1	0.32	50	4.4	0.03	10	0.4	1.08	100	15.0	0.10	10	1.2	0.09	10	0.58	0.04	4.76
S36	18:00		91.1	30.3	30.2	30.6	1.69	100.0	23.1	0.35	50	4.7	0.03	10	0.4	1.15	100	15.8	0.10	10	1.1	0.08	10	0.49	0.04	4.76
S37	18:30	AA	92.7	30.7	31.5	30.5	1.88	100.0	25.8	0.36	50	4.9	0.02	10	0.3	1.05	100	14.4	0.10	10	1.3	0.10	10	0.65	0.05	4.76
S38	19:00	AA	90.4	28.3	32.0	30.1	2.01	100.0	29.1	0.56	50	8.2	0.02	10	0.3	0.99	100	13.9	0.10	10	1.4	0.09	10	0.50	0.04	4.76
S39	19:30	AA	89.5	28.7	30.7	30.1	3.83	100.0	53.6	0.31	50	4.3	0.02	10	0.3	0.78	100	11.0	0.10	10	1.3	0.10	10	0.65	0.05	4.76
S40	20:00		90.9	29.9	31.0	30.0	2.84	100.0	39.1	0.21	50	2.8	0.02	10	0.2	0.79	100	10.8	0.10	10	1.3	0.10	10	0.60	0.05	4.76
S41	20:30		92.5	31.7	31.2	30.3	2.88	100.0	39.1	0.28	50	3.8	0.02	10	0.2	0.81	100	11.0	0.10	10	1.3	0.10	10	0.60	0.05	4.76
S42	21:00		92.1	30.4	31.4	30.3	1.23	100.0	17.3	0.33	50	4.6	0.02	10	0.3	0.97	100	13.7	0.10	10	1.4	0.10	10	0.56	0.04	4.76
S43	21:30		90.7	29.2	30.9	30.6	1.26	100.0	17.6	0.25	50	3.4	0.02	10	0.3	1.23	100	17.1	0.10	10	1.4	0.10	10	0.52	0.04	4.76
S44	22:00	AA	91.5	30.8	30.3	30.4	1.46	100.0	20.0	0.21	50	2.8	0.02	10	0.3	1.09	100	15.0	0.10	10	1.1	0.08	10	0.56	0.04	4.76
S45	22:30	AA	91.8	30.8	30.6	30.4	1.23	100.0	16.8	0.21	50	2.9	0.02	10	0.3	1.13	100	15.4	0.10	10	1.2	0.09	10	0.60	0.05	4.76
S46	23:00		91.3	30.5	30.5	30.3	1.20	100.0	16.4	0.19	50	2.5	0.02	10	0.3	1.32	100	18.0	0.11	10	1.2	0.09	10	0.58	0.04	4.76
S47	23:30	AA	91.3	30.9	30.5	29.9	1.16	100.0	15.8	0.31	50	4.2	0.02	10	0.2	1.36	100	16.5	0.10	10	1.2	0.09	10	0.62	0.05	4.76
S48	24:00	AA	87.7	29.3	29.6	28.8	2.13	100.0	29.5	0.27	50	3.7	0.02	10	0.3	1.21	100	16.7	0.10	10	1.2	0.09	10	0.62	0.05	4.76
TMW / TSum		14 Stat.	0.0 N	0.0 N	0.0 N	0.0 N	90.79	50.0 N	0.0 N	15.16	0 N	0.0 N	1.42	0 N	0.0 N	46.47	70 N	0.0 N	5.19	0 N	0.0 N	4.77	0 N	0.00 N	2.12	2.38 N
Verfügbarkeit (%)							100.0					100.0			100.0			100.0			100.0			100.0		
HMW min. (Stat. Betrieb)			87.2	26.5	30.2	28.7	15.8	100.0	2.4	0.18	50	0.2	0.02	10	10.8	0.79	100	1.3	0.10	10	1.0	0.08	10	0.52	0.04	4.76
Zeit			14:30	14:30	18:00	16:00	23:30	14:30	16:00	16:00	14:30	20:00	16:30	14:30	20:00	20:00	14:30	16:00	14:30	14:30	20:00	18:00	14:30	21:30	14:30	14:30
HMW max. (Stat. Betrieb)			93.5	31.7	32.6	30.6	39.2	100.0	4.7	0.35	50	0.4	0.03	10	18.5	1.36	100	1.4	0.11	10	1.3	0.09	10	0.74	0.06	4.76
Zeit			20:30	20:30	15:00	18:00	16:30	14:30	18:00	18:00	14:30	14:30	14:30	14:30	23:30	23:30	14:30	14:30	23:00	14:30	14:30	14:30	14:30	17:00	17:00	14:30

TMW Bemerkung:

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 1,2-fach, 2-fach); a, a, b: Grenzwertüberschreitung mit Vertrauensbereich (1-fach, 1,2-fach, 2-fach); a, a, b
F: Meßwertfehler, W: Wartung, X: Störung, R: Rückbasen, O: Signal > 21 mA, U: Signal < 3,95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

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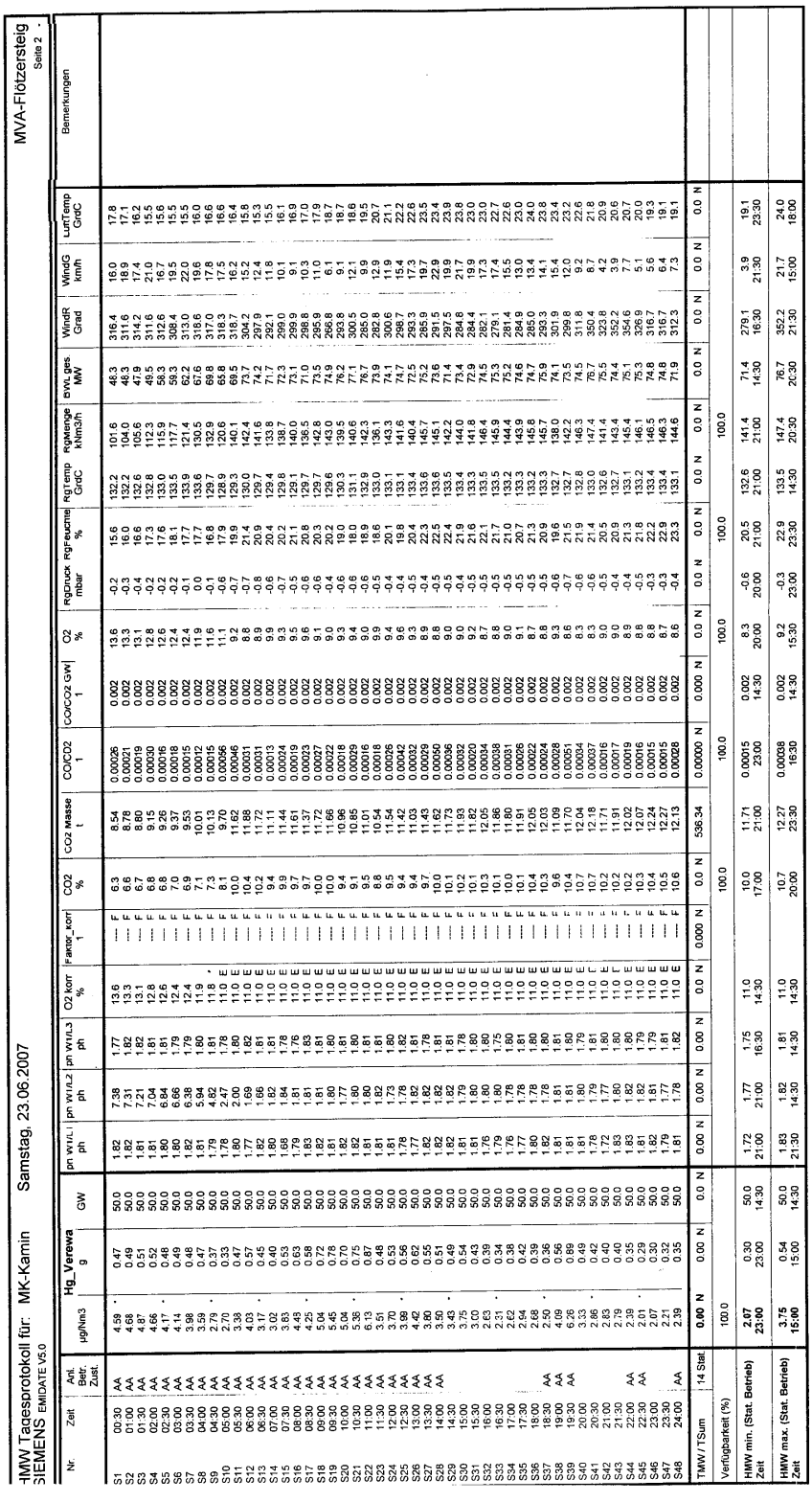
Operating Data provided by the Plant Operator

