Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Severn Power Station

Siemens plc
West Nash Road
Newport
Gwent
NP18 2BZ

Permit number

EPR/HP3737UE

Severn Power Station
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Introductory note

This introductory note does not form a part of the permit

The main features of the facility are as follows.

The installation is located at West Nash Road, Newport, Gwent, NGR 332460, 183680 and covers an area of approximately 6ha. This facility is surrounded by a number of existing large-scale industrial developments such as a coal-fired power station and several protected habitats are situated within 15km of the installation, namely the Severn Estuary SAC (candidate), SPA, Ramsar and SSSI; River Usk (Lower Usk) / Afon Wysg (Wysglsaf) SAC and SSSI; Gwent Levels - Nash and Goldcliff SSSI and Gwent Levels - St Brides SSSI. The site is operated and maintained by Siemens plc.

Severn Power Station is a new 1,441MWth Combined Cycle Gas Turbine (CCGT) consisting of two single shaft machines with a gas turbine and steam turbine generator on the same shaft line, and a nominal overall efficiency of 57.3%. The gas turbine produces a hot exhaust gas used to generate steam in a boiler (HRSG) and drive a steam-powered turbine. Both turbines drive a common generator to produce electricity for direct delivery via the National Transmission System. The gas turbines use dry low NOx technology to control emissions. Exhaust gases from the two HRSGs are discharged to atmosphere via two stacks, 65m in height and 8m in diameter (LCP Windshields 1 and 2). Low energy steam leaving the steam turbine is sent to the Air Cooled Condenser (ACC) to be cooled and converted back to condensate for reuse in the HRSG therefore there is no requirement for large quantities of cooling water to be abstracted from and returned to the River Usk and there is no steam plume because no water is released from the condenser, only heat.

The exact power supply requirements and operating regime is subject to power supply agreements with National Grid and may result in continuous operations during winter months and 12-hourly operations during summer months, with the resultant increase in emissions due to numerous start-up and shut-downs.

The main fuel used within the installation is natural gas. No back up fuel will be used in the principal combustion equipment at this installation therefore in the event of the gas turbines tripping, emergency diesel generators will be started automatically to supply emergency power. Emissions from a small 11MWth, natural gas-fired auxiliary boiler will be controlled using good combustion techniques and regular maintenance. The auxiliary boiler is required to produce steam when no HRSG is in operation.

The main emissions from the combustion of natural gas are oxides of nitrogen and carbon monoxide with additional emissions of sulphur dioxide from the combustion of diesel. The main pollutant of concern for local impacts is nitrogen oxide (NO) which is then converted to nitrogen dioxide (NO2) in the atmosphere and any sulphur dioxide emissions are controlled by the sulphur specification of the diesel and its limited use.

Severn Power Station is required to meet the relevant provisions of the Large Combustion Plant Directive (LCPD) for new gas turbines.

There will be no direct discharge of effluents to controlled waters. Neutralised Effluent from the Water Treatment Plant and the Condensate Polishing Plant will be batch discharged to the river Usk

via an above ground pipework system and controlled by this permit. The capacity of the neutralisation pit is 250m3 and discharge occurs based on pH control and level in the pit. At a discharge rate 21 kg/s it will take approximately 3½ hours to empty the pit. Depending on plant operations it is anticipated that it may then take several days to refill the pit before the next discharge occurs.

Oily Water from the process building sumps, sampling, auxiliary boiler blowdown will be collected in a holding pond, batch discharged to the river Usk and controlled by this permit. There are two holding ponds (duty/standby) each having a capacity of 150 m3 and discharge occurs based on the level in the pit. At a discharge rate 20 kg/s it will take approximately 2 hours to empty one of the holding ponds. Depending on plant operations it is anticipated that it may then take several days to refill the pond before the next discharge occurs.

Surface Water run-off from roofs and roads will be collected in a separate holding pond with a capacity of 2,500 m3. It is emptied on level control via an oil/water separator and is expected to be of sufficient quality to be reused in cleaning the air cooled condensers (ACC) with any overflow directed to the river Usk under this permit.

Treated sanitary effluent is discharged to the River Usk under a Water Resources Discharge Consent.

Odour should not be a problem at this installation and noise emissions will be monitored during the commissioning and early stages of normal commercial operations to confirm the predicted acceptable noise levels have been achieved.

