Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Aberthaw Power Station

RWE npower plc
Aberthaw
near Barry
Vale of Glamorgan
CF62 4ZW

Permit number

RP3133LD

Aberthaw Power Station
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Introductory note

This introductory note does not form a part of the permit

The main features of the installation are as follows:

Aberthaw Power Station is located on the Bristol Channel coast in the Vale of Glamorgan approximately 16 km South West of Cardiff. The station is operated by RWE npower and produces electricity for the National Grid.

There are three coal-fired boiler units each supplying high-pressure steam to turbine/alternator sets each generating 500 MW of electrical power. Associated with the boiler units are the coal receipt, storage and handling systems, including storage of up to 700,000 tonnes of coal. Coal is delivered by rail and either put into stock or conveyed directly into the mill feed hoppers. Up to six ball mills feed pulverised coal to each arch-fired boiler unit. The down-shot coal burners are supported by heavy fuel oil burners to ensure coal flame stability during start-up and at reduced loads. Solid and liquid biomass fuels that meet the exemption requirements of the Waste Incineration Directive are also fired in the boilers. In particular wood is processed by a dedicated milling plant and pneumatically conveyed directly into the boiler burnout zone.

The boilers are designed to operate using local sources of semi-anthracite coals with low volatile matter content. The high furnace temperatures necessary to achieve reasonable levels of carbon in ash also result in relatively high levels of nitrogen oxides in the flue gases compared to similar pulverised fuel boilers operating with bituminous coals. Nitrogen oxide emissions are currently controlled by optimising combustion conditions and furnace temperature distribution. The Large Combustion Plant Directive allows a time-limited derogation of a higher nitrogen oxide emission limit value for low volatility coal-fired units. After this period (2018) the station will need to close or additional abatement will need to be provided. However, it is expected that some reduction in nitrogen oxide emissions will be made before then.

Boiler bottom ash is quenched with water before screening for sale as aggregate. Pulverised fuel ash is removed from the flue gases by electrostatic precipitators and up to 200,000 tonnes per annum or more when markets are developed will be separated into a carbon-rich char and a low-carbon ash stream suitable for use by the cement industry upon commissioning of a new ash processing plant. The balance of the ash will be sent to one of the adjacent dedicated landfills.

From 2008 sulphur dioxide will be removed from the flue gases by seawater flue gas desulpurisation processes. This operation uses the natural alkalinity in a proportion of the seawater that cools the steam-cycle condensers as a scrubbing medium in a once-through absorber in each flue gas path. Seawater pH and dissolved oxygen levels are stabilised prior to discharge with the rest of the seawater cooling stream by a forced aeration plant.

The main environmental impacts associated with the power station are long-range acidification of sensitive habitats due to sulphur dioxide deposition and localised air quality deterioration under adverse weather conditions during plume grounding episodes. Implementation of the seawater FGD process will eliminate or reduce these effects. Other localised impacts are potentially caused by nitrogen oxide and noise emissions, a contribution to fugitive dust deposition and releases of trace element pollutants such as lead, cadmium and mercury from the flue gases with the seawater discharge.

Table S1.3 contains an improvement condition (reference IC7) requiring the operators to produce a plan showing how the installation will contribute to total emissions of sulphur dioxide from existing major coal and oil-fired power stations in England and Wales being minimised and not exceeding 70kt/year from 2020. The plan will be periodically updated. If the proposals do not meet the 70kt in aggregate the Agency will give each station a transferable allocation of the total.

Status Log of the permit		
Detail	**Date**	**Response Date**
Application RP3133LD	Duly made 31/03/06	
Schedule 4 Notice/Additional Information Received	Issued 26/07/06	4/10/06, 1/11/06, 10/11/06, 5/12/06, 1/03/07, 16/3/07, 8/08/07, 10/08/07, 22/08/07, 5/09/07 and 11/09/07
Public Participation Directive consultation	30/10/07	27/11/07
Permit determined	21/12/07	

Other PPC permits relating to this installation		
Operator	**Permit Number**	**Date of Issue**
RWE npower	DP3432SW	30/03/07
RWE npower	BP3339BH	4/05/07

Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation			
Holder	**Reference Number**	**Date of Issue**	**Fully or Partially Superseded**
RWE npower	AA2682	8/04/93	Fully superseded
RWE Innogy plc	EAWML30067	22/08/91	Partially superseded

Other existing Licences/Authorisations/Registrations relating to this site		
Holder	**Reference Number**	**Date of issue**
RWE Innogy plc	21/57/31/0040	16/09/99

End of Introductory Note

Permit

Permit number
RP3133LD

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) hereby authorises
RWE npower plc ("the operator"),

whose registered office is

Windmill Business Park
Whitehill Way
Swindon
Wiltshire
SN5 6PB

company registration number 3892782

to operate an installation at
Aberthaw Power Station
Aberthaw
Nr. Barry
Vale of Glamorgan
CF62 4ZW

to the extent authorised by and subject to the conditions of this permit.

Signed	Date
	21st December 2007

G Bown

Authorised to sign on behalf of the Agency

Conditions

1 Management

1.1 General management

1.1.1 The activities shall be managed and operated:

(a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the operator as a result of complaints; and

(b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Accident management plan

1.2.1 The operator shall:

(a) maintain and implement an accident management plan;

(b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;

(c) make any appropriate changes to the plan identified by a review.

1.3 Energy efficiency

1.3.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(c) take any further appropriate measures identified by a review.

1.4 Efficient use of raw materials

1.4.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every 4 years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any appropriate further measures identified by a review.

1.5 Avoidance, recovery and disposal of wastes produced by the activities

1.5.1. The operator shall:

(a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;

(b) review and record at least every 4 years whether changes to those measures should be made; and

(c) take any further appropriate measures identified by a review.

1.6 Site security

1.6.1. Site security measures shall prevent unauthorised access to the site, as far as practicable.

2. Operations

2.1 Permitted activities

2.1.1 The operator is authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 2 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1 table S1.2, unless otherwise agreed in writing by the Agency.

2.3.2 No raw materials or fuels listed in schedule 3 table S3.1 shall be used unless they comply with the specifications set out in that table.

2.3.3 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 3 tables S3.2 and S3.3; and

(b) it conforms to the description in the documentation supplied by the producer and holder.

2.3.4 Records shall be kept of all waste accepted onto the site.

2.3.5 The following condition applies until 31st December 2007:

2.3.5.1 Where the activities include any boiler which is fitted with fully commissioned and operational FGD (an "abated unit"), that boiler shall only be operated without the simultaneous operation of its FGD, if this occurs in accordance with "A Protocol for the operation and breakdown of flue gas desulphurisation at coal fired power stations until 31.12.2007" dated 15th November or any subsequent revision to this protocol agreed in writing with the Agency.