Annex 4.8



MW Tagesprotokoll für: MK-Kamin Samstag, 23.06.2007 — MVA-Flötzersteig

SIEMENS EMIDATE V5.0 — Seite 2

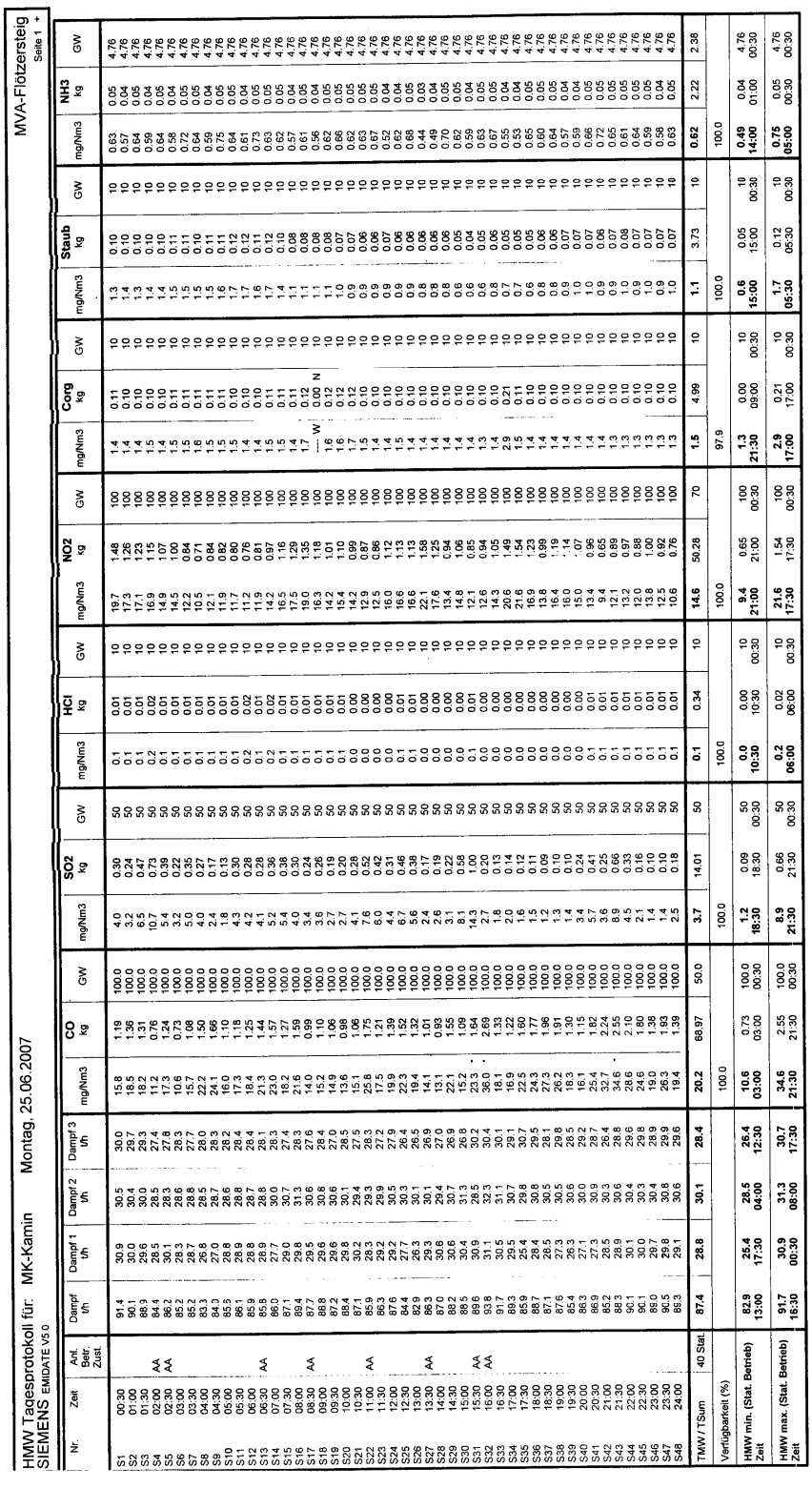
Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	GW	pH WW/L1 ph	pH WW/L2 ph	pH WW/L3 ph	O2 korr %	Faktor_korr 1	CO2 %	CO2 Masse t	CO/CO2 1	CO/CO2 GW 1	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	BVL ges MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	00:30	AA	4.59	0.47	50.0	1.82	7.38	1.77	13.6	---- F	6.3	8.54	0.00026	0.002	13.6	-0.2	15.6	132.2	101.6	46.3	316.4	16.0	17.8	
S2	01:00	AA	4.68	0.49	50.0	1.82	7.31	1.82	13.3	---- F	6.6	8.78	0.00031	0.002	13.3	-0.3	16.0	132.3	104.6	48.3	311.6	18.9	17.1	
S3	01:30	AA	4.67	0.51	50.0	1.81	7.21	1.81	12.8	---- F	6.7	8.80	0.00019	0.002	13.1	-0.4	16.6	132.6	105.6	47.9	314.2	17.4	16.2	
S4	02:00	AA	4.66	0.51	50.0	1.81	7.21	1.81	12.8	---- F	6.8	9.15	0.00030	0.002	12.8	-0.2	17.3	132.8	112.3	49.5	311.6	21.0	15.5	
S5	02:30	AA	4.55	0.48	50.0	1.80	6.84	1.81	12.6	---- F	6.8	9.26	0.00016	0.002	12.6	-0.2	17.6	133.0	115.9	58.3	312.6	16.7	15.6	
S6	03:00	AA	4.14	0.49	50.0	1.80	6.66	1.79	12.4	---- F	7.0	9.37	0.00018	0.002	12.4	-0.2	18.1	133.5	117.7	59.3	308.4	19.5	15.5	
S7	03:30	AA	3.98	0.48	50.0	1.82	6.38	1.79	12.4	---- F	6.9	9.53	0.00015	0.002	12.4	-0.1	17.7	133.9	121.4	62.2	313.0	22.0	15.5	
S8	04:00	AA	4.49	0.47	50.0	1.81	5.94	1.80	11.9	---- F	7.1	10.01	0.00012	0.002	11.9	0.0	17.7	133.6	130.5	67.6	318.6	19.6	16.0	
S9	04:30	AA	2.79	0.37	50.0	1.79	4.82	1.81	11.8	---- F	7.3	10.13	0.00015	0.002	11.6	-0.1	16.8	129.7	132.9	69.8	317.0	17.8	16.6	
S10	05:00	AA	3.59	0.33	50.0	1.78	2.47	1.78	11.0 E	---- F	8.1	9.70	0.00056	0.002	11.1	-0.6	17.9	128.9	120.6	65.8	318.3	17.5	16.6	
S11	05:30	AA	3.38	0.47	50.0	1.80	2.00	1.80	11.0 E	---- F	10.0	11.62	0.00046	0.002	8.2	-0.7	21.9	129.3	142.1	78.5	304.7	15.2	15.8	
S12	06:00	AA	4.03	0.57	50.0	1.77	1.69	1.82	11.0 E	---- F	10.4	11.88	0.00031	0.002	8.8	-0.8	20.9	129.7	141.6	74.2	297.9	12.4	15.3	
S13	06:30	AA	3.17	0.45	50.0	1.80	1.82	1.81	11.0 E	---- F	10.2	11.72	0.00013	0.002	9.9	-0.6	20.4	129.4	133.8	71.7	292.1	11.8	15.5	
S14	07:00	AA	3.40	0.52	50.0	1.80	1.82	1.81	11.0 E	---- F	9.4	11.11	0.00019	0.002	9.5	-0.5	21.1	129.1	140.0	73.1	299.9	9.1	16.9	
S15	07:30	AA	3.83	0.53	50.0	1.66	1.84	1.78	11.0 E	---- F	9.9	11.44	0.00024	0.002	9.3	-0.7	20.2	129.8	138.7	72.3	299.0	10.1	16.1	
S16	08:00	AA	4.43	0.63	50.0	1.79	1.81	1.76	11.0 E	---- F	9.7	11.61	0.00019	0.002	9.5	-0.5	21.1	129.1	140.0	73.1	299.9	9.1	16.9	
S17	08:30	AA	4.25	0.58	50.0	1.83	1.81	1.83	11.0 E	---- F	9.7	11.37	0.00023	0.002	9.6	-0.6	20.8	129.7	136.5	71.0	298.8	10.3	17.0	
S18	09:00	AA	5.04	0.72	50.0	1.82	1.81	1.81	11.0 E	---- F	10.0	11.72	0.00027	0.002	9.1	-0.6	20.3	129.7	142.8	73.5	295.9	11.0	17.9	
S19	09:30	AA	5.45	0.78	50.0	1.81	1.80	1.80	11.0 E	---- F	10.0	11.66	0.00022	0.002	9.0	-0.4	20.2	129.6	143.0	74.9	296.8	9.1	18.7	
S20	10:00	AA	5.04	0.70	50.0	1.82	1.77	1.81	11.0 E	---- F	9.4	10.86	0.00018	0.002	9.3	-0.6	19.0	130.3	140.5	76.2	300.5	12.1	18.6	
S21	10:30	AA	5.36	0.75	50.0	1.82	1.80	1.80	11.0 E	---- F	9.1	11.01	0.00016	0.002	9.0	-0.6	18.9	132.9	142.3	76.7	285.0	9.9	19.5	
S22	11:00	AA	6.13	0.87	50.0	1.81	1.81	1.81	11.0 E	---- F	8.8	10.54	0.00018	0.002	9.9	-0.5	18.6	133.0	136.1	73.9	282.8	12.9	20.7	
S23	11:30	AA	5.51	0.48	50.0	1.81	1.82	1.80	11.0 E	---- F	9.5	11.54	0.00026	0.002	9.4	-0.4	20.1	133.1	143.3	74.1	300.6	11.9	21.1	
S24	12:00	AA	3.70	0.53	50.0	1.81	1.73	1.82	11.0 E	---- F	9.4	11.42	0.00042	0.002	9.6	-0.4	19.8	133.1	141.6	74.7	298.7	15.4	22.2	
S25	12:30	AA	3.99	0.56	50.0	1.78	1.78	1.82	11.0 E	---- F	9.4	11.03	0.00032	0.002	9.3	-0.5	20.4	133.4	140.4	72.5	293.3	17.3	22.6	