The status log of the permit sets out the permitting history, including any changes to the permit reference number

Status Log of the permit		
Detail	**Date**	**Response Date**
Application EPR/HP3737UE	Duly made 26/03/09	
Schedule 5 Notice	Issued 27/10/09	20/11/09
Submission of further information: MSDS for acid and caustic solutions. SPL ref SEV-MISC-0087	02/12/09	
Submission of further information: water impact assessment. SPL ref SEV-MISC-0108	28/01/10	
Submission of further information: H1 spreadsheets	10/03/10	
Submission of further information Chemical cleaning operations ref SEV-MISC-0140	22/03/10	
Permit determined	09/04/10	

Other existing Licences/Authorisations/Registrations relating to this site		
Holder	**Reference Number**	**Date of issue**
Severn Power Limited Discharge Consent	AN0260501	24/12/08
Severn Power Limited Greenhouse Gas Emissions Permit	GB-EA-ETCO2-1392	31/01/08

End of Introductory Note

Permit

Permit number
EPR/HP3737UE

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

Siemens plc ("the operator"),

whose registered office (or principal office) is

Faraday House
Sir William Siemens Square
Frimley
Camberly
GU16 8QD.

company registration number **727817**

to operate a facility comprising an installation at
Severn Power Station
West Nash Road
Newport
Gwent
NP18 2BZ

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

Name	Date
Mark Jenkins	9th April 2010

Authorised 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, non-conformances and closure 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.

1.3.2 The operator shall review the practicality of CHP implementation at least every two years. The results shall be reported to the Agency within 2 months of each 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 further appropriate 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.

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 green on the site plan at Schedule 2 to this permit.

2.3 Operating techniques

2.3.1 (a) 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.

(b) If notified by the Agency that the activities are giving rise to pollution, the operator shall submit to the Agency for approval within the period specified, a revision of any plan specified in Schedule 1, table S1.2 or otherwise required under this permit, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Agency.

2.3.2 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazard classification associated with the waste; and

(e) the waste code of the waste.

2.3.3 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.3.4 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.

2.4 Improvement programme

2.4.1 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.

2.4.2 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.

2.5 Pre-operational conditions

2.5.1 The activities shall not be brought into operation until the measures specified in Schedule 1 table S1.4A have been completed.

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 and S4.2.

3.1.2 The limits given in Schedule 4 shall not be exceeded.

3.2 Fugitive emissions of substances

3.2.1 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, but not limited to, those specified in any approved fugitive emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Agency that the activities are giving rise to pollution, submit to the Agency for approval within the period specified, a fugitive emissions management plan;

(b) implement the approved fugitive emissions management plan, from the date of approval, unless otherwise agreed in writing by the Agency.

3.2.3 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.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

(a) if notified by the Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Agency for approval within the period specified, an odour management plan;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

(a) if notified by the Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Agency for approval within the period specified, a noise and vibration management plan;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Agency.

3.5 Monitoring

3.5.1 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 and S4.2.

3.5.2 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.

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

3.5.4 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 and S4.2, unless otherwise specified in that Schedule.

3.6 Monitoring for the purposes of the Large Combustion Plant Directive

3.6.1 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.

3.6.2 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.

3.6.3 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.

3.6.4 Unless otherwise agreed in writing by the Agency in accordance with condition 3.6.5 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.

3.6.5 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.

3.6.6 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.

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) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 All records, plans and the management system required to be maintained by this permit shall be held on the site where practicable, or other location agreed in writing and controlled by the operator.

4.2 Reporting

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

4.2.2 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 the permit including an interpretive review of that data; and

(b) the performance parameters set out in Schedule 5 table S5.3 using the forms specified in table S5.4 of that Schedule.

4.2.3 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.

4.2.4 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.

4.3 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; or

(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 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.

4.3.4 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:

Where the operator is a registered company:

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

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

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

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

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Agency shall be notified within one month of:

(a) a decision by the Secretary of State not to re-certify the agreement;

(b) a decision by either the operator or the Secretary of State to terminate the agreement; and