2.3.6 From 1st January 2008, where the activities include any boiler which is fitted with fully commissioned and operational FGD, that boiler shall only be operated without the simultaneous operation of its FGD, if this occurs in accordance with "A Protocol for dealing with malfunction or breakdown of abatement equipment at coal fired power stations from 1st January 2008 to 31st December 2015" dated 15th November 2006 or any subsequent revision to this protocol agreed in writing with the Agency

2.3.7 From 1st January 2008, the following conditions apply where there is a malfunction or breakdown of any abatement equipment, subject to the provisions of "A Protocol for dealing with malfunction or breakdown of abatement equipment at coal fired power stations from 1st January 2008 to 31st December 2015" dated 15th November 2006 or any subsequent revision to this protocol agreed in writing with the Agency

2.3.7.1 The operator shall notify the Agency within 48 hours of any such malfunction or breakdown unless notification has already been made under condition 4.3.1.

2.3.7.2 In the case of a breakdown and unless otherwise agreed in writing by the Agency:

(a) if a return to normal operation is not achieved within 24 hours, the operator shall reduce or close down operations, or shall operate the plant using low polluting fuels; and

(b) the cumulative duration of unabated operation in any twelve month period shall not exceed 120 hours.

2.4 Off-site conditions

There are no off-site conditions under this section.

2.5 Improvement programme

2.5.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Agency.

2.5.2 Except in the case of an improvement, which consists only of a submission to the Agency, the operator shall notify the Agency within 14 days of completion of each improvement.

2.6 Pre-operational conditions

2.6.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

2.7 Closure and decommissioning

2.7.1 The operator shall maintain and operate the activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.

2.7.2 The operator shall maintain a site closure plan, which demonstrates how the activities can be decommissioned to avoid any pollution risk and return the site to a satisfactory state.

2.7.3 The operator shall carry out and record a review of the site closure plan at least every 4 years.

2.7.4 The site closure plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the activities or part thereof.

2.8 Site protection and monitoring programme

2.8.1 The operator shall, within 2 months of the issue of this permit, submit a site protection and monitoring programme.

2.8.2 The operator shall implement and maintain the site protection and monitoring programme and shall carry out and record a review of it at least every 4 years.

3. Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 4 tables S4.1, S4.2 and S4.3.

3.1.2 The limits given in schedule 4 shall not be exceeded except where otherwise stated in the conditions of this permit.

3.2 Transfers off-site

3.2.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

3.3 Fugitive emissions of substances

3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including those specified in schedule 1 table S1.5, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.3.2 All liquids, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.4 Odour

3.4.1 Emissions from the activities shall be free from odour at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the odour.

3.5 Noise and vibration

3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including those specified in schedule 1 table S1.6, to prevent or where that is not practicable to minimise the noise and vibration.

3.6 Monitoring

3.6.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake the monitoring specified in the following tables in schedule 4 to this permit:

(a) point source emissions specified in tables S4.1, S4.2 and S4.3;

(b) annual limits specified in table S4.4;

(c) surface water specified in table S4.5;

(d) noise specified in table S4.6;

(e) ambient air monitoring specified in table S4.7; and

(f) process monitoring specified in table S4.8.

3.6.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Agency.

3.6.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 4 tables S4.1, S4.2 and S4.3 unless otherwise specified in that schedule.

3.6.5 Within 6 months of the issue of this permit (unless otherwise agreed in writing by the Agency) the site reference data identified in the site protection and monitoring programme shall be collected and submitted to the Agency.

3.7 Monitoring for the purposes of the Large Combustion Plant Directive

3.7.1 All LCP monitoring required by this permit shall be carried out in accordance with the provisions of Annex VIII of the Large Combustion Plant Directive.

3.7.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in Schedule 4, the Operator shall:

a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the 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

b) implement the approved measures

3.7.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.7.4 Unless otherwise agreed in writing by the Agency in accordance with condition 3.7.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.7.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Agency.

3.7.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Agency in writing, within 28 days of the completion of the check.

3.8 Air Quality Management Plan

3.8.1 The emissions from the activities shall not result in exceedance of EU air quality standards or contribute significantly to a failure to meet national air quality standards for sulphur dioxide, oxides of nitrogen and particulate (PM10).

3.8.2 The activities shall be operated in accordance with the Air Quality Management Plan dated 5 April 2007 (or any subsequent revision to this plan agreed in writing with the Agency), except that the following methodologies (including any subsequent revisions to the methodologies agreed in writing with the Agency) will be used:

(i) Methodology for the Use and Interpretation of Monitoring and Modelling for AQS Management Plans (*Issue 5, January 2002)*

(ii) Technical Methodology for Dispersion Modelling Related to Power Station AQS Management Plans *(Issue 4, January 2003)*

(iii) Monitoring To Assess Power Station Compliance With AQS Objectives Technical Methodology (*Issue 6, March 2003)*

(iv) Generic Methodology for Compiling Station Hourly Emission Data sets from Generation Data (*Issue 5, January 2003*).

4. Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) the site protection and monitoring programme.

4.1.2 Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

4.1.3 All records required to be held by this permit shall be held on the installation and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the assessment of the impact of the emissions submitted with the application;

(b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;

(c) the annual production /treatment data set out in schedule 5 table S5.2;

(d) the performance parameters set out in schedule 5 table S5.3 using the forms specified in table S5.4 of that schedule; and

(e) details of any contamination or decontamination of the site which has occurred.

4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 5 table S5.1;

(b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.4 ; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.3 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.4 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency

4.2.5 The results of reviews and any changes made to the site protection and monitoring programme shall be reported to the Agency, within 1 month of the review or change.

4.2.6 The Operator shall by 1st October in each assessment year submit to the Agency a completed form SO2 (as referred to in Schedule 5, table S5.4) indicating the initial sulphur dioxide process B limits applicable for the next assessment year, subject to Agency approval.

4.2.7 From 1st January 2008, the operator shall submit revised forms SO2 and NO2 (as referred to in Schedule 5, table S5.4) within 28 days of the date of the closure of a relevant LCP.

4.2.8 The Operator shall by 1st October in each assessment year submit to the Agency a completed form NO2 (as referred to in Schedule 5, table S5.4) indicating the initial oxides of nitrogen process B limits applicable for the next assessment year, subject to Agency approval.

4.3 Notifications

4.3.1 The Agency shall be notified without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;

(b) the breach of a limit specified in the permit;

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.

4.3.3 Prior written notification shall be given to the Agency of the following events and in the specified time scales:

(a) as soon as practicable prior to the permanent cessation of any of the activities;

(b) cessation of operation of part or all of the activities for a period likely to exceed 1 year; and

(c) resumption of the operation of part or all of the activities after a cessation notified under (b) above.

4.3.4 The Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.5 Where the Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.6 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

(a) any change in the operator's trading name, registered name or registered office address;

(b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and

(c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Notification of Closure of Large Combustion Plant

4.3.7 From 1st January 2008, the operator shall inform the Agency of the closure of a relevant LCP within 28 days of the date of closure.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 7 shall have the meaning given in that schedule.