S26	13:00	AA	4.42	0.62	50.0	1.77	1.82	1.81	11.0 E	---- F	9.7	11.43	0.00029	0.002	8.9	-0.4	22.3	133.6	145.7	75.2	285.9	19.7	23.5	
S27	13:30	AA	3.80	0.55	50.0	1.82	1.78	1.81	11.0 E	---- F	10.0	11.62	0.00050	0.002	8.8	-0.5	22.5	133.6	145.1	73.6	291.5	22.9	23.4	
S28	14:00	AA	3.50	0.51	50.0	1.82	1.82	1.81	11.0 E	---- F	10.1	11.73	0.00036	0.002	8.8	-0.5	22.4	133.5	142.2	71.4	297.5	19.9	23.9	
S29	14:30	AA	3.43	0.49	50.0	1.82	1.82	1.81	11.0 E	---- F	10.1	11.73	0.00032	0.002	9.0	-0.5	21.9	133.4	144.0	73.4	284.6	21.7	23.8	
S30	15:00	AA	3.75	0.54	50.0	1.81	1.79	1.80	11.0 E	---- F	10.2	11.82	0.00020	0.002	9.2	-0.5	21.6	133.3	141.8	72.9	284.4	19.9	23.0	
S31	15:30	AA	3.63	0.52	50.0	1.81	1.80	1.80	11.0 E	---- F	10.3	12.05	0.00034	0.002	8.7	-0.5	22.1	133.5	146.4	74.5	282.1	17.3	23.0	
S32	16:00	AA	3.39	0.43	50.0	1.76	1.80	1.75	11.0 E	---- F	10.1	11.86	0.00038	0.002	8.8	-0.5	21.7	133.5	145.9	75.3	279.1	17.4	22.7	
S33	16:30	AA	2.31	0.34	50.0	1.79	1.78	1.80	11.0 E	---- F	10.0	11.80	0.00031	0.002	9.0	-0.5	21.0	133.2	144.4	75.2	281.4	15.5	22.6	
S34	17:00	AA	2.62	0.38	50.0	1.76	1.78	1.80	11.0 E	---- F	10.1	11.91	0.00026	0.002	9.1	-0.5	20.7	133.3	143.9	74.6	284.9	13.0	23.0	
S35	17:30	AA	2.54	0.42	50.0	1.77	1.78	1.81	11.0 E	---- F	10.3	12.03	0.00024	0.002	8.8	-0.5	20.9	133.3	145.8	74.7	285.0	13.4	24.0	
S36	18:00	AA	2.68	0.39	50.0	1.80	1.78	1.80	11.0 E	---- F	10.4	12.05	0.00022	0.002	8.7	-0.5	21.3	133.2	145.8	74.7	285.0	13.4	23.8	
S37	18:30	AA	2.50	0.36	50.0	1.82	1.78	1.80	11.0 E	---- F	10.3	12.03	0.00024	0.002	8.8	-0.5	20.9	133.3	145.7	75.9	283.3	14.1	23.8	
S38	19:00	AA	4.09	0.56	50.0	1.81	1.81	1.81	11.0 E	---- F	9.6	11.09	0.00028	0.002	8.6	-0.6	21.5	133.1	146.0	74.1	283.9	15.4	23.4	
S39	19:30	AA	6.26	0.89	50.0	1.81	1.81	1.80	11.0 E	---- F	10.4	12.04	0.00051	0.002	8.5	-0.7	21.5	132.7	142.0	73.5	299.8	12.4	23.2	
S40	20:00	AA	3.96	0.49	50.0	1.81	1.80	1.79	11.0 E	---- F	10.7	12.04	0.00034	0.002	8.3	-0.6	21.9	132.8	146.3	74.5	311.8	9.2	22.6	
S41	20:30	AA	2.48	0.42	50.0	1.78	1.79	1.81	11.0 E	---- F	10.7	12.18	0.00037	0.002	8.3	-0.6	21.4	133.0	147.4	76.7	350.4	8.7	21.8	
S42	21:00	AA	2.83	0.40	50.0	1.72	1.77	1.80	11.0 E	---- F	10.2	11.71	0.00016	0.002	9.0	-0.5	20.5	132.6	141.4	75.5	323.8	4.2	20.9	
S43	21:30	AA	2.79	0.40	50.0	1.83	1.80	1.80	11.0 E	---- F	10.2	11.91	0.00017	0.002	9.0	-0.4	20.9	132.7	143.4	74.4	352.2	3.9	20.6	
S44	22:00	AA	2.39	0.35	50.0	1.83	1.82	1.80	11.0 E	---- F	10.2	12.02	0.00019	0.002	8.9	-0.4	21.3	133.1	145.4	75.1	354.6	7.7	20.7	
S45	22:30	AA	2.01	0.29	50.0	1.81	1.82	1.79	11.0 E	---- F	10.3	12.07	0.00016	0.002	8.8	-0.5	21.8	133.2	146.1	75.3	326.9	5.1	20.0	
S46	23:00	AA	2.07	0.30	50.0	1.82	1.81	1.79	11.0 E	---- F	10.4	12.24	0.00015	0.002	8.8	-0.3	22.2	133.4	146.5	74.8	316.7	5.6	19.3	
S47	23:30	AA	2.21	0.32	50.0	1.79	1.77	1.81	11.0 E	---- F	10.5	12.27	0.00015	0.002	8.7	-0.3	22.9	133.4	146.3	74.8	315.7	6.4	19.1	
S48	24:00	AA	2.39	0.35	50.0	1.81	1.78	1.82	11.0 E	---- F	10.6	12.13	0.00028	0.002	8.6	-0.4	23.3	133.1	144.6	71.9	312.3	7.3	18.1	
TMW / TSum	14 Stat.		0.00 N	0.00 N	0.0 N	0.00 N	0.00 N	0.00 N	0.0 N	0.000 N	0.0 N	536.34	0.00000 N	0.000 N	0.0 N	0.0 N	0.0 N	0.0 N	0.0 N	0.0 N	0.0 N	0.0 N	0.0 N	
Verfügbarkeit (%)			100.0						100.0			100.0		100.0			100.0							
HMW min. (Stat. Betrieb)			2.07	0.30	50.0	1.72	1.77	1.75	11.0		10.0	11.71	0.00015	0.002	8.3	-0.6	20.5	132.6	141.4	71.4	279.1	3.9	19.1	
Zeit			23:00	23:00	14:30	21:00	21:00	16:30	14:30		17:00	21:00	14:30	20:00	20:00	21:00	21:00	21:00	14:30	14:30	16:30	21:30	23:30	
HMW max. (Stat. Betrieb)			3.75	0.54	50.0	1.83	1.82	1.81	11.0		10.7	12.27	0.00038	0.002	9.2	-0.3	22.9	133.5	147.4	76.7	352.2	21.7	24.0	
Zeit			15:00	15:00	14:30	21:30	14:30	14:30	14:30		20:00	23:30	16:30	14:30	15:30	23:00	23:30	14:30	20:30	20:30	21:30	15:00	18:00	