(c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.3.8 From 1 January 2008 the operator shall inform the Agency in writing of the closure of any 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.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “without delay”, in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities			
Ref	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A1	S1.1 A1 (a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more	Electricity is generated using two single shaft machines with a gas turbine and a steam generator on the same shaft line (Unit 10 and Unit 20). Hot gases from the gas turbines pass into heat recovery steam generators (HRSG) from which high pressure steam is extracted and passed into steam turbines which drive generators to produce electricity. Each shaft-line has a net electrical output of 412.2MWe, the aggregated capacity is 1,141MW_{th} and the resultant electricity is exported to the National Grid. 11MW_{th} natural gas fired auxiliary boiler.	The receipt and storage of raw materials including natural gas (excluding the AGI gas receiving facilities), water treatment chemicals, lubricating oils and water. All cooling systems and the closed cooling water system. The two 65m high stacks from the HRSGs, and the associated devices and systems for controlling combustion conditions and emissions. The receipt, storage and operation of the demineralised water plant, condensate polishing plants and those required for conditioning of the water/steam cycle systems. The collection and treatment of wastewater, surface water and the operation of the oil/water separators. Includes the initial commissioning period for all new equipment. Includes oil and diesel receipt and storage.
	Directly Associated Activity		
A2	Back-up power supply	Two emergency diesel generators, 780kVA each Two generator step-up transformers, 506MVA each.	Includes oil and diesel receipt and storage.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	Sections 2 and 5 of the application document in response to section 5a technical standards Part B of the application form, and the Odour Management Plan, Noise Management Plan and Fugitive Emissions Management Plan in Section 4 of the Application.	26/03/09
Response to Schedule 5 Notice dated 27/10/0	The entire response	20/11/09
Chemical cleaning operations. Document reference: SAG-SEV-1118	The entire document	21/08/09

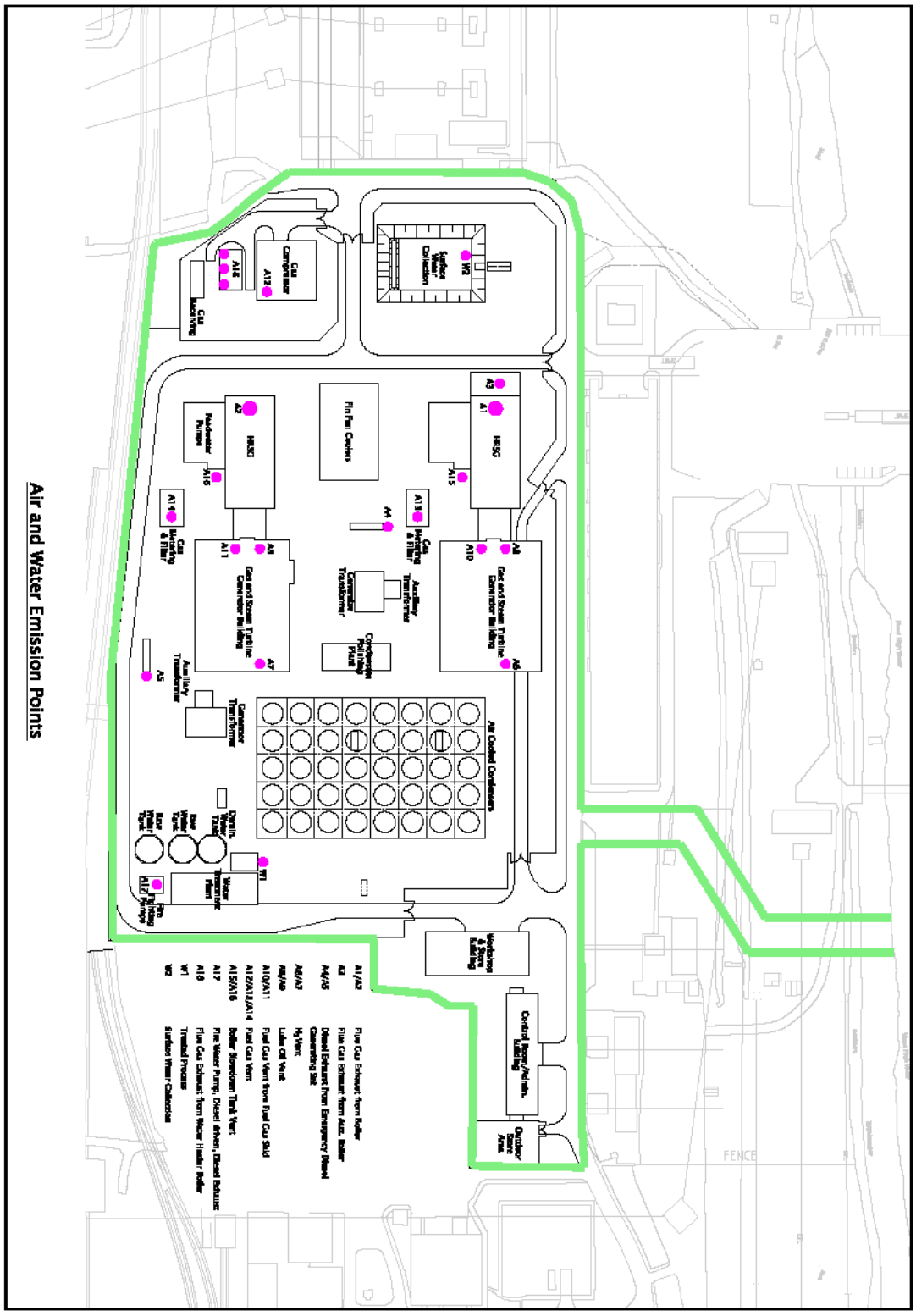
Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Chemical cleaning operations. Document reference: SEV-MISC-0140	The entire document and associated impact assessments	22/03/10