Schedule 1 - Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the PPC Regulations	**Description of specified activity**	**Limits of specified activity**
Section 1.1 Part A(1)(a)	Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	Receipt of coal at the coal mills, the supply of recovered char, biomass, oil and propane to the furnace, subject to the limitations imposed in Schedule 3 Table S3.2, through to the discharge of exhaust gases from the stack, flue gas conditioning with sulphur trioxide and ammonia, ash and sulphur dioxide removal from the flue gases, the export of steam to the steam systems in 3 boiler units and 3 open cycle gas turbines and any associated activities necessary to maintain the operation of the plant and fuel supplies.
Section 5.3 Part A(1)(c)(ii)	Treatment of wastewater from the flue gas desulphurisation plant.	Discharge of seawater from the Flue Gas Desulphurisation process to the discharge from the installation.
Section 3.5 Part B (f)	Pulverised fuel ash (PFA) handling and storage.	Removal of ash from the electrostatic precipitators to despatch from the installation or to treatment in the ash reprocessing plant.
Section 4.8 Part B (a)	The storage of anhydrous ammonia.	Receipt of anhydrous ammonia through to injection into the boiler flue gas ducts.
Directly Associated Activity		
Directly associated activity	Fuel storage.	Receipt of coal, oil, propane and biomass through to discharge from the mill hoppers or feed to the furnace respectively.
Directly associated activity	Ash reprocessing	From receipt of ash at the reprocessing plant to dispatch to customers and transfer of char to the boilers subject to the limitation imposed in Schedule 3 Table S3.3.
Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge from the site surface water system.
Directly associated activity	Water treatment	From receipt of raw materials to dispatch to chemical effluent and dirty water system.
Directly associated activity	The generation and export of electricity.	The receipt of steam at the steam turbines to the export of electricity to the national grid station and the direct generation of electricity from the gas turbines.
Directly associated activity	The use of water from the Bristol Channel for cooling and the seawater FGD process.	The pumping and filtering of the water, its use in the condensers and for auxiliary cooling, the seawater FGD process and discharge of the water back to the Bristol Channel via the seawater treatment plant for FGD process water.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to sections 2.1 and 2.2 in the Application.	30/03/06
Schedule 4 Notice Request dated 26/07/06	Response to sections 2.1 f) and h) detailing combustion and seawater FGD process controls.	06/10/06, 01/11/06, 10/11/06, 1/03/07 and 16/03/07, respectively
Receipt of additional information to the application	Further responses to sections 2.1 f), h) and 2.9 c) of the Schedule 4 Notice detailing abatement measures associated with nitrogen oxides emissions control (current status of TIB implementation) and main stack noise emissions respectively.	05/12/06
Receipt of additional information to the application	Further information provided relating to the baseline marine monitoring survey methodology and survey results, the design and operation of the ash reprocessing facility.	8/08/07, 10/08/07 and 22/8/07

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	A written report shall be submitted to the Agency for approval. The report shall include the results of an assessment of whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution from the activities covered by this permit. The report shall be in sufficient detail to allow a permit review. The report shall also contain a time scale for the implementation of any individual measures identified to improve the performance of the installation, including emissions control performance, as appropriate following the review. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.	1st January 2012
IC2	A written report shall be submitted to the Agency for approval. The report shall contain a protocol detailing the methodology for measuring the fraction of PM_{10} and $PM_{2.5}$ within the release of total particulate matter from the combustion process. The protocol shall include but not be restricted to a variety of operating scenarios including start up and shut down, changes in operating loads and patterns and types of abatement. The report shall also contain a proposed time-scale within which the proposed sampling programme contained within the protocol will be completed. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.	31st October 2008
IC3	A written report shall be submitted to the Agency for approval. The report shall include a detailed assessment, including economic factors, of the options to increase firing of biomass fuels. Where appropriate, the report shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.	31st May 2008
IC4	A written report shall be submitted to the Agency for approval. The report shall include the results of a water efficiency audit in accordance with section 2.4.3 of IPPC Sector Guidance Note for the Combustion Sector. This shall include, but not be limited to blow down and water treatment plant effluent reuse. The report shall also contain a time scale for the implementation of any individual measures identified to address any deficiencies. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.	1st October 2009
IC5	A written report shall be submitted to the Agency for approval. The report shall include the results of a waste minimisation audit in accordance with section 2.4.2 of IPPC Sector Guidance Note for the Combustion Sector. The report shall also contain a time scale for the implementation of any individual measures identified to address any deficiencies. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.	1st October 2009

IC6	Provide a written plan of how this installation will contribute to total emissions of SO_2 from existing major coal-fired power stations in England and Wales being minimised and in any case not exceeding 70 kt/y by 2020. The report should consider scenarios for electricity demand in 2020 and give the planned arrangements for SO_2 emissions control at this installation. (Existing coal-fired stations comprise LCP that might still be operating in 2020. These are at Aberthaw, Cottam, Drax, Eggborough, Ferrybridge, Fiddlers Ferry, Ratcliffe, Rugeley, Uskmouth and West Burton). The plan should be implemented after approval by the Environment Agency.	1st April 2008. With updated versions by 1st April 2012 & 1st April 2016
IC7	A written report shall be submitted to the Agency for approval. The report shall contain a protocol for a monitoring programme to assess changes in acidification and eutrophication deposition and ecological effects at appropriate Natura 2000 sites. The protocol will include the selection of the Natura 2000 sites and a time scale for implementation of the programme. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The protocol detailed in the report shall be implemented by the Operator from the date of approval by the Environment Agency.	1st April 2008
IC8	A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency	31st March 2009
IC9	The operator shall confirm commissioning and proving proposals and schedules for the seawater FGD processes and update this information regularly to the Agency in writing or through scheduled meetings until completion of FGD commissioning.	31st December 2007
IC10	Written proposals shall be submitted to the Agency for the retrofitting of high efficiency steam turbines to each unit and include dates for implementation. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the proposals. The proposals shall be implemented from the date of approval in writing by the Agency.	31st December 2007
IC11	A written report shall be submitted to the Agency for approval. The report shall assess the resource efficiency, carbon-in-ash and nitrogen oxide emissions benefits of improved/dynamic classifier retrofitting to the station coal mills. The report shall also include dates for implementation where it justifies retrofitting. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Any proposed retrofitting to the station coal mills identified in the report shall be implemented from the date of approval in writing by the Agency.	31st December 2007
IC12	A written report shall be submitted to the Agency for approval. The report shall confirm and quantify the resource efficiency and fly ash saleability benefits of the proposed PFA char separation and re-firing retrofit at the station. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.	31st December 2007
IC13	A written report shall be submitted to the Agency for approval. The report shall contain details of a review of BAT for secondary containment of bulk vessels, including the molten sulphur storage vessels and bunds constructed from brick or block and bund walls having penetrations at the installation. The report shall include proposals for improvements to achieve BAT and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st June 2008
IC14	A written report shall be submitted to the Agency for approval. The report shall contain details of a review of BAT for overfill protection of bulk storage vessels at the installation. The report shall include proposals for improvements to achieve BAT and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st June 2008