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 2-fach), a, b: Grenzwertüberschreitung mit Vertrauensbereich (1-fach, 2-fach)
F: Messwertfehler, W: Wartung, A: Störung, R: Rückblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:01:36

Operating Data provided by the Plant Operator

Annex 4.9



HMW Tagesprotokoll für: MK-Kamin Montag, 25.06.2007 — MVA-Flötzersteig
SIEMENS EMIDATE V5.0 — Seite 1

Nr.	Zeit	Dampf t/h	Dampf 1 t/h	Dampf 2 t/h	Dampf 3 t/h	CO mg/Nm3	CO kg	CO GW	SO2 mg/Nm3	SO2 kg	SO2 GW	HCl mg/Nm3	HCl kg	HCl GW	NO2 mg/Nm3	NO2 kg	NO2 GW	Corg mg/Nm3	Corg kg	Corg GW	Staub mg/Nm3	Staub kg	Staub GW	NH3 mg/Nm3	NH3 kg	NH3 GW
S1	00:30	91.4	30.9	30.5	30.0	15.8	1.19	100.0	4.0	0.30	50	0.1	0.01	10	19.7	1.48	100	1.4	0.11	10	1.3	0.10	10	0.63	0.05	4.76
S2	01:00	90.1	30.0	30.4	29.7	18.5	1.38	100.0	3.2	0.24	50	0.1	0.01	10	17.3	1.26	100	1.4	0.10	10	1.4	0.10	10	0.57	0.04	4.76
S3	01:30	88.9	29.6	30.0	29.3	19.2	1.41	100.0	6.5	0.47	50	0.1	0.01	10	17.1	1.23	100	1.5	0.10	10	1.3	0.10	10	0.64	0.05	4.76
S4	02:00	84.4	28.5	28.5	27.4	10.7	0.76	100.0	10.7	0.73	50	0.2	0.02	10	16.9	1.15	100	1.5	0.10	10	1.4	0.10	10	0.59	0.04	4.76
S5	02:30	86.2	30.1	28.5	27.8	17.3	1.24	100.0	5.4	0.39	50	0.1	0.01	10	14.9	1.07	100	1.4	0.10	10	1.4	0.10	10	0.64	0.05	4.76
S6	03:00	85.2	28.3	28.6	28.3	10.6	0.73	100.0	3.2	0.22	50	0.1	0.01	10	14.5	1.00	100	1.5	0.11	10	1.5	0.11	10	0.58	0.04	4.76
S7	03:30	85.2	28.7	28.8	27.7	15.7	1.08	100.0	5.0	0.35	50	0.1	0.01	10	12.2	0.84	100	1.5	0.11	10	1.5	0.11	10	0.72	0.05	4.76
S8	04:00	83.3	26.8	28.5	28.0	22.2	1.50	100.0	4.0	0.27	50	0.1	0.01	10	10.5	0.71	100	1.6	0.11	10	1.5	0.10	10	0.64	0.04	4.76
S9	04:30	84.0	27.0	28.7	28.3	24.1	1.66	100.0	2.4	0.17	50	0.1	0.01	10	12.1	0.84	100	1.5	0.11	10	1.5	0.11	10	0.59	0.04	4.76
S10	05:00	85.5	28.8	28.6	28.2	16.0	1.10	100.0	1.8	0.13	50	0.1	0.01	10	11.9	0.82	100	1.5	0.11	10	1.5	0.11	10	0.75	0.05	4.76
S11	05:30	86.1	28.9	28.8	28.4	17.3	1.18	100.0	4.3	0.30	50	0.2	0.02	10	11.2	0.76	100	1.4	0.10	10	1.7	0.12	10	0.61	0.04	4.76
S12	06:00	85.9	28.8	28.4	28.4	18.4	1.25	100.0	4.2	0.28	50	0.1	0.01	10	11.9	0.81	100	1.4	0.10	10	1.7	0.12	10	0.73	0.05	4.76
S13	06:30	85.8	28.9	28.8	28.1	23.0	1.57	100.0	5.2	0.36	50	0.2	0.02	10	14.2	0.97	100	1.5	0.11	10	1.7	0.12	10	0.63	0.05	4.76
S14	07:00	87.7	30.0	30.7	27.4	18.2	1.27	100.0	5.4	0.38	50	0.1	0.01	10	16.5	1.16	100	1.5	0.11	10	1.4	0.10	10	0.62	0.05	4.76
S15	07:30	87.1	29.0	30.7	27.4	21.6	1.59	100.0	4.0	0.30	50	0.1	0.01	10	17.5	1.29	100	1.4	0.11	10	1.1	0.08	10	0.57	0.04	4.76
S16	08:00	89.4	29.8	31.3	27.6	14.0	0.99	100.0	3.4	0.24	50	0.1	0.01	10	19.0	1.35	100	1.7	0.12	10	1.1	0.08	10	0.61	0.04	4.76
S17	08:30	87.7	29.5	30.6	27.6	15.2	1.10	100.0	3.6	0.26	50	0.1	0.01	10	16.3	1.18	100	1.6	0.00 N	10	1.1	0.08	10	0.56	0.04	4.76
S18	09:00	88.8	29.6	30.8	28.4	14.9	1.06	100.0	2.7	0.19	50	0.1	0.01	10	14.2	1.01	100	1.6	0.12	10	1.1	0.08	10	0.62	0.05	4.76
S19	09:30	87.2	29.6	30.6	27.0	13.6	0.98	100.0	2.7	0.20	50	0.0	0.00	10	15.4	1.10	100	1.7	0.12	10	1.0	0.07	10	0.62	0.05	4.76
S20	10:00	88.4	29.8	30.1	28.5	15.1	1.08	100.0	4.1	0.29	50	0.0	0.00	10	14.2	0.99	100	1.5	0.12	10	0.9	0.07	10	0.62	0.05	4.76
S21	10:30	87.1	30.2	29.4	27.5	25.1	1.75	100.0	7.6	0.52	50	0.0	0.00	10	12.9	0.87	100	1.4	0.10	10	0.9	0.06	10	0.63	0.05	4.76
S22	11:00	85.9	29.3	29.3	27.2	17.5	1.21	100.0	6.0	0.42	50	0.0	0.00	10	12.5	0.86	100	1.4	0.10	10	0.9	0.06	10	0.67	0.05	4.76
S23	11:30	86.3	29.2	28.9	27.9	19.9	1.39	100.0	4.4	0.31	50	0.0	0.00	10	16.0	1.12	100	1.4	0.10	10	0.9	0.07	10	0.52	0.04	4.76
S24	12:00	87.6	29.2	30.5	27.9	22.3	1.52	100.0	6.7	0.46	50	0.1	0.01	10	16.6	1.13	100	1.5	0.10	10	0.9	0.06	10	0.62	0.04	4.76
S25	12:30	84.4	27.7	30.3	26.4	19.4	1.32	100.0	5.6	0.38	50	0.1	0.01	10	16.6	1.13	100	1.4	0.10	10	0.9	0.06	10	0.68	0.05	4.76
S26	13:00	82.9	26.3	30.1	26.5	14.1	1.01	100.0	2.4	0.17	50	0.0	0.00	10	22.1	1.58	100	1.4	0.10	10	0.8	0.06	10	0.44	0.03	4.76
S27	13:30	86.3	29.3	30.1	26.9	13.1	0.93	100.0	2.6	0.19	50	0.0	0.00	10	17.6	1.25	100	1.4	0.10	10	0.8	0.06	10	0.44	0.04	4.76
S28	14:00	87.0	30.6	29.4	27.0	22.1	1.55	100.0	4.1	0.29	50	0.0	0.00	10	13.4	0.94	100	1.4	0.10	10	0.8	0.06	10	0.70	0.05	4.76
S29	14:30	88.2	30.6	30.7	26.9	15.1	1.06	100.0	8.1	0.58	50	0.0	0.00	10	14.8	1.06	100	1.4	0.10	10	0.6	0.05	10	0.62	0.05	4.76
S30	15:00	88.5	30.4	31.3	26.8	23.2	1.64	100.0	14.3	1.00	50	0.1	0.01	10	12.1	0.85	100	1.4	0.10	10	0.6	0.04	10	0.59	0.04	4.76
S31	15:30	89.6	30.9	32.3	30.4	36.0	2.69	100.0	2.7	0.20	50	0.0	0.00	10	12.6	0.94	100	1.3	0.10	10	0.6	0.05	10	0.63	0.05	4.76
S32	16:00	91.8	31.3	30.5	30.1	18.1	1.33	100.0	1.8	0.13	50	0.0	0.00	10	14.3	1.05	100	1.4	0.10	10	0.8	0.06	10	0.67	0.05	4.76
S33	16:30	91.7	29.5	31.1	30.7	16.9	1.22	100.0	2.0	0.14	50	0.0	0.00	10	20.6	1.49	100	2.9	0.21	10	0.7	0.05	10	0.55	0.04	4.76
S34	17:00	89.3	29.1	30.7	29.8	22.5	1.60	100.0	1.6	0.12	50	0.0	0.00	10	21.6	1.54	100	1.5	0.11	10	0.7	0.05	10	0.53	0.04	4.76
S35	17:30	85.9	25.4	29.8	30.7	24.3	1.77	100.0	1.5	0.11	50	0.0	0.00	10	16.9	1.23	100	1.4	0.10	10	0.6	0.05	10	0.65	0.05	4.76
S36	18:00	88.7	28.4	30.5	29.5	27.3	1.96	100.0	1.2	0.09	50	0.0	0.00	10	13.8	0.99	100	1.4	0.10	10	0.6	0.04	10	0.64	0.05	4.76
S37	18:30	87.1	28.5	30.5	28.1	26.2	1.91	100.0	1.3	0.10	50	0.0	0.00	10	15.4	1.19	100	1.4	0.10	10	0.8	0.06	10	0.57	0.04	4.76
S38	19:00	87.6	27.3	30.5	29.8	18.3	1.35	100.0	1.4	0.10	50	0.0	0.00	10	16.0	1.14	100	1.4	0.10	10	0.9	0.07	10	0.59	0.04	4.76
S39	19:30	85.4	26.3	30.6	28.5	18.1	1.35	100.0	3.4	0.24	50	0.0	0.00	10	15.0	1.07	100	1.4	0.10	10	1.0	0.07	10	0.66	0.05	4.76
S40	20:00	86.3	27.1	30.9	28.7	25.4	1.82	100.0	5.7	0.41	50	0.1	0.01	10	13.4	0.96	100	1.4	0.10	10	1.0	0.07	10	0.72	0.05	4.76
S41	20:30	85.2	28.5	30.3	26.4	32.7	2.24	100.0	3.6	0.25	50	0.1	0.01	10	9.4	0.65	100	1.4	0.10	10	0.9	0.06	10	0.72	0.05	4.76
S42	21:00	88.3	28.9	30.6	29.6	34.6	2.55	100.0	8.9	0.66	50	0.1	0.01	10	12.1	0.89	100	1.3	0.10	10	0.9	0.07	10	0.65	0.05	4.76
S43	21:30	90.1	30.1	30.4	29.6	28.6	2.10	100.0	4.5	0.33	50	0.1	0.01	10	13.2	0.97	100	1.3	0.10	10	1.0	0.08	10	0.61	0.05	4.76
S44	22:00	90.1	30.0	30.3	29.8	24.6	1.80	100.0	2.1	0.16	50	0.1	0.01	10	12.0	0.88	100	1.3	0.10	10	0.9	0.07	10	0.64	0.05	4.76
S45	22:30	89.7	29.7	30.4	28.9	19.0	1.38	100.0	1.4	0.10	50	0.1	0.01	10	13.8	1.02	100	1.3	0.10	10	0.9	0.07	10	0.58	0.04	4.76
S46	23:00	90.5	29.8	30.8	29.9	26.3	1.93	100.0	1.4	0.10	50	0.1	0.01	10	13.5	0.99	100	1.3	0.10	10	0.9	0.07	10	0.63	0.05	4.76
S47	23:30	88.3	29.1	30.6	29.6	19.4	1.39	100.0	2.5	0.18	50	0.1	0.01	10	10.6	0.76	100	1.3	0.10	10	1.0	0.07	10			
S48	24:00																									
TMW / TSum	40 Stat.	87.4	28.8	30.1	28.4	20.2	68.97	50.0	3.7	14.01	50	0.1	0.34	10	14.6	50.28	70	1.5	4.99	10	1.1	3.73	10	0.62	2.22	2.38
Verfügbarkeit (%)						100.0			100.0			100.0			100.0			97.9			100.0			100.0		
HMW min. (Stat. Betrieb)		82.9	25.4	28.5	26.4	10.6	0.73	100.0	1.2	0.09	50	0.0	0.00	10	9.4	0.65	100	1.3	0.00	10	0.5	0.05	10	0.49	0.04	4.76
Zeit		13:00	17:30	04:00	12:30	03:00	03:00	00:30	18:30	18:30	00:30	10:30	10:30	00:30	21:00	21:00	00:30	21:30	09:00	00:30	15:00	15:00	00:30	14:00	01:00	00:30
HMW max. (Stat. Betrieb)		91.7	30.9	31.3	30.7	34.6	2.55	100.0	8.9	0.66	50	0.2	0.02	10	21.6	1.54	100	2.9	0.21	10	1.7	0.12	10	0.75	0.05	4.76
Zeit		16:30	00:30	08:00	17:30	21:30	21:30	00:30	21:30	21:30	00:30	06:00	06:00	00:30	17:30	17:30	00:30	17:00	17:00	00:30	05:30	05:30	00:30	05:00	05:00	00:30

TMW Bemerkung:

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = An-/Abfahrbetrieb, "" = Normalbetrieb
Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1,2-fach, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1,2-fach)
E: Messwertfehler, V: Abschaltung, X: Störung, R: Rußbasen, O: Signal > 21 mA, U: Signal < 3,95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:01:54

Operating Data provided by the Plant Operator

Annex 4.10

HMW Tagesprotokoll für: MK-Kamin Montag, 25.06.2007 MVA-Flötzersteig
SIEMENS EMIDATE V5.0 Seite 2 -

Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	Hg_Verewa GW	pH W1/L1 ph	pH W1/L2 ph	pH W1/L3 ph	O2 korr %	Faktor_korr 1	CO2 %	CO2 Masse t	CO/CO2 1
S1	00:30		3.02 *	0.45	50.0	1.76	1.80	1.81	11.0 E	--- F	10.7	12.27	0.00015
S2	01:00		3.44	0.50	50.0	1.79	1.77	1.80	11.0 E	--- F	10.4	11.96	0.00018
S3	01:30		3.85	0.55	50.0	1.81	1.81	1.79	11.0 E	--- F	10.3	11.70	0.00017
S4	02:00	AA	3.80	0.52	50.0	1.82	1.81	1.80	11.0 E	--- F	9.8	11.13	0.00011
S5	02:30	AA	3.65 *	0.52	50.0	1.82	1.80	1.78	11.0 E	--- F	10.4	11.67	0.00017
S6	03:00		4.12	0.57	50.0	1.80	1.81	1.81	11.0 E	--- F	10.0	11.24	0.00010
S7	03:30		4.20	0.58	50.0	1.79	1.78	1.81	11.0 E	--- F	10.0	11.23	0.00015
S8	04:00		4.52	0.61	50.0	1.81	1.81	1.80	11.0 E	--- F	9.8	10.95	0.00021
S9	04:30		4.34 *	0.60	50.0	1.81	1.79	1.79	11.0 E	--- F	10.1	11.21	0.00023
S10	05:00		4.31	0.59	50.0	1.80	1.80	1.79	11.0 E	--- F	10.1	11.24	0.00015
S11	05:30		3.93	0.53	50.0	1.79	1.78	1.80	11.0 E	--- F	10.0	11.14	0.00017
S12	06:00		3.45	0.47	50.0	1.79	1.80	1.80	11.0 E	--- F	10.0	11.14	0.00018
S13	06:30	AA	3.12 *	0.42	50.0	1.78	1.79	1.80	11.0 E	--- F	10.0	11.20	0.00020
S14	07:00		3.59	0.49	50.0	1.83	1.81	1.79	11.0 E	--- F	9.9	11.32	0.00022
S15	07:30		3.75	0.53	50.0	1.72	1.75	1.80	11.0 E	--- F	10.2	11.61	0.00017
S16	08:00		3.62	0.53	50.0	1.76	1.81	1.82	11.0 E	--- F	10.5	12.09	0.00021
S17	08:30	AA	3.66 *	0.52	50.0	1.83	1.82	1.81	11.0 E	--- F	10.1	11.71	0.00013
S18	09:00		4.20	0.61	50.0	1.88	1.98	1.80	11.0 E	--- F	10.3	11.95	0.00014
S19	09:30		4.22	0.60	50.0	1.78	1.71	1.81	11.0 E	--- F	10.2	11.75	0.00014
S20	10:00		4.15	0.59	50.0	1.77	1.81	1.79	11.0 E	--- F	10.2	11.76	0.00013
S21	10:30		3.59 *	0.50	50.0	1.74	1.83	1.79	11.0 E	--- F	10.0	11.57	0.00014
S22	11:00	AA	4.40	0.59	50.0	1.79	1.79	1.80	11.0 E	--- F	9.6	11.04	0.00025
S23	11:30		3.82	0.53	50.0	1.82	1.77	1.82	11.0 E	--- F	9.9	11.23	0.00017
S24	12:00		3.77	0.52	50.0	1.81	1.80	1.78	11.0 E	--- F	10.0	11.37	0.00019
S25	12:30		3.59 *	0.49	50.0	1.81	1.83	1.81	11.0 E	--- F	9.9	11.29	0.00021
S26	13:00		4.00	0.55	50.0	1.82	1.81	1.81	11.0 E	--- F	10.1	11.22	0.00019
S27	13:30	AA	3.43	0.49	50.0	1.81	1.82	1.79	11.0 E	--- F	10.2	11.74	0.00013
S28	14:00		3.22	0.46	50.0	1.79	1.78	1.81	11.0 E	--- F	10.0	11.60	0.00013
S29	14:30		4.19 *	0.59	50.0	1.81	1.76	1.80	11.0 E	--- F	9.8	11.24	0.00022
S30	15:00		4.23	0.60	50.0	1.81	1.80	1.82	11.0 E	--- F	9.7	11.20	0.00015
S31	15:30	AA	6.66	0.93	50.0	1.80	1.81	1.77	11.0 E	--- F	9.5	11.02	0.00023
S32	16:00	AA	6.32	0.94	50.0	1.77	1.80	1.78	11.0 E	--- F	10.2	11.79	0.00036
S33	16:30		3.68 *	0.54	50.0	1.75	1.82	1.82	11.0 E	--- F	10.2	11.82	0.00018
S34	17:00		4.04	0.58	50.0	1.81	1.82	1.81	11.0 E	--- F	10.0	11.71	0.00016
S35	17:30		3.72	0.53	50.0	1.83	1.81	1.79	11.0 E	--- F	9.9	11.52	0.00022
S36	18:00		4.68	0.68	50.0	1.81	1.79	1.79	11.0 E	--- F	10.0	11.72	0.00024
S37	18:30		4.37 *	0.63	50.0	1.82	1.78	1.82	11.0 E	--- F	9.9	11.50	0.00027
S38	19:00		5.09	0.74	50.0	1.82	1.79	1.79	11.0 E	--- F	10.2	11.76	0.00025
S39	19:30		4.42	0.63	50.0	1.82	1.80	1.82	11.0 E	--- F	10.1	11.50	0.00018
S40	20:00		3.88	0.55	50.0	1.80	1.82	1.78	11.0 E	--- F	10.2	11.65	0.00015
S41	20:30		4.34 *	0.62	50.0	1.81	1.79	1.79	11.0 E	--- F	10.1	11.65	0.00025
S42	21:00		6.49	0.89	50.0	1.80	1.78	1.80	11.0 E	--- F	10.0	11.13	0.00032
S43	21:30		10.61	1.56	50.0	1.76	1.80	1.79	11.0 E	--- F	10.6	11.88	0.00033
S44	22:00		10.18	1.49	50.0	1.71	1.77	1.75	11.0 E	--- F	10.5	11.92	0.00028
S45	22:30		6.05 *	0.88	50.0	1.67	1.76	1.73	11.0 E	--- F	10.5	11.92	0.00024
S46	23:00		5.60	0.81	50.0	1.84	1.83	1.86	11.0 E	--- F	10.4	11.66	0.00018
S47	23:30		5.42	0.79	50.0	1.84	1.83	1.85	11.0 E	--- F	10.2	11.63	0.00026
S48	24:00		5.18	0.74	50.0	1.83	1.81	1.82	11.0 E	--- F	10.1	11.37	0.00019
TMW / TSum		40 Stat.	**4.52**	0.64	50.0	1.80	1.80	1.80	11.0	--- F	10.1	552.92	0.00019
Verfügbarkeit (%)			100.0								100.0		100.0
HMW min. (Stat. Betrieb) Zeit			**3.02 00:30**	0.45 00:30	50.0 00:30	1.67 22:30	1.71 09:30	1.73 22:30	11.0 00:30		9.7 15:00	10.95 04:00	0.00010 03:00
HMW max. (Stat. Betrieb) Zeit			**10.61 21:30**	1.56 21:30	50.0 00:30	1.88 09:00	1.98 09:00	1.86 23:00	11.0 00:30		10.7 00:30	12.27 00:30	0.00033 21:30

Nr.	CO/CO2 GW 1	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	BWL ges. MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	0.002	8.2	-0.3	23.5	133.3	150.3	74.9	130.8	2.9	23.4	
S2	0.002	8.5	-0.3	23.0	133.1	146.3	74.0	155.1	3.1	23.2	
S3	0.002	8.7	-0.3	23.3	133.1	143.2	72.9	115.0	3.9	22.8	
S4	0.002	9.3	-0.3	22.6	133.0	135.6	69.1	141.6	2.5	22.3	
S5	0.002	8.5	-0.4	23.1	132.7	143.0	70.7	92.5	3.6	21.7	
S6	0.002	9.0	-0.4	23.0	132.7	137.4	69.8	66.1	2.0	21.5	
S7	0.002	9.0	-0.4	22.8	132.6	137.7	69.8	76.6	1.0	21.2	
S8	0.002	9.2	-0.4	22.3	132.5	134.5	68.4	42.6	1.3	21.1	
S9	0.002	8.9	-0.4	22.7	132.3	137.9	69.0	75.3	1.5	20.5	
S10	0.002	8.9	-0.5	22.1	132.4	137.7	70.1	67.3	8.7	19.7	
S11	0.002	9.0	-0.6	21.4	132.1	136.1	70.6	9.8	6.8	19.7	
S12	0.002	9.1	-0.7	20.7	132.0	135.9	70.4	314.0	18.6	18.5	
S13	0.002	9.2	-0.7	20.3	132.0	135.2	70.4	309.6	7.3	19.1	
S14	0.002	9.3	-0.7	20.6	132.1	136.7	70.5	312.8	21.1	18.7	
S15	0.002	9.0	-0.6	21.7	132.4	140.1	71.5	313.9	18.6	19.4	
S16	0.002	8.5	-0.6	22.2	132.7	147.3	73.2	313.2	14.0	20.1	
S17	0.002	9.0	-0.4	22.6	133.1	141.5	71.9	267.8	4.2	20.7	
S18	0.002	8.8	-0.3	22.5	133.0	144.9	72.9	305.6	6.1	21.7	
S19	0.002	8.9	-0.4	22.4	133.0	142.4	71.6	321.1	7.9	23.0	
S20	0.002	8.9	-0.2	22.4	131.4	143.1	72.4	302.2	2.3	24.5	
S21	0.002	9.2	-0.2	21.5	129.8	139.5	71.5	62.0	3.8	25.6	
S22	0.002	9.5	-0.2	20.8	130.1	135.2	70.4	54.8	5.0	26.1	
S23	0.002	9.1	-0.3	21.1	130.4	137.9	70.7	71.3	5.3	26.1	
S24	0.002	9.0	-0.3	21.9	130.2	139.2	71.9	100.8	6.0	26.1	
S25	0.002	9.3	-0.2	22.5	130.1	136.4	69.3	126.8	5.6	26.9	
S26	0.002	9.0	-0.4	22.9	130.2	136.3	67.9	128.1	7.8	27.0	
S27	0.002	8.9	-0.2	23.1	129.7	143.0	70.8	110.8	6.7	27.3	
S28	0.002	9.0	-0.2	21.8	130.1	141.7	71.3	152.9	5.6	27.7	
S29	0.002	9.1	-0.2	21.3	130.6	140.1	72.3	163.5	6.2	28.2	
S30	0.002	8.9	-0.1	21.9	130.6	142.6	72.7	178.8	3.7	29.3	
S31	0.002	9.2	-0.2	20.7	130.6	140.2	73.4	169.2	4.9	29.8	
S32	0.002	8.4	-0.2	20.6	131.0	149.4	76.8	191.4	7.5	29.8	
S33	0.002	8.7	-0.2	20.8	133.5	146.2	75.2	163.6	6.5	30.1	
S34	0.002	9.0	-0.1	22.6	134.2	144.1	73.2	197.0	6.1	30.1	
S35	0.002	9.1	-0.1	23.0	134.0	142.1	70.4	198.8	7.7	30.2	
S36	0.002	8.9	-0.1	22.7	134.0	145.2	72.8	162.0	7.3	30.7	
S37	0.002	8.9	-0.2	22.8	133.8	143.4	71.3	138.9	9.7	30.2	
S38	0.002	8.7	-0.3	23.2	133.8	145.4	71.9	106.4	11.0	29.7	
S39	0.002	8.8	-0.3	22.8	133.4	141.9	69.9	122.2	10.3	29.6	
S40	0.002	8.8	-0.4	22.7	133.4	142.4	70.7	117.4	12.6	29.2	
S41	0.002	8.8	-0.3	22.6	133.5	143.2	71.2	113.2	11.0	28.7	
S42	0.002	9.0	-0.4	21.7	133.2	137.1	69.8	313.0	9.2	26.4	
S43	0.002	8.2	-0.5	22.6	133.1	147.3	72.4	336.8	14.0	21.3	
S44	0.002	8.4	-0.6	22.7	133.4	146.6	74.0	319.6	15.6	21.1	
S45	0.002	8.4	-0.4	22.4	133.3	145.9	73.9	292.0	2.0	20.6	
S46	0.002	8.4	-0.4	22.5	133.0	145.0	72.9	34.6	2.4	20.3	
S47	0.002	8.4	-0.4	22.1	133.0	146.4	74.2	303.5	1.8	19.7	
S48	0.002	8.6	-0.4	21.3	132.8	143.1	73.3	291.3	4.3	18.5	
TMW / TSum	0.002	8.8	-0.4	22.3	132.5	141.8	71.7	177.9	7.4	24.3	
Verfügbarkeit (%)		100.0		100.0		100.0					
HMW min. (Stat. Betrieb) Zeit	0.002 00:30	8.2 00:30	-0.7 06:00	20.6 07:00	129.8 10:30	134.5 04:00	67.9 13:00	9.8 05:30	1.0 03:30	18.5 06:00	
HMW max. (Stat. Betrieb) Zeit	0.002 00:30	9.3 07:00	-0.1 15:00	23.5 00:30	134.2 17:00	150.3 00:30	75.2 16:30	336.8 21:30	21.1 07:00	30.7 18:00	

