

Monthly Data Summary

LIDDELL MONTHLY DATA SUMMARY AUGUST 2018

LICENCE NO	2122
LICENCE HOLDER	AGL MACQUARIE
REPORTING PERIOD	AUGUST 2018

A1 Licence Holder

Licence Number 2122
Licence Holder AGL MACQUARIE
Trading Name (if applicable)
ABN 18 167 859 494

A2 Premises to which Licence Applies (if applicable)

Common Name (if any) LIDDELL POWER STATION
Premises NEW ENGLAND HIGHWAY MUSWELLBROOK NSW 2333

A3 Activities to which Licence Applies

Electricity Generating Works
Coal Works

A4 Other Activities (if applicable)

Helicopter-related facilities
Chemical storage
Operation of Emergency 1.5 MW diesel generator
Operation of Gas turbine
Sewage treatment
Waste storage

A5 Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Coal works	> 5,000,000.00	T handled
Generation of electrical power from coal	> 4,000.00	Gwh generated

Monthly Data Summary

Discharge & Monitoring Point 7

301204 East 6416350 North

Discharge to Air

In the flue gases of unit 1 boiler labelled as "Unit 1 Boiler 1-2 Chimney Stack" on plan no. LD 800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	15.5	674.1	879.0	1500 mg/m ³
AUGUST 2018	21/09/2018		parts per million				7.6	328.4	428.3	700 ppm
AUGUST 2018	21/09/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	361.9	924.0	1210.6	
AUGUST 2018	21/09/2018		parts per million				126.6	323.3	423.6	600 ppm
AUGUST 2018	21/09/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	98.6%	0.3	1.7	3.3	20%
Comments:										

Annual monitoring of discharges to air

Air emission monitoring, Boiler 1 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Jul-17	5/09/2017	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0
Jul-17	5/09/2017	Chlorine	milligrams per cubic metre	1	1	0.0	200
Jul-17	5/09/2017	Copper	milligrams per cubic metre	1	1	0.0029	
Jul-17	5/09/2017	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.014	5
Jul-17	5/09/2017	Hydrogen chloride	milligrams per cubic metre	1	1	5.7	100
Jul-17	5/09/2017	Mercury	milligrams per cubic metre	1	1	0.00140	1.0
Jul-17	5/09/2017	Nitrogen oxides	milligrams per cubic metre	1	1	660	1500
Jul-17	5/09/2017	Solid particles	milligrams per cubic metre	1	1	24.0	100
Jul-17	5/09/2017	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	1.100	100
Jul-17	5/09/2017	Sulphur dioxide	milligrams per cubic metre	1	1	1100	
Jul-17	5/09/2017	Total fluoride	milligrams per cubic metre	1	1	3.9	50
Jul-17	5/09/2017	Volatile organic compounds	milligrams per cubic metre	1	1	0.012	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

Monthly Data Summary

Discharge & Monitoring Point 8

301204 East 6416350 North

In the flue gases of unit 2 boiler labelled as "Unit 2 Boiler 1-2 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	429	679	901	1500 mg/m ³
AUGUST 2018	21/09/2018		parts per million				209	331	439	700 ppm
AUGUST 2018	21/09/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	533	857	1123	
AUGUST 2018	21/09/2018		parts per million				187	300	393	600 ppm
AUGUST 2018	21/09/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	2.9	4.8	8.3	20%
Comments:										

Annual monitoring of discharges to air

Air emission monitoring, Boiler 2 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Mar-18	12/04/2018	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0
Mar-18	12/04/2018	Chlorine	milligrams per cubic metre	1	1	<0.007	200
Mar-18	12/04/2018	Copper	milligrams per cubic metre	1	1	0.0040	
Mar-18	12/04/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.019	5
Mar-18	12/04/2018	Hydrogen chloride	milligrams per cubic metre	1	1	8.7	100
Mar-18	12/04/2018	Mercury	milligrams per cubic metre	1	1	<0.00080	1.0
Mar-18	12/04/2018	Nitrogen oxides	milligrams per cubic metre	1	1	550	1500
Mar-18	12/04/2018	Solid particles	milligrams per cubic metre	1	1	37.0	100
Mar-18	12/04/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	0.880	100
Mar-18	12/04/2018	Sulphur dioxide	milligrams per cubic metre	1	1	900	
Mar-18	12/04/2018	Total fluoride	milligrams per cubic metre	1	1	8.2	50
Mar-18	12/04/2018	Volatile organic compounds	milligrams per cubic metre	1	1	0.940	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