IC15	A written report shall be submitted to the Agency for approval. The report shall contain details of a review of BAT for secondary containment and the inspection regime of the HFO and anhydrous ammonia pipelines at the installation. The report shall include proposals for improvements to achieve BAT and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st June 2008
IC16	A written report shall be submitted to the Agency for approval. The report shall contain details of a review of the maintenance and inspection regime of the surface water drainage lines, interceptor and settlement ponds at the installation. The report shall include proposals for improvements and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st June 2008
IC17	A written report shall be submitted to the Agency for approval. The report shall contain details of a review to minimise emissions to the ground from the coal and ash handling areas through the construction of a fully lined coal storage facility, ash handling system and associated drainage. The report shall include proposals for improvements and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st June 2008
IC18	A written report shall be submitted to the Agency for approval. The report shall contain details of an environmental impact assessment of the proposed relocation of release point W1 (36" drain) upon the River Thaw. The assessment shall include, but not be limited to the requirements of the Freshwater Fish Directive. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The relocation of the release point shall be implemented from the date of approval in writing by the Agency.	31st October 2008
IC19	A written report shall be submitted to the Agency for approval. The report shall contain details of a BAT review for the reduction of nitrogen oxide emissions from the installation into the air, including proposals for improvements to achieve BAT and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	31st October 2008
IC20	A written report shall be submitted to the Agency for approval. The report shall assess the suitability of monitoring locations in the FGD absorber inlet ducting to enable continuous measurement of absorber inlet dust concentrations in accordance with BS EN13284 and include dates for implementation of such monitoring where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Any monitoring proposed in the report shall be implemented from the date of approval in writing by the Agency.	31st October 2008
IC21	A written report shall be submitted to the Agency for approval. The report shall describe the post-FGD operation local environmental quality with respect to List I and List II substance and selenium burdens in sediment and marine species as determined according to the plan submitted as further information to the application. Further reports shall be submitted annually, subject to review following completion of improvement condition reference IC22, and until notified in writing by the Agency. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the reports.	1st August 2008 (first report)
IC22	A written report shall be submitted to the Agency for approval. The report shall contain details of a BAT review for reduction of trace element emissions into controlled waters from the installation, taking into account information from the local environmental quality reports and including proposals for improvements to achieve BAT and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Any improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	1st October 2009

IC23	A written report shall be submitted to the Agency for approval. The report shall contain details of a monitoring review for trace element emissions into controlled waters from the installation, taking into account information from an FGD process mass balance using existing monitoring data and including proposals for improvements and dates for implementation where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Any improvements identified in the report shall be implemented from the date of approval in writing by the Agency.	31st October 2010

Table S1.4 Pre-operational measures for future development

Reference	Operation	Pre-operational measures
PM1	Seawater FGD process	A written report shall be submitted to the Environment Agency for approval. The report shall describe the risk assessment of worst-case storm surge tide effects upon the operation of the seawater treatment plant and include measures proposed to mitigate any effects upon seawater treatment effectiveness and abatement availability.
PM2	Seawater FGD process	A written report shall be submitted to the Environment Agency for approval. The report shall describe the proposed methodology for determination of mass releases of List I and List II substances and other pollutants from the installation as required by the Environment Agency. The methodology shall include consideration of MCERTS compliant flow monitoring strategies for absorber feeds/discharges and seawater treatment plant/total seawater cooling flows.
PM3	Seawater FGD process, ash re-processing plant and biomass handling plant	A written report shall be submitted to the Environment Agency for approval. The report shall rigorously assess the variability in background noise levels at the local sensitive receptors, in particular at night. Any change in the conclusions relating to potential for noise nuisance as a result of the power station activities shall be included along with proposals for implementation of further noise abatement measures representing BAT.

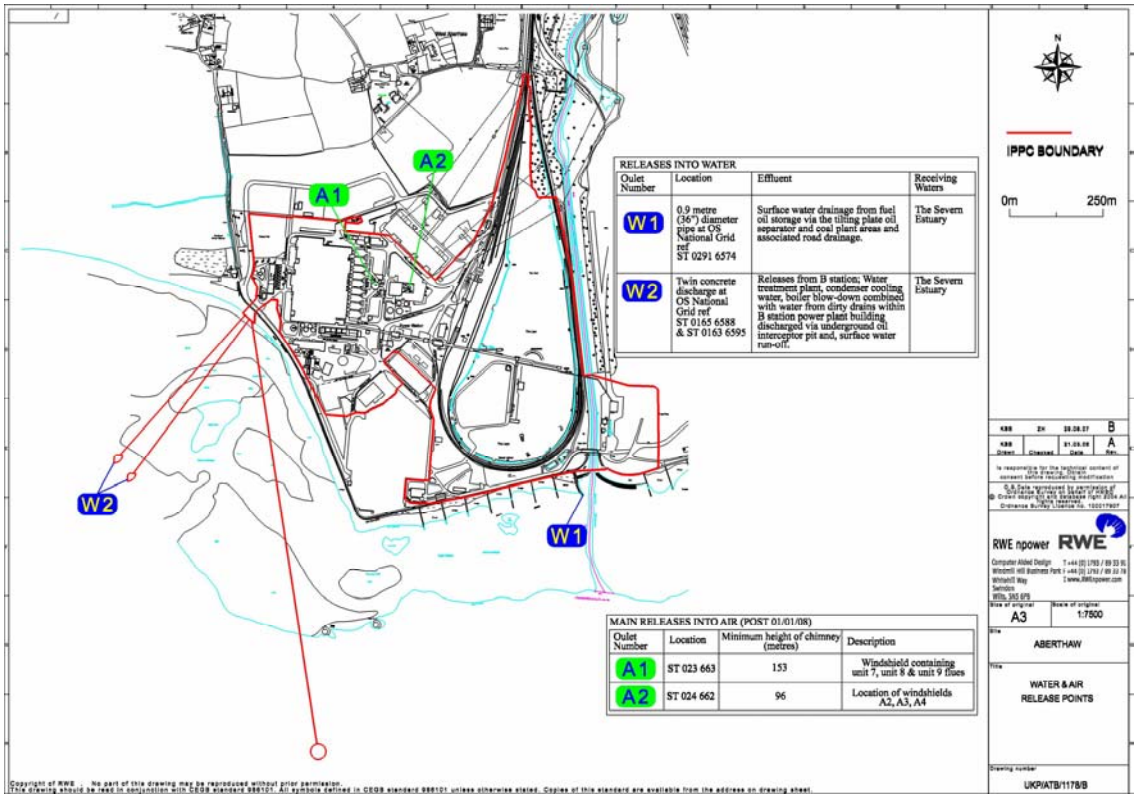
Table S1.5 Appropriate measures for fugitive emissions

Measure	Dates
A plan shall be submitted to the Environment Agency, detailing the measures to be used to monitor and control the impact of fugitive emissions of sulphur dioxide from the FGD seawater treatment plant. The plan shall be implemented by the operator from the date of approval in writing by the Agency	The plan shall be submitted by 31/03/08
A dust management plan shall be submitted to the Environment Agency, detailing the measures to be used to control fugitive emissions of dust and shall be in accordance with Section 2.2.8 of the Technical Guidance Note for Combustion Activities. The plan shall be implemented by the operator from the date of approval in writing by the Agency	The plan shall be submitted by 31/03/08

Table S1.6 Appropriate measures for noise

Measure	Dates
A noise management plan shall be submitted to the Environment Agency, detailing the measures to be used to control emissions of noise and shall be in accordance with Appendix 4 (noise management plan) of Horizontal Guidance Note H3 (Horizontal Noise Guidance) Part 2. The plan shall be implemented by the operator from the date of approval in writing by the Agency.	The plan shall be submitted by 30/06/08

Schedule 2 - Site plan



Schedule 3 - Waste types, raw materials and fuels

Table S3.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Low volatile content coal	As described in the application
Heavy Fuel Oil	≤ 1% sulphur w/w
Gas Oil until 31/12/2007	≤ 0.2% sulphur w/w
Gas Oil from 01/01/08	≤ 0.1% sulphur w/w
Biomass fuels	as defined in Article 2(11) of the EU Directive 2001/80/EC) and included in the application or otherwise agreed in writing with the Agency.
Caustic soda	≤ 0.15 ppm mercury w/w

Table S3.2 Permitted waste types and quantities for use as fuels	
Maximum quantity	No limitation
Waste code	**Description**
Relevant exempt biomass.	Biomass fuels exempt from the requirements of the WID and LCPD (as defined in Article 2(11) of EU Directive 2001/80/EC) and Article 2 of EU Directive 2000/76/EC) and included in the application or otherwise agreed in writing with the Agency
Relevant exempt waste.	Other fuels exempt from the requirements of the WID 2000/76/EC and included in the application or otherwise agreed in writing with the Agency.