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "--" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1.2-fach, 2-fach), g, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1.2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

Ausgedruckt am: 27.06.2007 um 07:01:56

Operating Data provided by the Plant Operator

Annex 4.11

HMW Tagesprotokoll für: MK-Kamin Dienstag, 26.06.2007 — MVA-Flötzersteig

SIEMENS EMIDATE V5.0 — Seite 1 +

Nr.	Zeit	Anl. Betr. Zust.	Dampf t/h	Dampf 1 t/h	Dampf 2 t/h	Dampf 3 t/h	mg/Nm3	CO kg	GW	mg/Nm3	SO2 kg	GW	mg/Nm3	HCl kg	GW	mg/Nm3	NO2 kg	GW	mg/Nm3	Corg kg	GW	mg/Nm3	Staub kg	GW	mg/Nm3	NH3 kg	GW
S1	00:30		89.3	29.1	30.4	29.8	20.7	1.53	100.0	2.9	0.22	50	0.1	0.01	10	13.4	0.99	100	1.3	0.10	10	1.0	0.08	10	0.58	0.05	4.76
S2	01:00		89.4	29.1	30.7	29.6	19.5	1.43	100.0	1.8	0.13	50	0.1	0.01	10	14.2	1.05	100	1.3	0.10	10	1.1	0.08	10	0.57	0.04	4.76
S3	01:30		89.7	29.2	30.4	30.1	18.1	1.33	100.0	1.8	0.13	50	0.1	0.01	10	12.6	0.93	100	1.3	0.10	10	1.1	0.08	10	0.62	0.05	4.76
S4	02:00		89.3	28.6	30.7	30.0	17.8	1.28	100.0	1.5	0.11	50	0.1	0.01	10	11.3	0.81	100	1.3	0.10	10	1.2	0.09	10	0.64	0.05	4.76
S5	02:30		88.7	28.9	30.3	29.5	18.9	1.34	100.0	2.3	0.16	50	0.1	0.01	10	10.6	0.75	100	1.3	0.09	10	1.3	0.09	10	0.60	0.04	4.76
S6	03:00		89.2	29.1	30.3	29.8	24.2	1.77	100.0	2.9	0.21	50	0.1	0.01	10	13.9	1.01	100	1.3	0.10	10	1.3	0.10	10	0.72	0.06	4.76
S7	03:30		87.4	27.4	30.3	29.7	23.6	1.70	100.0	3.6	0.26	50	0.1	0.01	10	16.7	1.21	100	1.3	0.10	10	1.5	0.11	10	0.67	0.05	4.76
S8	04:00		88.3	28.4	30.1	29.8	22.6	1.65	100.0	4.1	0.30	50	0.1	0.01	10	17.3	1.28	100	1.3	0.10	10	1.6	0.12	10	0.63	0.05	4.76
S9	04:30		89.4	29.2	30.3	29.9	13.7	1.02	100.0	4.2	0.31	50	0.1	0.01	10	18.5	1.37	100	1.3	0.10	10	1.5	0.11	10	0.56	0.04	4.76
S10	05:00		89.1	29.1	30.6	29.6	15.5	1.15	100.0	4.6	0.45	50	0.1	0.01	10	15.3	1.11	100	1.3	0.10	10	1.6	0.12	10	0.59	0.05	4.76
S11	05:30		87.5	28.9	30.7	29.2	19.8	1.44	100.0	3.4	0.25	50	0.1	0.01	10	15.7	1.16	100	1.3	0.10	10	1.6	0.12	10	0.56	0.04	4.76
S12	06:00		89.3	29.3	30.6	29.9	23.0	1.70	100.0	4.7	0.35	50	0.1	0.01	10	13.5	0.94	100	1.3	0.10	10	1.6	0.12	10	0.53	0.04	4.76
S13	06:30		86.1	27.4	30.2	28.5	13.7	0.96	100.0	7.7	0.54	50	0.1	0.01	10	17.2	1.27	100	1.3	0.10	10	1.6	0.11	10	0.70	0.05	4.76
S14	07:00		86.4	28.7	30.0	27.7	29.1	2.19	100.0	6.7	0.51	50	0.1	0.01	10	17.4	1.29	100	1.3	0.09	10	1.5	0.12	10	0.56	0.04	4.76
S15	07:30		88.8	29.9	29.8	29.6	18.5	1.37	100.0	5.5	0.41	50	0.1	0.01	10	17.2	1.27	100	1.3	0.10	10	1.5	0.11	10	0.54	0.04	4.76
S16	08:00		89.0	29.8	30.6	28.6	11.7	0.87	100.0	5.2	0.39	50	0.0	0.00	10	17.4	1.29	100	1.3	0.10	10	1.5	0.11	10	0.65	0.05	4.76
S17	08:30		89.3	30.2	30.4	28.4	11.3	0.83	100.0	2.7	0.20	50	0.0	0.00	10	15.5	1.13	100	1.3	0.09	10	1.6	0.12	10	0.59	0.05	4.76
S18	09:00		87.2	28.9	29.9	28.4	14.8	1.05	100.0	1.8	0.13	50	0.0	0.00	10	17.4	1.25	100	1.3	0.10	10	1.7	0.13	10	0.62	0.05	4.76
S19	09:30		89.7	29.3	30.5	29.3	14.0	1.01	100.0	1.9	0.13	50	0.0	0.00	10	16.1	1.03	100	1.4	0.09	10	1.7	0.12	10	0.68	0.05	4.76
S20	10:00	AA	89.3	28.9	30.5	28.1	21.7	1.50	100.0	1.8	0.13	50	0.0	0.00	10	16.0	1.02	100	1.3	0.09	10	1.8	0.11	10	0.55	0.04	4.76
S21	10:30		81.8	24.4	30.7	26.7	18.2	1.17	100.0	5.3	0.34	50	0.0	0.00	10	16.1	1.03	100	1.4	0.09	10	1.5	0.11	10	0.46	0.04	4.76
S22	11:00		85.4	26.2	31.0	28.2	16.8	1.18	100.0	5.7	0.40	50	0.0	0.00	10	16.0	1.12	100	1.3	0.10	10	1.5	0.11	10	0.52	0.04	4.76
S23	11:30		89.5	30.7	31.0	27.6	15.1	1.06	100.0	5.3	0.38	50	0.1	0.01	10	13.4	0.96	100	1.3	0.10	10	1.5	0.11	10	0.46	0.04	4.76
S24	12:00		91.8	30.6	31.0	30.2	26.1	1.88	100.0	4.7	0.34	50	0.2	0.02	10	12.8	0.92	100	1.3	0.10	10	1.5	0.11	10	0.52	0.04	4.76
S25	12:30		91.2	30.6	30.8	29.8	17.1	1.23	100.0	6.1	0.44	50	0.2	0.02	10	14.4	1.03	100	1.3	0.10	10	1.5	0.11	10	0.74	0.06	4.76
S26	13:00		91.3	30.7	31.0	29.6	21.9	1.60	100.0	6.7	0.49	50	0.2	0.02	10	17.5	1.27	100	1.3	0.10	10	1.5	0.11	10	0.65	0.04	4.76
S27	13:30		90.8	30.6	30.5	29.7	24.2	1.78	100.0	5.9	0.43	50	0.2	0.02	10	17.0	1.24	100	1.3	0.09	10	1.5	0.11	10	0.65	0.05	4.76
S28	14:00		91.1	30.5	30.5	30.1	28.1	2.06	100.0	4.2	0.31	50	0.2	0.02	10	18.1	1.33	100	1.3	0.10	10	1.5	0.11	10	0.59	0.05	4.76
S29	14:30		91.7	30.5	30.5	30.0	25.1	1.84	100.0	1.8	0.13	50	0.2	0.02	10	16.0	1.18	100	1.3	0.10	10	1.5	0.11	10	0.56	0.04	4.76
S30	15:00		91.5	31.1	30.3	30.1	29.9	2.14	100.0	4.1	0.30	50	0.2	0.02	10	11.5	0.83	100	1.2	0.09	10	1.5	0.11	10	0.63	0.05	4.76
S31	15:30		90.0	30.2	30.3	29.5	17.6	1.26	100.0	6.2	0.45	50	0.3	0.02	10	12.2	0.88	100	1.3	0.10	10	1.7	0.12	10	0.67	0.05	4.76
S32	16:00		89.5	30.3	30.1	29.1	32.9	2.44	100.0	2.7	0.20	50	0.3	0.02	10	18.2	1.35	100	1.7	0.13	10	1.7	0.13	10	0.58	0.05	4.76
S33	16:30		89.1	29.7	30.3	29.1	26.1	1.94	100.0	3.0	0.23	50	0.3	0.02	10	18.5	1.38	100	1.5	0.11	10	1.6	0.12	10	0.53	0.04	4.76
S34	17:00		89.5	29.5	30.6	29.4	21.7	1.58	100.0	4.5	0.33	50	0.3	0.02	10	14.6	1.06	100	1.7	0.13	10	1.6	0.12	10	0.64	0.05	4.76
S35	17:30		89.4	29.6	30.5	29.3	12.2	0.87	100.0	2.9	0.21	50	0.3	0.02	10	12.4	0.88	100	1.3	0.09	10	1.6	0.12	10	0.61	0.05	4.76
S36	18:00		89.9	29.9	30.1	29.9	18.8	1.36	100.0	4.2	0.30	50	0.3	0.02	10	13.9	1.00	100	1.3	0.10	10	1.5	0.11	10	0.61	0.05	4.76
S37	18:30		89.6	29.7	30.7	29.2	16.0	1.16	100.0	8.7	0.64	50	0.3	0.02	10	16.6	1.20	100	1.3	0.10	10	1.5	0.11	10	0.67	0.05	4.76
S38	19:00		89.4	29.7	30.4	29.1	15.3	1.09	100.0	2.5	0.18	50	0.4	0.03	10	14.7	1.05	100	1.3	0.10	10	1.5	0.11	10	0.61	0.05	4.76
S39	19:30		91.3	31.4	30.5	29.4	19.7	1.45	100.0	1.3	0.10	50	0.3	0.02	10	13.1	0.96	100	1.2	0.09	10	1.5	0.11	10	0.54	0.04	4.76
S40	20:00		90.1	30.2	30.4	29.5	20.2	1.42	100.0	1.1	0.08	50	0.3	0.02	10	12.2	0.86	100	1.3	0.09	10	1.5	0.11	10	0.64	0.05	4.76
S41	20:30		91.8	30.1	30.6	31.1	15.9	1.19	100.0	2.2	0.17	50	0.3	0.02	10	17.0	1.26	100	1.3	0.10	10	1.4	0.11	10	0.59	0.05	4.76
S42	21:00		91.4	30.9	30.2	30.3	13.5	0.98	100.0	2.3	0.17	50	0.3	0.02	10	14.4	1.04	100	1.3	0.10	10	1.4	0.10	10	0.59	0.05	4.76
S43	21:30		91.5	30.8	30.4	30.3	20.0	1.44	100.0	2.6	0.19	50	0.3	0.02	10	11.7	0.84	100	1.3	0.10	10	1.5	0.11	10	0.60	0.05	4.76
S44	22:00		90.7	30.0	30.3	30.3	11.3	0.80	100.0	4.2	0.30	50	0.3	0.02	10	13.2	0.93	100	1.3	0.09	10	1.5	0.10	10	0.63	0.05	4.76
S45	22:30		90.7	30.1	30.4	30.2	17.3	1.25	100.0	4.6	0.34	50	0.3	0.02	10	15.2	1.11	100	1.3	0.10	10	1.4	0.11	10	0.58	0.05	4.76
S46	23:00		92.7	32.1	30.6	30.1	23.3	1.64	100.0	4.2	0.31	50	0.3	0.02	10	11.1	0.82	100	1.3	0.09	10	1.5	0.11	10	0.64	0.05	4.76
S47	23:30		90.4	29.8	30.0	30.1	12.4	0.86	100.0	4.4	0.31	50	0.3	0.02	10	11.1	0.77	100	1.3	0.09	10	1.5	0.11	10	0.64	0.05	4.76
S48	24:00		89.9	29.0	30.5	30.4	16.4	1.17	100.0	4.9	0.35	50	0.3	0.02	10	13.2	0.94	100	1.3	0.10	10	1.6	0.12	10	0.57	0.04	4.76
TMW / TSum		47 Stat.	**89.6**	**29.7**	**30.4**	**29.5**	**19.3**	**66.96**	**50.0**	**3.9**	**13.65**	**50**	**0.2**	**0.67**	**10**	**14.7**	**5.30**	**70**	**1.3**	**4.72**	**10**	**1.5**	**5.30**	**10**	**0.61**	**2.27**	**2.38**
Verfügbarkeit (%)							100.0			100.0			100.0			100.0			100.0			100.0			100.0		
HMW min. (Stat. Betrieb)			**85.4**	**26.2**	**29.8**	**27.7**	**11.3**	0.80	100.0	**1.1**	0.08	50	**0.0**	0.00	10	**10.6**	0.75	100	**1.2**	0.09	10	**1.0**	0.08	10	**0.46**	0.04	4.76
Zeit			**11:00**	**11:00**	**07:30**	**07:00**	**08:30**	22:00	00:30	**20:00**	20:00	00:30	**08:00**	08:00	00:30	**02:30**	02:30	00:30	**04:30**	02:30	00:30	**00:30**	00:30	00:30	**11:30**	01:00	00:30
HMW max. (Stat. Betrieb)			**92.7**	**32.1**	**31.0**	**31.1**	**32.9**	2.44	100.0	**8.9**	0.64	50	**0.4**	0.03	10	**18.5**	1.38	100	**1.7**	0.13	10	**1.7**	0.13	10	**0.74**	0.06	4.76
Zeit			**23:00**	**23:00**	**11:00**	**20:30**	**16:00**	16:00	00:30	**18:30**	18:30	00:30	**19:00**	19:00	00:30	**05:00**	16:30	00:30	**16:00**	16:00	00:30	**09:00**	09:30	00:30	**12:30**	03:00	00:30