Monthly Data Summary

Discharge & Monitoring Point 9

301204 East 6416350 North

In the flue gases of unit 3 boiler labelled as "Unit 3 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	-				1500 mg/m ³
AUGUST 2018	21/09/2018		parts per million							700 ppm
AUGUST 2018	21/09/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	-				
AUGUST 2018	21/09/2018		parts per million							600 ppm
AUGUST 2018	21/09/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	-				20%
Comments:		Unit was out of service for the entire monitoring period								

Annual monitoring of discharges to air

Air emission monitoring, Boiler 3 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³			
Oct-17	1/12/2017	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0			
Oct-17	1/12/2017	Chlorine	milligrams per cubic metre	1	1	0.0	200			
Oct-17	1/12/2017	Copper	milligrams per cubic metre	1	1	0.0037				
Oct-17	1/12/2017	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.02	5			
Oct-17	1/12/2017	Hydrogen chloride	milligrams per cubic metre	1	1	20.0	100			
Oct-17	1/12/2017	Mercury	milligrams per cubic metre	1	1	0.00051	1.0			
Oct-17	1/12/2017	Nitrogen oxides	milligrams per cubic metre	1	1	770	1500			
Oct-17	1/12/2017	Solid particles	milligrams per cubic metre	1	1	42.0	100			
Oct-17	1/12/2017	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	1.700	100			
Oct-17	1/12/2017	Sulphur dioxide	milligrams per cubic metre	1	1	1300				
Oct-17	1/12/2017	Total fluoride	milligrams per cubic metre	1	1	9.8	50			
Oct-17	1/12/2017	Volatile organic compounds	milligrams per cubic metre	1	1	<0.02				
Comments:		Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.								

Monthly Data Summary

Discharge & Monitoring Point 10

301204 East 6416350 North

In the flue gases of unit 4 boiler labelled as "Unit 4 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	311.6	556.3	737.2	1500 mg/m ³
AUGUST 2018	21/09/2018		parts per million				151.8	271.0	359.2	700 ppm
AUGUST 2018	21/09/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	637.0	891.1	1143.3	
AUGUST 2018	21/09/2018		parts per million				222.9	311.8	400.0	600 ppm
AUGUST 2018	21/09/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	3.0	6.7	9.6	20%
Comments:										

Annual monitoring of discharges to air

Air emission monitoring, Boiler 4 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m ³
Dec-17	15/01/2018	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0
Dec-17	15/01/2018	Chlorine	milligrams per cubic metre	1	1	0.0	200
Dec-17	15/01/2018	Copper	milligrams per cubic metre	1	1	0.0058	
Dec-17	15/01/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.015	5
Dec-17	15/01/2018	Hydrogen chloride	milligrams per cubic metre	1	1	6.6	100
Dec-17	15/01/2018	Mercury	milligrams per cubic metre	1	1	0.00190	1.0
Dec-17	15/01/2018	Nitrogen oxides	milligrams per cubic metre	1	1	845	1500
Dec-17	15/01/2018	Solid particles	milligrams per cubic metre	1	1	24.0	100
Dec-17	15/01/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	5.500	100
Dec-17	15/01/2018	Sulphur dioxide	milligrams per cubic metre	1	1	1000	
Dec-17	15/01/2018	Total fluoride	milligrams per cubic metre	1	1	3.2	50
Dec-17	15/01/2018	Volatile organic compounds	milligrams per cubic metre	1	1	<0.07	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