Table S3.3 Permitted waste types and quantities for ash reprocessing	
Waste codes	10 01 17 only. No limitation on maximum quantity
EWC Code	**Description**
10 01 17	Pulverised fuel ash arising from the Aberthaw power station boilers only.

Schedule 4 – Emissions and monitoring

For the purposes of this Schedule, the following interpretations shall apply:

- For the continuous measurement systems fitted to the LCP release points defined in Table S4.1 the validated hourly, 48 hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval.

- The 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%.

- The 95% confidence interval for dust releases of a single measured result shall be taken to be 30%

- An invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing.

- Any day, in which more than three hourly average values are invalid shall be invalidated.

Table S4.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit[a] (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Until 31/12/07 the monitoring requirements below will apply						
A1, A2 and A3 (Unit 7, 8 and 9 flues respectively) [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Boiler Plant without FGD	50mg/m^3	monthly average	Continuous	BS EN13284-2[1,2,]
		LCP [c]	50mg/m^3			
A1, A2 and A3 (Unit 7, 8 and 9 flues respectively) [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Boiler Plant without FGD	80mg/m^3	24hour average as 97%ile	Continuous	BS EN13284-2[1,2,]
		LCP [c]	70mg/m^3			
A1, A2 and A3 (Unit 7, 8 and 9 flues respectively) [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Boiler Plant without FGD	120mg/m^3	Hourly average as 97%ile	Continuous	BS EN13284-2[1,2,]
		LCP [c]	100mg/m^3			
A1, A2 and A3 (Unit 7, 8 and 9 flues respectively) [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Boiler Plant without FGD	50mg/m^3	As per extractive method	Annual extractive test	BS EN13284-1[1,2,]
A4, A5, A6 [96 metre high flues located at NGR ST024 662]	-	Black start open cycle gas turbine units 7, 8 and 9 respectively	-	-	-	-
A7, A8, A9 [Biomass handling]	Particulate Matter	Biomass milling plant cyclone exhausts	No visible release	-	-	-
A10 [Ash handling]	Particulate Matter	Ash silo and recovery process vents	No visible release	-	-	-
A11 [Utilities]	Particulate Matter	Domestic boiler and waste wood burner flues	No visible release	-	-	-
A12 [Storage tank vents across the installation]	-	Displacement and pressure relief vents associated with liquid fuel and raw material storage	-	-	-	-

FROM 01/01/08 the monitoring requirements below will apply						
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Large Combustion Plant designed to operate on low volatile content coal	55 mg/m^3	48hour mean as 97%ile	Continuous	BS EN13284-2[1,2,]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Large Combustion Plant designed to operate on low volatile content coal	50 mg/m^3 [d]	Calendar monthly average	Continuous	BS EN13284-2[1,2,]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Particulate Matter	Large Combustion Plant with FGD designed to operate on low volatile content coal	25 mg/m^3 [d]	Calendar monthly average	Continuous	BS EN13284-2[1,2,]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Sulphur dioxide	Large Combustion Plant designed to operate on low volatile content coal	400 mg/m^3 [b]	Calendar monthly average	Continuous	BS EN 14181[1, 2]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Sulphur dioxide	Large Combustion Plant designed to operate on low volatile content coal	440 mg/m^3[b]	48hour mean as 97%ile	Continuous	BS EN 14181[1, 2]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Oxides of nitrogen	Large Combustion Plant designed to operate on low volatile content coal	1200 mg/m^3	Calendar monthly average	Continuous	BS EN 14181[1, 2]
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Oxides of nitrogen	Large Combustion Plant designed to operate on low volatile content coal	1320 mg/m^3	48hour mean as 95%ile	Continuous	BS EN 14181[1, 2]
Windshield A2 [96 metre high flue located at NGR ST024 662]	-	Large Combustion Plant (Black start open cycle gas turbine unit 7)	-	-	-	-
Windshield A3 [96 metre high flue located at NGR ST024 662]	-	Large Combustion Plant (Black start open cycle gas turbine unit 8)	-	-	-	-
Windshield A4 [96 metre high flue located at NGR ST024 662]	-	Large Combustion Plant (Black start open cycle gas turbine unit 9)	-	-	-	-
A5 [25 metre high single flue stack located at NGR ST03058 65958]	Particulate Matter and entrained droplets	PFA recycling plant seawater scrubber	No visible release	-	-	-
A5 [25 metre high single flue stack located at NGR ST03058 65958]	Ammonia	PFA recycling plant seawater scrubber	2 mg/m^3	As per extractive method	Annual extractive test	US EPA Method 26
A7, A8, A9 [Biomass handling]	Particulate Matter	Biomass milling plant cyclone exhausts	No visible release	-	-	-

A10 [Ash handling across the installation]	Particulate Matter	Ash silo and recovery process vents	No visible release	-	-	-
A11 [Utilities]	Particulate Matter	Domestic boiler and waste wood burner flues	No visible release	-	-	-
A12 [Storage tank vents across the installation]	-	Displacement and pressure relief vents associated with liquid fuel and raw material storage	-	-	-	-

[1] Subject to the detailed requirements and interpretations agreed with the Environment Agency in the Joint Environmental Programme, Joint Industry/Environment Agency Working Group In stack monitoring, publication **"Monitoring SO_2 and NO_x and Dust Emissions from Power Stations – A Guide to Current Best Practice for the Operators of Coal and Oil Fired Boilers"** PT/06/BE1916/R**,** D.P.Graham**,** December 2006 (or any subsequent revision to this agreed in writing with the Environment Agency)

[2]Subject to the detailed requirements and interpretations agreed with the Environment Agency in the Joint Environmental Programme, Joint Industry/Environment Agency Working Group In stack monitoring publication **"Use of CEMs for Reporting Emissions of SO_2, NO_X and Dust under PPC and the LCPD. A Guide to Current Best Practice for the Operators of Coal and Oil Fired Boilers "Graham, D.P., Salway, G, PT/06/BE1917/R, December 2006 " (**or any subsequent revision to this agreed in writing with the Environment Agency)

[a] Excludes start up and shut down.

