

**RELEASES TO AIR
QUARTERLY RETURN
MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
OPERATING MODE:**

Operator: **Dow Silicones UK Ltd** Form: IED CON 2 (Gas Turbines)
Location: **Barry Cogeneration Plant** /version/date: **V.3.1 31 Dec 2015**
Permit/Variation Number: **EPR/JP3632ZH/V004**

Year: 2023	A1 / LCP 60					
	NOx (mg/m3)			CO (mg/m3)		
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	96.73	102.89		10.0	30.4	
February	93.95	100.91		8.9	41.9	
March	92.30	105.42		30.5	54.2	
April	89.13	99.58		18.7	73.9	
May	103.16	156.82		3.0	5.9	
June	94.64	103.42		2.7	3.7	
July	94.69	100.15		3.0	4.8	
August	86.52	96.74		7.3	60.1	
September	93.08	102.82		3.9	27.9	
October						
November						
December						
Monthly ELV / Daily ELV (f)	75.	80.		80.	80.	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

NOTES:

- (a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 15% O₂, dry, 273.15K, 101.325 kPa
- (b) Annual percentiles are submitted with the final return (Quarter 4)
- (c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing
- (d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above
- (e) Averages determined at loads in the range MSUL* < Load = 100% ISO base load and above (* For a 3 parameter approach, from the point of Start-Up to the point of Shut-down)
- (f) Leave the Daily ELV blank if this is applied as a 95th percentile ELV within the Permit
- (g) For each pollutant, report the Annual 95th percentile ELV for hourly averages in the first column and, if applicable, the Annual 95th percentile ELV for daily means in the second column
- (h) For each pollutant, report the Annual 95th percentile of hourly averages in the first column and, if applicable, the Annual 95th percentile of daily means in the second column

Signed on behalf of the Operator by:



Judith Sartor, Environmental Specialist

Date of return:

27th October 2023

No confidence adjustment

RELEASES TO AIR
QUARTERLY RETURN
MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
OPERATING MODE:
Operator: Dow Silicones UK Ltd Form: IED CON 2
Location: Barry Cogeneration Plant /ersion/date: V.3.1 31 Dec 2015
Permit/Variation Number: EPR/JP3632ZH/V004

Year: 2023	A2 / LCP60					
	NOx (mg/m3)			CO (mg/m3)		
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	-	-		-	-	
February	-	-		-	-	
March	48.95	53.55		37.9	85.9	
April	-	-		-	-	
May	46.58	49.69		12.2	16.8	
June	47.16	47.87		18.3	115.8	
July	46.33	52.25		26.6	31.4	
August	50.59	53.49		32.2	65.1	
September	49.96	55.65		18.6	42.3	
October						
November						
December						
Monthly ELV / Daily ELV (f)	100	110		100	110	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

NOTES:

(a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 3% O2, dry, 273.15K, 101.325 kPa

(b) Annual percentiles are submitted with the final return (Quarter 4)

(c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing

(d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above

(e) Averages determined at loads in the range MSUL* < Load = 100% ISO base load and above (* For a 3 parameter approach, from the point of Start-Up to the point of Shut-down)

(f) Leave the Daily ELV blank if this is applied as a 95th percentile ELV within the Permit

(g) For each pollutant, report the Annual 95th percentile ELV for hourly averages in the first column and, if applicable, the Annual 95th percentile ELV for daily means in the second column

(h) For each pollutant, report the Annual 95th percentile of hourly averages in the first column and, if applicable, the Annual 95th percentile of daily means in the second column

Signed on behalf of the Operator by: 
Judith Sartor, Environmental Specialist

Date of return: 27th October 2023

No confidence adjustment

RELEASES TO AIR
 QUARTERLY RETURN
 MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
 OPERATING MODE:

Operator:
Dow Silicones UK Ltd
Location:
Barry Cogeneration Plant
Permit/Variation Number:
EPR/JP3632ZH/V004

Form: IED CON 2 (Gas Turbines)
Version/date:
V.3.1 31 Dec 2015

Year: 2023	A3 / LCP60					
	NOx (mg/m3)			CO (mg/m3)		
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	65.66	70.50		5.6	18.1	
February	64.85	69.51		6.1	16.6	
March	67.20	72.88		11.2	25.4	
April	63.91	67.69		1.9	5.9	
May	66.80	71.07		1.7	4.6	
June	65.04	72.63		2.3	11.0	
July	61.13	67.2	Note 1	4.2	23.0	
August	61.60	67.21		7.7	21.3	
September	58.36	60.46		4.8	13.1	
October						
November						
December						
Monthly ELV / Daily ELV (f)	75.	80.		80.	80.	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

- NOTES:
- (a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 15% O2, dry, 273.15K, 101.325 kPa
 - (b) Annual percentiles are submitted with the final return (Quarter 4)
 - (c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing
 - (d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above
 - (e) Averages determined at loads in the range MSUL* < Load = 100% ISO base load and above (* For a 3 parameter approach, from the point of Start-Up to the point of Shut-down)
 - (f) Leave the Daily ELV blank if this is applied as a 95th percentile ELV within the Permit
 - (g) For each pollutant, report the Annual 95th percentile ELV for hourly averages in the first column and, if applicable, the Annual 95th percentile ELV for daily means in the second column
 - (h) For each pollutant, report the Annual 95th percentile of hourly averages in the first column and, if applicable, the Annual 95th percentile of daily means in the second column