Monthly Data Summary

Discharge & Monitoring Point 12

Discharge to waters <301204 East 6416350 North> Update

Liddell Outfall Canal

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Ammonia	milligrams per litre	Fortnightly	2	0.02	0.03	0.04	-
AUGUST 2018	21/09/2018	Antimony	milligrams per litre	Fortnightly	2	0.007	0.0085	0.01	
AUGUST 2018	21/09/2018	Arsenic	milligrams per litre	Fortnightly	2	0.006	0.006	0.006	-
AUGUST 2018	21/09/2018	Barium	milligrams per litre	Fortnightly	2	0.099	0.1015	0.104	
AUGUST 2018	21/09/2018	Beryllium	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Boron	milligrams per litre	Fortnightly	2	1.15	1.23	1.31	
AUGUST 2018	21/09/2018	Cadmium	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Chlorine	milligrams per litre	Fortnightly	2	0.07	0.09	0.11	
AUGUST 2018	21/09/2018	Chromium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
AUGUST 2018	21/09/2018	Chromium (total)	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	
AUGUST 2018	21/09/2018	Cobalt	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Conductivity	uS/cm	Fortnightly	2	2610.0	2695.0	2780.0	
AUGUST 2018	21/09/2018	Copper	milligrams per litre	Fortnightly	2	<0.001	0.00225	0.004	-
AUGUST 2018	21/09/2018	Flouride	milligrams per litre	Fortnightly	2	1.45	1.51	1.57	
AUGUST 2018	21/09/2018	Lead	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Manganese	milligrams per litre	Fortnightly	2	0.006	0.006	0.006	
AUGUST 2018	21/09/2018	Mercury	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Methylene Blue Active Substance	milligrams per litre	Fortnightly	2	<0.1	0.05	<0.1	
AUGUST 2018	21/09/2018	Molybdenum	milligrams per litre	Fortnightly	2	0.108	0.112	0.116	-

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AUGUST 2018	21/09/2018	Nickel	milligrams per litre	Fortnightly	2	0.004	0.004	0.004	
AUGUST 2018	21/09/2018	Nitrogen (total)	milligrams per litre	Fortnightly	2	0.4	0.45	0.5	-
AUGUST 2018	21/09/2018	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	
AUGUST 2018	21/09/2018	pH	pH Units	Daily	31	8.3	8.5	8.5	-
AUGUST 2018	21/09/2018	Phosphorus	milligrams per litre	Fortnightly	2	<0.01	0.0125	0.02	
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Selenium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
AUGUST 2018	21/09/2018	Sulfur	milligrams per litre	Fortnightly	2	642	653	664	
AUGUST 2018	21/09/2018	Temperature	milligrams per litre	Fortnightly	2	17.6	19.15	20.7	
AUGUST 2018	21/09/2018	Tin	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Total Dissolved Solids	milligrams per litre	Fortnightly	2	1700	1770	1840	
AUGUST 2018	21/09/2018	Total Organic Carbon	milligrams per litre	Fortnightly	2	7	7	7	-
AUGUST 2018	21/09/2018	TSS	milligrams per litre	Fortnightly	2	2	3	4	
AUGUST 2018	21/09/2018	Vanadium	milligrams per litre	Fortnightly	2	0.01	0.01	0.01	-
AUGUST 2018	21/09/2018	Zinc	milligrams per litre	Fortnightly	2	<0.005	0.0025	<0.005	
Comments									

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Comments									
Discharge & Monitoring Point 13									
Discharge to waters <301204 East 6416350 North> Update									
Liddell Oil and Grit Trap									
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Ammonia	milligrams per litre	Fortnightly	2	0.07	0.765	1.46	-
AUGUST 2018	21/09/2018	Antimony	milligrams per litre	Fortnightly	2	0.008	0.009	0.01	
AUGUST 2018	21/09/2018	Arsenic	milligrams per litre	Fortnightly	2	0.006	0.007	0.008	-
AUGUST 2018	21/09/2018	Barium	milligrams per litre	Fortnightly	2	0.093	0.0955	0.098	
AUGUST 2018	21/09/2018	Beryllium	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Boron	milligrams per litre	Fortnightly	2	1.11	1.16	1.21	
AUGUST 2018	21/09/2018	Cadmium	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Chlorine	milligrams per litre	Fortnightly	2	0.07	0.07	0.07	
AUGUST 2018	21/09/2018	Chromium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
AUGUST 2018	21/09/2018	Chromium (total)	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	
AUGUST 2018	21/09/2018	Cobalt	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Conductivity	uS/cm	Fortnightly	2	2450.0	2515.0	2580.0	
AUGUST 2018	21/09/2018	Copper	milligrams per litre	Fortnightly	2	0.004	0.007	0.01	-
AUGUST 2018	21/09/2018	Flouride	milligrams per litre	Fortnightly	2	1.36	1.435	1.51	
AUGUST 2018	21/09/2018	Lead	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Manganese	milligrams per litre	Fortnightly	2	0.006	0.0065	0.007	
AUGUST 2018	21/09/2018	Mercury	milligrams per litre	Fortnightly	2	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Methylene Blue Active Substance	milligrams per litre	Fortnightly	2	<0.1	0.05	<0.1	
AUGUST 2018	21/09/2018	Molybdenum	milligrams per litre	Fortnightly	2	0.108	0.1115	0.115	-
AUGUST 2018	21/09/2018	Nickel	milligrams per litre	Fortnightly	2	0.005	0.005	0.005	