[b] A desulphurisation rate of **94**% will replace the ELV where the LCP cannot meet the ELV due to characteristics of the fuel as set out in the application or as a result of an unforeseeable fluctuation in fuel quality.

[c] The LCP limit applies as an average across all unabated units within an LCP when two or more such units are operating above 75% minimum stable generation.

[d] The monthly average particulate matter emission limit value for LCP operating temporarily with both FGD abated and non-FGD abated units will be 50 mg/m^3. The monthly average particulate matter emission limit value of 25 mg/m^3 will apply upon completion of commissioning of all FGD abated units.

Table S4.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 [0.9 metre diameter out fall located at NGR ST02916574]	Total suspended solids	Surface water drainage from roads, coal plant stockyard, & silo areas	100 mg/l	Spot sample during discharge	Weekly	BS EN 872
W1 [0.9 metre diameter out fall located at NGR ST02916574]	Ammoniacal nitrogen	Surface water drainage from roads, coal plant stockyard, & silo areas	2 mg/l	Spot sample during discharge	Monthly	BS 6068-2.11
W1 [0.9 metre diameter out fall located at NGR ST02916574]	Cadmium and its compounds, expressed as cadmium (Total Cd)	Surface water drainage from roads, coal plant stockyard, & silo areas	0.01 mg/l	Spot sample during discharge	Monthly	BS 6068-2.89
W1 [0.9 metre diameter out fall located at NGR ST02916574]	Total hydrocarbon oil	Surface water drainage from roads, coal plant stockyard, & silo areas	3 mg/l	Spot sample during discharge	Daily	EN ISO 9377-2
W1 [0.9 metre diameter out fall located at NGR ST02916574]	pH	Surface water drainage from roads, coal plant stockyard, & silo areas	6-9	Spot sample during discharge	Daily	BS6068-2.50
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Differential total suspended solids	Condenser cooling water, FGD process water, boiler water treatment plant effluent, boiler blow down, dirty water drainage, surface water drainage	50 mg/l	24-hour composite sample	Weekly average of daily samples	BS EN 872
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Ammoniacal nitrogen	Condenser cooling water, FGD process water, boiler water treatment plant effluent, boiler blow down, dirty water drainage, surface water drainage	0.1 mg/l (above back ground)	24-hour composite sample	Monthly average of daily samples	BS 6068-2.11
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Differential temperature	Condenser cooling water, FGD process water, boiler water treatment plant effluent, boiler blow down, dirty water drainage, surface water drainage	13.5^{O}C	For 98% of all continuous daily average values	Continuous	Calibrated and traceable to national standards

W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Total hydrocarbon oil	Condenser cooling water, FGD process water, boiler water treatment plant effluent, boiler blow down, dirty water drainage, surface water drainage	3 mg/l	24-hour composite sample	Daily	EN ISO 9377-2
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	pH	Condenser cooling water, FGD process water, boiler water treatment plant effluent, boiler blow down, dirty water drainage, surface water drainage	6-8.5	Instantaneous	Continuous	BS6068-2.50

Table S4.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
SWTP1 [Unit 7 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 7 FGD absorber	0.001 mg/l (above background)	24-hour composite sample	Maximum daily value monitored weekly	BS EN 13506
SWTP1 [Unit 7 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 7 FGD absorber	0.0005 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS EN 13506
SWTP1 [Unit 7 FGD absorber outlet to seawater treatment plant]	Cadmium and its compounds, expressed as cadmium (Total Cd)	Unit 7 FGD absorber	0.0002 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS 6068-2.89
SWTP2 [Unit 8 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 8 FGD absorber	0.001 mg/l (above background)	24-hour composite sample	Maximum daily value monitored weekly	BS EN 13506
SWTP2 [Unit 8 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 8 FGD absorber	0.0005 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS EN 13506
SWTP2 [Unit 8 FGD absorber outlet to seawater treatment plant]	Cadmium and its compounds, expressed as cadmium (Total Cd)	Unit 8 FGD absorber	0.0002 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS 6068-2.89
SWTP3 [Unit 9 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 9 FGD absorber	0.001 mg/l (above background)	24-hour composite sample	Maximum daily value monitored weekly	BS EN 13506
SWTP3 [Unit 9 FGD absorber outlet to seawater treatment plant]	Mercury and its compounds, expressed as mercury (Total Hg)	Unit 9 FGD absorber	0.0005 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS EN 13506
SWTP3 [Unit 9 FGD absorber outlet to seawater treatment plant]	Cadmium and its compounds, expressed as cadmium (Total Cd)	Unit 9 FGD absorber	0.0002 mg/l (above background)	24-hour composite sample	Monthly average of daily samples	BS 6068-2.89

Table S4.4 Annual limits(Excluding start up and shut down except where otherwise stated).				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Sulphur dioxide	Air	Assessment year	Installation A Limit (includes start up and shut down)	A1 – A3 (Unit 7, 8 and 9 flues respectively)
		01/10/06-31/12/07	50,700 tonnes	
		01/01/08-31/12/08 and subsequent years	39,000 tonnes	Windshield A1
Sulphur dioxide	Air	Assessment year	Operator B limit[a]	Relevant processes
		01/10/06-31/12/07	103,610 tonnes	
		01/01/08-31/12/08 and subsequent years	46,142 tonnes	
Sulphur dioxide	Air	Process B limit		Windshield A1
Sulphur dioxide	Air	11.4 tSO_2/GWh averaged across each assessment year until 31/12/07		Boiler plant not fitted with FGD[b]
Oxides of nitrogen	Air	Assessment year	Installation Annual Emission Limit (includes start up and shut down)	A1 – A3 (Unit 7, 8 and 9 flues respectively)
		01/10/06-31/12/07	46,800 tonnes	
		01/01/08 and subsequent years	36,000 tonnes	Windshield A1
Oxides of nitrogen	Air	Assessment year	Operator B Limit[a]	Relevant processes
		01/01/08 –31/12/08 and subsequent years	68,710 tonnes	
Oxides of nitrogen	Air	Process B limit		Windshield A1
Cadmium and its compounds, expressed as cadmium (Total Cd)	Controlled Water	30 kg [c]		W1 and W2 (including start-up and shut-down)
Lead and its compounds, expressed as lead (Total Pb)	Controlled Water	970 kg [c]		W1 and W2 (including start-up and shut-down)
Mercury and its compounds, expressed as mercury (Total Hg)	Controlled Water	60 kg [c]		W1 and W2 (including start-up and shut-down)
Zinc and its compounds, expressed as zinc (Total Zn)	Controlled Water	380 kg [c]		W1 and W2 (including start-up and shut-down)

[a] or such other limit for that year as has been approved by the Agency following notification by the operators on form SO1 or NO1(as referred to in Schedule 5, table S5.4).

[b] In the case of an installation which contains boiler plant with and without FGD fitted in any assessment year the tSO_2/GWhr limit shall apply on the basis of an appropriate pro-rating, subject to prior approval by the Agency of the basis of the calculation.

[c] Determined from discharge monitoring by differential mass balance following completion of pre-operational measure reference PM2 in Table S1.4 of Schedule 1 in this permit or as agreed in writing following completion of improvement condition reference IC23 in Table S1.3 of Schedule 1 in this permit.