TMW Bemerkung:

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "-" = Stillstand, "AA" = Anf-/Abfahrbetrieb, " " = Normalbetrieb
G: A, B: Grenzwertüberschreitung ohne Vertrauensbereich (1-fach, 1,2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

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Operating Data provided by the Plant Operator

Annex 4.12

HMW Tagesprotokoll für: MK-Kamin Dienstag, 26.06.2007

SIEMENS EMIDATE V5.0

MVA-Flötzersteig

Seite 2 -

Nr.	Zeit	Anl. Betr. Zust.	Hg_Verewa µg/Nm3	Hg_Verewa g	Hg_Verewa GW	pn W1/L1 ph	pn W1/L2 ph	pn W1/L3 ph	O2 korr %	Faktor_korr 1	CO2 %	CO2 Masse t	CO/CO2 1	CO/CO2 GW 1	O2 %	RgDruck mbar	RgFeuchte %	RgTemp GrdC	RgMenge kNm3/h	BWL ges. MW	WindR Grad	WindG km/h	LuftTemp GrdC	Bemerkungen
S1	00:30		4.54 •	0.67	50.0	1.83	1.82	1.80	11.0 E	---- F	10.4	11.82	0.00020	0.002	8.3	-0.4	23.0	133.2	147.2	73.3	308.6	11.3	19.3	
S2	01:00		4.36	0.64	50.0	1.83	1.81	1.80	11.0 E	---- F	10.4	11.74	0.00019	0.002	8.3	-0.5	23.3	133.4	146.9	73.3	308.1	25.7	19.1	
S3	01:30		4.75	0.70	50.0	1.82	1.80	1.79	11.0 E	---- F	10.4	11.81	0.00018	0.002	8.4	-0.5	22.4	132.9	146.8	73.6	303.5	28.1	19.0	
S4	02:00		5.06	0.73	50.0	1.82	1.80	1.78	11.0 E	---- F	10.1	11.60	0.00017	0.002	8.7	-0.4	21.6	132.7	143.8	73.1	301.0	32.1	19.2	
S5	02:30		3.94 •	0.56	50.0	1.81	1.76	1.82	11.0 E	---- F	10.1	11.39	0.00018	0.002	8.8	-0.4	21.1	132.6	141.1	72.8	300.4	37.0	18.2	
S6	03:00		4.42	0.65	50.0	1.82	1.77	1.78	11.0 E	---- F	10.5	11.96	0.00023	0.002	8.4	-0.3	22.4	132.8	146.4	73.2	305.3	42.6	16.0	
S7	03:30		4.63	0.67	50.0	1.82	1.81	1.79	11.0 E	---- F	10.3	11.80	0.00023	0.002	8.7	-0.4	21.9	132.9	144.2	71.8	309.3	36.5	14.9	
S8	04:00		4.53	0.66	50.0	1.82	1.81	1.84	11.0 E	---- F	10.5	12.00	0.00022	0.002	8.5	-0.7	22.2	132.8	145.7	72.4	314.0	23.5	14.6	
S9	04:30		4.82 •	0.72	50.0	1.82	1.81	1.80	11.0 E	---- F	10.6	12.09	0.00013	0.002	8.2	-0.7	22.4	132.6	148.6	73.4	303.1	22.2	14.3	
S10	05:00		4.68	0.69	50.0	1.81	1.82	1.79	11.0 E	---- F	10.6	12.08	0.00015	0.002	8.3	-0.7	22.6	132.6	147.5	73.1	308.5	19.2	14.6	
S11	05:30		4.61	0.67	50.0	1.81	1.80	1.81	11.0 E	---- F	10.4	11.87	0.00019	0.002	8.5	-0.7	22.4	132.9	145.3	71.7	309.4	23.3	14.3	
S12	06:00		5.15	0.76	50.0	1.78	1.80	1.79	11.0 E	---- F	10.6	12.20	0.00022	0.002	8.5	-0.5	22.3	132.9	147.7	73.6	308.8	29.2	14.1	
S13	06:30		4.86 •	0.68	50.0	1.80	1.82	1.80	11.0 E	---- F	10.0	11.50	0.00013	0.002	9.1	-0.6	21.2	132.3	139.2	70.5	313.4	29.3	14.3	
S14	07:00		5.78	0.87	50.0	1.81	1.81	1.80	11.0 E	---- F	10.8	12.23	0.00028	0.002	8.0	-0.7	22.8	132.3	150.4	70.9	312.3	26.2	14.3	
S15	07:30		5.54	0.82	50.0	1.79	1.78	1.77	11.0 E	---- F	10.5	11.98	0.00018	0.002	8.4	-0.7	22.5	132.7	147.7	72.8	309.2	25.5	14.1	
S16	08:00		5.53	0.82	50.0	1.80	1.76	1.82	11.0 E	---- F	10.4	11.97	0.00011	0.002	8.5	-0.7	22.5	132.5	147.6	73.0	303.5	17.4	14.2	
S17	08:30		4.64 •	0.68	50.0	1.81	1.81	1.80	11.0 E	---- F	10.3	11.86	0.00011	0.002	8.6	-0.7	22.2	132.5	146.0	72.8	306.9	19.6	14.2	
S18	09:00		5.46	0.77	50.0	1.80	1.83	1.79	11.0 E	---- F	10.1	11.51	0.00014	0.002	8.9	-0.8	22.0	131.7	141.2	71.4	300.3	17.3	14.2	
S19	09:30		6.09	0.88	50.0	1.78	1.81	1.80	11.0 E	---- F	10.1	11.74	0.00013	0.002	8.9	-0.7	21.7	130.4	144.3	72.7	309.1	12.8	14.3	
S20	10:00		6.57	0.91	50.0	1.79	1.75	1.79	11.0 E	---- F	9.9	11.34	0.00021	0.002	9.2	-0.8	21.2	130.6	138.4	71.5	308.1	13.9	14.9	
S21	10:30	AA	6.10 •	0.78	50.0	1.80	1.77	1.80	11.0 E	---- F	9.3	10.64	0.00017	0.002	10.0	-0.8	20.4	130.6	128.4	67.1	303.1	17.5	15.2	
S22	11:00		6.07	0.85	50.0	1.83	1.79	1.81	11.0 E	---- F	9.9	11.34	0.00016	0.002	9.0	-0.7	20.9	130.3	140.3	70.0	294.6	13.8	15.6	
S23	11:30		5.14	0.73	50.0	1.75	1.82	1.82	11.0 E	---- F	10.1	11.43	0.00015	0.002	8.7	-0.7	20.4	130.2	142.5	73.4	297.2	9.5	16.0	
S24	12:00		4.59	0.66	50.0	1.77	1.84	1.78	11.0 E	---- F	10.0	11.43	0.00026	0.002	8.7	-0.6	20.3	130.7	143.8	75.3	269.8	7.1	16.2	
S25	12:30		4.52 •	0.65	50.0	1.83	1.79	1.79	11.0 E	---- F	10.0	11.51	0.00017	0.002	8.8	-0.5	20.8	130.7	143.7	74.7	255.3	8.7	16.9	
S26	13:00		4.60	0.67	50.0	1.81	1.81	1.83	11.0 E	---- F	10.1	11.60	0.00022	0.002	8.6	-0.6	22.1	130.7	145.6	74.9	245.2	9.5	16.9	