Note 1 - Data amended to remove overrange data when analyser had failed and was being recommisioned

Signed on behalf of the Operator by:
Date of return:



Judith Sartor, Environmental Specialist

27th October 2023

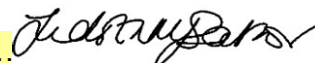
No confidence adjustment

CONTINUOUS MEASUREMENT SYSTEMS INVALIDATION LOG**QUARTERLY RETURN****Q3****Year: 2023****Operator:****Dow Silicones UK Ltd****Form: IED CEM1****Monitor positioned on release point/LCP Number:****A1 / LCP 60****Version/Date: V 3.1 31 Dec 2016****Permit/Variation Number:****EPR/JP3632ZH/V004****Barry Cogeneration Plant**

Date	Period of invalidation (hours)	Invalidated days in year	Comments
07/07/2023 - 07/07/2023	6 hrs	1.	

NOTES:

(a) Compliance in Chapter III of the IED is on the basis of validated hourly averages, measured by continuous monitors (except where discontinuous exemption applies). And confidence intervals are incorporated to convert the measured hourly value into a validated measurement for the purpose of compliance assessment. However, any day in which more than 3 hourly average values are invalid (due to malfunction or maintenance of the continuous measurement system) shall be invalidated for the purpose of compliance assessment. If more than 10 days are invalid over a year the operator shall, within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and implement the approved proposals.

Signed on behalf of the Operator by: 

Judith Sartor, Environmental Specialist

Date of return: 27th October 2023

CONTINUOUS MEASUREMENT SYSTEMS INVALIDATION LOG

QUARTERLY RETURN

Q3

Year: 2023

Operator:

Dow Silicones UK Ltd

Form: IED CEM1

Monitor positioned on release point/LCP Number:

A2 / LCP 60

Version/Date: V 3.1 31 Dec 2016

Permit/Variation Number:

EPR/JP3632ZH/V004

Barry Cogeneration Plant

Date	Period of invalidation (hours)	Invalidated days in year	Comments

NOTES:

(a) Compliance in Chapter III of the IED is on the basis of validated hourly averages, measured by continuous monitors (except where discontinuous exemption applies). And confidence intervals are incorporated to convert the measured hourly value into a validated measurement for the purpose of compliance assessment. However, any day in which more than 3 hourly average values are invalid (due to malfunction or maintenance of the continuous measurement system) shall be invalidated for the purpose of compliance assessment. If more than 10 days are invalid over a year the operator shall, within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and implement the approved proposals.

Signed on behalf of the Operator by:



Judith Sartor, Environmental Specialist

Date of return: 27th October 2023

CONTINUOUS MEASUREMENT SYSTEMS INVALIDATION LOG

QUARTERLY RETURN

Q3

Year: 2023

Operator:

Dow Silicones UK Ltd

Form: IED CEM1

Monitor positioned on release point/LCP Number:

A3 / LCP 60

Version/Date: V 3.1 31 Dec 2016

Permit/Variation Number:

EPR/JP3632ZH/V004

Barry Cogeneration Plant

Date	Period of invalidation (hours)	Invalidated days in year	Comments
01/07/2023 - 07/07/2023	129 hrs	7.	

NOTES:

(a) Compliance in Chapter III of the IED is on the basis of validated hourly averages, measured by continuous monitors (except where discontinuous exemption applies). And confidence intervals are incorporated to convert the measured hourly value into a validated measurement for the purpose of compliance assessment. However, any day in which more than 3 hourly average values are invalid (due to malfunction or maintenance of the continuous measurement system) shall be invalidated for the purpose of compliance assessment. If more than 10 days are invalid over a year the operator shall, within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and implement the approved proposals.

Signed on behalf of the Operator by:

Judith Sartor, Environmental Specialist

Date of return: 27th October 2023

RELEASES TO AIR
QUARTERLY RETURN 2023 Q3
CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)
OPERATING MODE:
Operator: DOW
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED/LCPBREF BD1
Version/date: V.3.1 31 Dec 2015

Year: 2022	A1 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
May	-	-	-	Breakdown (hours)
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

- NOTES:
- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
 - (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
 - (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
 - (d) Gas turbines with CO abatement only (columns may be deleted for other plant types)
 - (e) Plants with HCl abatement only (columns may be deleted for other plant types)

Signed on behalf of the Operator by: 
Judith Sartor, Environmental Specialist
Date of return: 27th October 2023

No confidence adjustment

RELEASES TO AIR
QUARTERLY RETURN 2023 Q3
CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)
OPERATING MODE:
Operator: DOW
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED/LCPBREF BD1
Version/date: V.3.1 31 Dec 2015

Year: 2022	A2 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
May	-	-	-	Breakdown (hours)
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

- NOTES:
- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
 - (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
 - (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
 - (d) Gas turbines with CO abatement only (columns may be deleted for other plant types)
 - (e) Plants with HCl abatement only (columns may be deleted for other plant types)

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QUARTERLY RETURN 2023 Q3
CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)
OPERATING MODE:
Operator: DOW
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED/LCPBREF BD1
Version/date: V.3.1 31 Dec 2015

Year: 2022	A3 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
May	-	-	-	Breakdown (hours)
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
May	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

- NOTES:
- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
 - (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
 - (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
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