Table S4.5 Surface water monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Seawater intake from Bristol Channel	Total suspended solids	24-hour composite sample	BS EN 872	analysed **weekly** and reported monthly as monthly average
Seawater intake from Bristol Channel	pH	Continuous	BS6068-2.50	reported monthly as min max and average pH
Seawater intake from Bristol Channel	Flow	Continuous	BS 3680 or as agreed in writing	reported monthly as min max and average daily flow
Seawater intake from Bristol Channel	Mercury and its compounds, expressed as mercury (Total Hg)	24-hour composite sample	BS EN 13506	reported monthly as monthly average
Seawater intake from Bristol Channel	Mercury (on filtered sample)	24-hour composite sample	BS EN 13506	reported monthly as monthly average
Seawater intake from Bristol Channel	Cadmium and its compounds, expressed as cadmium (Total Cd)	24-hour composite sample	BS 6068-2.89	reported monthly as monthly average
Seawater intake from Bristol Channel	Cadmium (on filtered sample)	24-hour composite sample	BS 6068-2.89	reported monthly as monthly average
Seawater intake from Bristol Channel	Copper and its compounds, expressed as copper (Total Cu)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Copper (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Arsenic and its compounds, expressed as arsenic (Total As)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Boron and its compounds, expressed as boron (Total B)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Nickel and its compounds, expressed as nickel (Total Ni)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Lead and its compounds, expressed as lead (Total Pb)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Lead (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Vanadium and its compounds, expressed as vanadium (Total V)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Chromium and its compounds, expressed as chromium (Total Cr)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Zinc and its compounds, expressed as zinc (Total Zn)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Zinc (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Selenium and its compounds, expressed as selenium (Total Se)	24-hour composite sample	BS 6068	reported monthly as monthly average

Seawater intake from Bristol Channel	Iron and its compounds, expressed as iron (Total Fe)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Iron (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Aluminium and its compounds, expressed as aluminium (Total Al)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Manganese and its compounds, expressed as manganese (Total Mn)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Molybdenum and its compounds, expressed as molybdenum (Total Mo)	24-hour composite sample	BS 6068	reported monthly as monthly average
Seawater intake from Bristol Channel	Fluoride	24-hour composite sample	EN ISO 10304-1	reported monthly as monthly average
Seawater intake from Bristol Channel	Chemical Oxygen Demand (COD)	24-hour composite sample	ISO 6060: 1989	reported monthly as monthly average
Seawater intake from Bristol Channel	Nitrite (as N)	24-hour composite sample	EN ISO 13395	reported monthly as monthly average
Seawater intake from Bristol Channel	Nitrate (as N)	24-hour composite sample	EN ISO 13395	reported monthly as monthly average

Table S4.6 Noise monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Perimeter noise survey at locations specified in the Application or as agreed with the Agency in writing	Noise	Monthly	BS 4142:1997	Representative day time, night time and background measurements to be taken

Table S4.7 Ambient air monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Dust deposition measurements at locations specified in the Application or as agreed with the Agency in writing	Deposited particulate matter	Continuous	BS 1747 or equivalent	Directional dust deposit gauge. Contents of deposit gauge to be measured monthly

Table S4.8 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Dissolved Oxygen (DO)	Continuous	EN 25814	reported monthly as min, max and average DO
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Nitrite (as N)	24-hour composite sample	EN ISO 13395	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Nitrate (as N)	24-hour composite sample	EN ISO 13395	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Chemical Oxygen Demand (COD)	24-hour composite sample	ISO 6060: 1989	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Cadmium (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Copper (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Iron (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Lead (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Mercury (on filtered sample)	24-hour composite sample	BS EN 13506	reported monthly as monthly average
W2 [twin discharge structures located at NGR ST01656588 and ST01636595]	Zinc (on filtered sample)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	pH	Continuous	BS6068-2.50	reported monthly as min, max and average pH
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Flow	Continuous	BS 3680	reported monthly as min, max and average daily flow
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Copper and its compounds, expressed as copper (Total Cu)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Arsenic and its compounds, expressed as arsenic (Total As)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Boron and its compounds, expressed as boron (Total B)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Nickel and its compounds, expressed as nickel (Total Ni)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Lead and its compounds, expressed as lead (Total Pb)	24-hour composite sample	BS 6068	reported monthly as monthly average

SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Vanadium and its compounds, expressed as vanadium (Total V)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Chromium and its compounds, expressed as chromium (Total Cr)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Zinc and its compounds, expressed as zinc (Total Zn)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Selenium and its compounds, expressed as selenium (Total Se)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Iron and its compounds, expressed as iron (Total Fe)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Aluminium and its compounds, expressed as aluminium (Total Al)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Manganese and its compounds, expressed as manganese (Total Mn)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Molybdenum and its compounds, expressed as molybdenum (Total Mo)	24-hour composite sample	BS 6068	reported monthly as monthly average
SWTP1, 2 & 3 [Unit 7, 8 & 9 FGD absorber outlets to seawater treatment plant]	Fluoride	24-hour composite sample	EN ISO 10304-1	reported monthly as monthly average
Trace elements in coal delivered to the station	All List I & II elements liable to be present plus selenium	Each parent delivery [a]	UKAS accredited ICPMS [a]	reported annually as annual average
Windshield A1 [153 metre high 3 flue stack located at NGR ST023663]	Individual boiler flue efflux temperature	Continuous	Calibrated and traceable to national standards	reported monthly as minimum hourly and monthly averages
A13, A14, A15 [Seawater absorber inlet flues from Unit 7, 8 and 9 boiler electrostatic precipitators respectively]	Particulate Matter	Continuous	To be confirmed upon completion of Improvement Condition reference IC20	reported monthly as maximum hourly and monthly averages

[a] Monitoring method and frequency to be confirmed following completion of pre-operational measure reference PM2 in Table S1.4 of Schedule 1 in this permit or as agreed in writing following completion of improvement condition reference IC23 in Table S1.3 of Schedule 1 in this permit.

Schedule 5 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Fuel use and detailed emission data	Large Combustion Plant designed to operate on low volatile content coal	Monthly	Permit issue
Mass emission data for SO_2, NO_x and dust	Windshield A1, A2, A3 and A4	Monthly	Permit issue
SO_2, NO_X, and dust compliance	Windshield A1	Monthly	Permit issue
Discontinuous monitoring for SO_2, NO_x and dust	Windshield A2, A3 and A4	6 monthly	Permit issue
Ammonia release to air	A5	Annually	Permit issue
Individual boiler flue efflux temperature	Windshield A1	Monthly	Permit issue
Continuous particulate matter monitoring at FGD absorber inlets	A13, A14, A15 [Seawater absorber inlet flues from Unit 7, 8 and 9 boiler electrostatic precipitators respectively]	Monthly	Permit issue
Emission to water sample and analysis results	W1 & W2; SWTP1, 2 & 3	Monthly/4 weekly	Permit issue
Bristol Channel water sample and analysis results	Seawater intake	Monthly/4 weekly	Permit issue
Mass release data to Bristol Channel	W1 & W2	Monthly/4 weekly	Permit issue
Trace elements in coal delivered to the station	Stock yard	Annually	Permit issue
Noise	Perimeter noise survey at locations specified in the Application or as agreed with the Agency in writing	Monthly	Permit issue
Deposited particulate matter	Dust deposition measurements at locations specified in the Application or as agreed with the Agency in writing	Monthly	Permit issue
Sulphur dioxide Operator B Limit	Large combustion plants controlled by operator – "relevant processes"	When an Operator wishes to make a transfer	Permit issue
Sulphur dioxide Process B Limit	Large combustion plants controlled by operator – "relevant processes"	Required with Form SO1	Permit issue
Nitrogen oxides Operator B Limit	Large combustion plants controlled by operator – "relevant processes"	When an Operator wishes to make a transfer	01/01/08
Nitrogen oxides Process B Limit	Large combustion plants controlled by operator – "relevant processes"	Required with Form NO1	01/01/08