S27	13:30		3.49	0.51	50.0	1.81	1.82	1.80	11.0 E	---- F	10.1	11.62	0.00024	0.002	8.7	-0.5	21.2	130.6	145.0	74.4	258.8	7.1	17.0	
S28	14:00		2.79	0.41	50.0	1.80	1.80	1.79	11.0 E	---- F	10.1	11.77	0.00027	0.002	8.7	-0.6	21.3	130.3	146.4	74.7	281.7	10.5	18.0	
S29	14:30		2.12 •	0.31	50.0	1.83	1.83	1.79	11.0 E	---- F	10.0	11.58	0.00025	0.002	8.6	-0.6	21.3	130.8	146.8	75.2	278.2	15.8	18.4	
S30	15:00		2.35	0.34	50.0	1.79	1.77	1.74	11.0 E	---- F	10.0	11.34	0.00030	0.002	8.7	-0.6	19.8	131.0	143.2	75.1	263.5	16.3	20.4	
S31	15:30		2.57	0.37	50.0	1.83	1.80	1.83	11.0 E	---- F	9.8	11.49	0.00017	0.002	9.1	-0.6	19.6	132.5	143.1	73.7	284.6	17.1	21.2	
S32	16:00		1.88	0.28	50.0	1.81	1.84	1.84	11.0 E	---- F	10.0	11.80	0.00033	0.002	8.7	-0.5	22.7	133.4	148.1	73.5	296.9	19.2	21.1	
S33	16:30		1.40 •	0.21	50.0	1.78	1.77	1.78	11.0 E	---- F	10.0	11.75	0.00026	0.002	8.6	-0.5	22.5	133.1	148.5	72.9	292.1	17.8	21.3	
S34	17:00		1.49	0.22	50.0	1.80	1.75	1.78	11.0 E	---- F	9.7	11.36	0.00022	0.002	8.9	-0.5	21.4	133.0	145.4	73.4	279.0	18.6	22.6	
S35	17:30		1.68	0.24	50.0	1.76	1.80	1.81	11.0 E	---- F	9.3	10.94	0.00012	0.002	9.2	-0.5	19.9	133.0	141.9	73.3	284.5	22.7	22.4	
S36	18:00		1.95	0.28	50.0	1.78	1.83	1.79	11.0 E	---- F	9.6	11.23	0.00019	0.002	8.9	-0.5	20.7	133.1	144.7	73.6	287.0	14.6	22.8	
S37	18:30		1.56 •	0.22	50.0	1.78	1.79	1.80	11.0 E	---- F	9.7	11.46	0.00016	0.002	9.1	-0.5	20.6	133.2	144.2	73.4	274.6	15.3	22.5	
S38	19:00		1.42	0.20	50.0	1.79	1.81	1.82	11.0 E	---- F	9.7	11.36	0.00015	0.002	9.1	-0.5	20.0	132.8	142.8	73.3	273.1	13.8	22.1	
S39	19:30		1.80	0.26	50.0	1.81	1.80	1.75	11.0 E	---- F	10.0	11.52	0.00020	0.002	8.6	-0.6	20.4	132.9	146.6	74.9	274.7	10.8	22.1	
S40	20:00		2.32	0.33	50.0	1.82	1.80	1.82	11.0 E	---- F	9.5	11.08	0.00020	0.002	9.2	-0.6	20.0	132.9	140.6	73.9	282.5	9.6	21.7	
S41	20:30		1.63 •	0.24	50.0	1.80	1.80	1.81	11.0 E	---- F	10.0	11.90	0.00016	0.002	8.7	-0.5	21.2	133.4	149.0	75.3	283.0	9.9	21.3	
S42	21:00		1.27	0.18	50.0	1.79	1.76	1.80	11.0 E	---- F	9.9	11.59	0.00013	0.002	8.9	-0.5	20.5	133.1	144.6	75.0	284.7	8.4	20.5	
S43	21:30		1.23	0.18	50.0	1.81	1.81	1.81	11.0 E	---- F	9.8	11.43	0.00020	0.002	8.9	-0.6	19.7	133.0	144.0	75.1	306.0	9.1	20.4	
S44	22:00		1.44	0.20	50.0	1.79	1.83	1.79	11.0 E	---- F	9.7	11.33	0.00011	0.002	9.2	-0.5	19.7	133.1	141.2	74.4	314.2	5.9	20.1	
S45	22:30		1.29 •	0.19	50.0	1.79	1.82	1.81	11.0 E	---- F	10.0	11.60	0.00017	0.002	8.7	-0.5	20.7	133.1	145.2	74.4	320.1	4.6	19.5	
S46	23:00		1.50	0.22	50.0	1.78	1.78	1.78	11.0 E	---- F	10.0	11.37	0.00023	0.002	8.4	-0.5	20.0	132.9	147.0	76.0	251.3	2.6	18.3	
S47	23:30		1.76	0.24	50.0	1.81	1.76	1.83	11.0 E	---- F	9.5	10.93	0.00012	0.002	9.2	-0.6	19.5	132.4	138.6	74.1	272.5	3.7	17.9	
S48	24:00		1.65	0.23	50.0	1.82	1.79	1.80	11.0 E	---- F	9.8	11.26	0.00016	0.002	8.9	-0.7	20.1	132.8	142.4	73.7	289.0	11.3	18.2	
TMW / TSum		47 Stat.	**3.52**	0.51	50.0	1.80	1.80	1.80	11.0	---- F	10.1	556.15	0.00019	0.002	8.7	-0.6	21.3	132.3	144.7	73.5	292.3	17.1	17.9	
Verfügbarkeit (%)			100.0								100.0		100.0		100.0		100.0		100.0					
HMW min. (Stat. Betrieb)			**1.23**	0.18	50.0	1.75	1.75	1.74	11.0		9.3	10.93	0.00011	0.002	8.0	-0.8	19.5	130.2	138.4	70.0	245.2	2.6	14.1	
Zeit			**21:30**	21:00	00:30	11:30	10:00	15:00	00:30		17:30	23:30	08:00	00:30	07:00	09:00	23:30	11:30	10:00	11:00	13:00	23:00	06:00	
HMW max. (Stat. Betrieb)			**6.57**	0.91	50.0	1.83	1.84	1.84	11.0		10.8	12.23	0.00033	0.002	9.2	-0.3	23.3	133.4	150.4	76.0	320.1	42.6	22.8	
Zeit			**10:00**	10:00	00:30	00:30	12:00	04:00	00:30		07:00	07:00	16:00	00:30	10:00	03:00	01:00	01:00	07:00	23:00	22:30	03:00	18:00	

Zeichenerklärung: Alle angegebenen Konzentrationen (Ausnahme: CO2) und der Rauchgasvolumenstrom sind auf trockenes Abgas bei 0 °C, 1013 mbar und 11% O2 des Volumens bezogen
Anlagenbetriebszustand: "--" = Stillstand, "AA" = An-/Abfahrbetrieb, " " = Normalbetrieb
G, A, B: Grenzwertüberschreitung ohne Vetrauensbereich (1-fach, 1.2-fach, 2-fach), g, a, b: Grenzwertüberschreitung mit Vetrauensbereich (1-fach, 1.2-fach, 2-fach)
F: Meßwertfehler, W: Wartung, X: Störung, R: Rußblasen, O: Signal > 21 mA, U: Signal < 3.95 mA, E: Ersatzwert, N: Keine Daten verfügbar, *: 50% < Verfügbarkeit < 90%

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