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AUGUST 2018	21/09/2018	Nitrogen (total)	milligrams per litre	Fortnightly	2	0.3	1.1	1.9	-
AUGUST 2018	21/09/2018	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	
AUGUST 2018	21/09/2018	pH	pH Units	Daily	31	7.0	8.3	8.6	-
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Phosphorus	milligrams per litre	Fortnightly	2	0.02	0.03	0.04	
AUGUST 2018	21/09/2018	Selenium	milligrams per litre	Fortnightly	2	<0.01	0.005	<0.01	-
AUGUST 2018	21/09/2018	Sulfur	milligrams per litre	Fortnightly	2	589	607.5	626	
AUGUST 2018	21/09/2018	Temperature	milligrams per litre	Fortnightly	2	15.6	15.85	16.1	
AUGUST 2018	21/09/2018	Tin	milligrams per litre	Fortnightly	2	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Total Dissolved Solids	milligrams per litre	Fortnightly	2	1410	1540	1670	
AUGUST 2018	21/09/2018	Total Organic Carbon	milligrams per litre	Fortnightly	2	6	6	6	-
AUGUST 2018	21/09/2018	TSS	milligrams per litre	Fortnightly	2	3	3.5	4	
AUGUST 2018	21/09/2018	Vanadium	milligrams per litre	Fortnightly	2	0.01	0.015	0.02	-
AUGUST 2018	21/09/2018	Zinc	milligrams per litre	Fortnightly	2	<0.005	0.0025	<0.005	
Comments									

Discharge & Monitoring Point 14

Discharge to waters <301204 East 6416350 North> Update

The skimmer dam overflow spillway, located at the left abutment of the skimmer dam.

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	Arsenic	milligrams per litre	Weekly	4	0.053	0.05225	0.06	-
AUGUST 2018	21/09/2018	Boron	milligrams per litre	Weekly	4	1.62	1.82	1.88	
AUGUST 2018	21/09/2018	Cadmium	milligrams per litre	Weekly	4	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Chromium	milligrams per litre	Weekly	4	<0.01	0.005	<0.01	-
AUGUST 2018	21/09/2018	Chromium (total)	milligrams per litre	Weekly	4	0.002	0.00375	0.004	

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AUGUST 2018	21/09/2018	Conductivity	uS/cm	Weekly	4	2700.0	2797.5	2910.0	
AUGUST 2018	21/09/2018	Copper	milligrams per litre	Weekly	4	<0.001	0.0015	0.003	-
AUGUST 2018	21/09/2018	Flouride	milligrams per litre	Weekly	4	2.8	2.4	2.5	
AUGUST 2018	21/09/2018	Lead	milligrams per litre	Weekly	4	<0.001	0.0005	<0.001	-
AUGUST 2018	21/09/2018	Mercury	milligrams per litre	Weekly	4	<0.0001	0.00005	<0.0001	-
AUGUST 2018	21/09/2018	Oil and Grease	milligrams per litre	Weekly	4	<5	2.5	<5	
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurment frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
AUGUST 2018	21/09/2018	pH	pH Units	Weekly	4	8.4	8.5	8.5	-
AUGUST 2018	21/09/2018	Selenium	milligrams per litre	Weekly	4	0.04	0.0325	0.04	-
AUGUST 2018	21/09/2018	TSS	milligrams per litre	Weekly	4	<1	1.25	2	
AUGUST 2018	21/09/2018	Zinc	milligrams per litre	Weekly	4	<0.005	0.00475	0.008	
Comments									

Monthly Data Summary

Details of Non-Compliance with Licence

Licence condition number not complied with

N/A

Summary of particulars of the non-compliance **(NO MORE THAN 50 WORDS)**

If required, further details on particulars of non-compliance

-

Date(s) when the non-compliance occurred, if applicable

If applicable, registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance

Cause of non-compliance

Action taken or that will be taken to mitigate any adverse effects of the non-compliance

Action taken or that will be taken to prevent a recurrence of the non-compliance