Table S5.2: Annual production/treatment	
Parameter	**Units**
Power generated	GWhrs

Table S5.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage	Annually	m^3
Coal usage	Annually	MJ related to net CV
Coal usage	Monthly	t
Gas usage (Propane)	Annually	MJ related to net CV
Gas usage (Propane)	Monthly	t
Fuel oil usage	Annually	MJ related to net CV
Fuel oil usage	Monthly	t
Biomass usage	Annually	MJ related to net CV
Biomass usage	Monthly	t

Table S5.4 Reporting forms				
Media/ parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
Air / Fuel use and total release data	ESI01	Permit issue	SI & Central Office	24/11/06
Air/ Mass emission data for SO_2,NO_x and Dust	ESI02	Permit issue	SI & Central Office	24/11/06
Air/ Mean concentrations and annual percentiles emission data for SO_2, NO_x and dust	ESI03	01/01/08	SI & Central Office	24/11/06
Air/Energy Input and mass emissions	ESI04	Permit issue	SI and Central Office	24/11/06
Air/ 6 monthly discontinuous monitoring for SO_2, NO_x and dust	ESI05	01/01/08	SI and Central Office	24/11/06
Air/Ammonia releases	Air1	Permit issue	SI	30/11/07
Water/ Emission to water sample and analysis results	Water1	Permit issue	SI	30/11/07
Water/ Bristol Channel water sample and analysis results	Water2	Permit issue	SI	30/11/07
Water/ Mass emission data to Bristol Channel	Water3	Permit issue	SI	30/11/07
Trace elements in coal delivered to the station	Coal1	Permit issue	SI	30/11/07
Noise	Noise1	Permit issue	SI	30/11/07
Deposited particulate matter	Deposition1	Permit issue	SI	30/11/07
Process/Flue gas temperature and absorber inlet dust monitoring	Process1	Permit issue	SI	30/11/07
Power generation and water usage	Performance1	Permit issue	SI	30/11/07
Sulphur dioxide Operator B Limit	SO1	Permit issue	SI & Central Office	16/1/07
Sulphur dioxide Process B Limit	SO2	Permit issue	SI & Central Office	16/1/07
Nitrogen oxides Operator B Limit	NO1	01/01/08	SI & Central Office	16/1/07
Nitrogen oxides Process B Limit	NO2	01/01/08	SI & Central Office	16/1/07

Schedule 6 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

Part A

Permit Number	
Name of operator	
Location of Installation	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of RWE npower plc

Schedule 7 - Interpretation

"*accident*" means an accident that may result in pollution.

"*annually*" means once every year.

"*assessment year*" means any complete calendar year except that the first assessment year for the purposes of this permit shall run from 1 October 2006 until 31st December 2007

"*application*" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 4 to the PPC Regulations.

"authorised officer" means any person authorised by the Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"background concentration" means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site and the concentration in seawater entering the installation.

"central office" means an address for reporting forms for the attention of Agency head office staff, which has been separately notified to the operator.

"combustion technical guidance note " means IPPC Sector guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by the Agency.

"emissions to land", includes emissions to groundwater.

"*FGD*" means flue gas desulphurisation

"fugitive emission" means an emission to air, water or land from the activities which is not controlled by an emission limit.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"*land protection guidance*", means Agency guidance "H7 - Guidance on the protection of land under the PPC Regime: application site report and site protection monitoring programme".

"*large combustion plant" or* "LCP" is a boiler or group of boilers discharging waste gases through a common windsheld or stack, where the total thermal input is 50 MWth or more, based on gross calorific value.

"Large Combustion Plant Directive" means Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.

"MCERTS" means the Agency's Monitoring Certification Scheme.

"no visible release" means: no visual evidence of dust emission or deposit from, within or around the release point to which this requirement refers.

"notify without delay/notified without delay" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

"*operational hours*" of an LCP is the time spent between start up and shut down of the LCP.

"operator B Limit" means the limit for the assessment year in question specified in column 3 of Table S4.4 in Schedule 4 or such other limit for that year as has been approved by the Agency following notification by the operator on form SO1 or NO1, as referred to in Schedule 5, tableS5.4.

"*process B limit*" means such limit for the assessment year in question, as has been approved by the Agency following a notification by the operator on form SO2 or NO2, as referred to in Schedule 5, table S5.4 or for a single station operator *"process B limit"* has the same meaning as *"operator B limit*".

"PPC Regulations" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"*quarter*" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"relevant processes" means the combustion processes at Aberthaw Power Station and those at Didcot A Power Station, Fawley Power Station, Littlebrook Power Station and Tilbury Power Station carried on by RWE npower plc which are subject to permits requiring compliance with an operator B limit and "relevant process" means any one such process carried on by RWE npower plc.

"Shut down" is defined as when the output from last unit within an LCP has fallen below SOP in accordance with "Principles for Determining MSG and SOP Thresholds for a Unit " Issue 3.0, 23 October 2006 or any subsequent revision to this protocol agreed in writing with the Agency

"site protection and monitoring programme" means a document which meets the requirements for site protection and monitoring programmes described in the Land Protection Guidance.

"Start up" is defined as when the first unit within an LCP has started up in accordance with "Principles for Determining MSG and SOP Thresholds for a Unit " Issue 3.0, 23 October 2006 or any subsequent revision to this protocol agreed in writing with the Agency

"t SO_2/GWh" in Table S4.4 is given by the following equation

$$t.SO_2/GWh = Tot_s/G_e$$

Where:

Tot_s is the total mass of SO_2 emitted over an Assessment Year.

G_e is the total electricity generated using fuels combusted at the power station expressed as GWh over an Assessment Year.

In the absence of an agreed protocol based on the continuous measurement of sulphur dioxide or other method agreed in writing with the Agency, the emission of sulphur dioxide shall be calculated in accordance with the formula:

Sulphur dioxide emitted (Tot_s)(tonnes) = [(**Sc** x **Tc** x 0.95) + (**So** x **To**) + (**Sg** x **Tg**)] x 0.02

where -

Sc	=	sulphur content of soild fuel (% w/w);
So	=	sulphur content of liquid fuel (% w/w);
Sg	=	sulphur content of gas (% w/w);
Tc	=	solid fuel burned (tonnes);
To	=	liquid fuels burned (tonnes);
Tg	=	gaseous fuel burned (tonnes)

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

"year" means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

(a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

(b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content

END OF PERMIT