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	**Commencement of commercial operations** The Operator shall write to the Environment Agency informing us of the date upon which commercial operations commence.	Within 24 hours of commercial operations commencing
IC2	**Operating procedures, emergency response procedures and training** The Operator shall submit a report to the Environment Agency, confirming that the necessary operating and emergency response procedures are in place (with references to Section 1 of EPR 1.00 guidance note "Getting the Basics Right" available at the following location: http://publications.environment-agency.gov.uk/pdf/GEHO0209BPHU-e-e.pdf, Section 1.4 of Guidance Note H1 Environmental Risk Assessment Part 1, section 2.3 of the Technical Guidance Note for the Combustion Sector and sections 2.3.2 and 4.10 of the Application), are available for review and that staff have received the necessary training.	At least 2 weeks before commercial operations commence
IC3	**Monitoring emissions to air 1** The Operator shall use MCERTs contractors to undertake air emissions monitoring in accordance with M1, to assess the homogeneity of flow within stacks A1 and A2. To give the Environment Agency the opportunity to audit these testing procedures on site, the Operator shall submit a copy of the contractor's Site Specific Protocol (SSP) to the Environment Agency.	At least 2 weeks before homogeneity assessment work commences.
IC4	**Monitoring emissions to air 2** The Operator shall submit a report to the Environment Agency demonstrating that the relevant QAL1 and QAL2 requirements of BS EN 14181 have been achieved.	4 months after commercial operations commence.
IC5	**Noise monitoring** The Operator shall conduct a noise survey in accordance with Appendix C of Appendix A4 of the Application, BS4142:1997 and the Horizontal Guidance Note IPPC H3 Part 2 noise guidance. Also, review and compare the findings against indicative BAT requirements and if necessary, justify where Rating Levels (as defined in BS 4142: 1997) from the installation exceed the numerical value of the Background Noise Level (LA90,T) at the noise– sensitive receptors and carry out a tonal assessment using 1/3 octave and narrow band frequency analysis to identify the source of any problem plant noise. Submit a copy of the report to the Environment Agency. Where improvements are required, the report shall include proposals with an implementation plan, to be agreed with the Agency.	4 months after commercial operations commence.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC6	**Commissioning report** Following the commissioning of the plant, the Operator shall submit to the Agency a report detailing the outcome of the commissioning programme. The report shall include the following: verification of the emissions to air and controlled waters and identification of any changes to the operating techniques and plant performance provided in the application. Where deviations from the application have occurred, their environmental impact shall be considered and if necessary, a timetable to implement appropriate remedial work shall be included.	6 months after commercial operations commence.
IC7	**Effluent from the condensate polishing plant** a) Operator shall review all relevant options for treating the effluent from the condensate polishing plant, resulting from resin cleaning activities. This should use an appropriate method such as the Agency's H1Guidance Part A 'Options Appraisal' and shall include: • a cost/benefit comparison with the current practice of tankering the effluent away • options for treatment at local treatment facilities • treatment technique options and a comparison of the expected concentrations of chemical species in the treated and untreated effluent e.g. ammonia • a comparison against the emissions benchmark values given in the relevant technical guidance or BREF. b) Should the assessment show that the effluent is of a potential suitable quality for discharge, an impact assessment using the Agency's H1 Guidance Part B 'Software Tool ' or other approved modelling technique shall be used. The Operator shall submit a report to the Environment Agency for approval, together with a timetable to implement all proposed actions.	6 months after commercial operations commence.
IC8	**Energy efficiency plan** The Operator shall submit an energy efficiency plan tot the Environment Agency, for approval. The plan shall comply with the requirements of the Combustion Technical Guidance and section 2.7.2 of Horizontal Guidance Note H2 entitled Energy Efficiency. The approved energy efficiency plan shall be implemented from the date of approval.	10 months after commercial operations commence.
IC9	**Background air monitoring** The Operator shall obtain representative and auditable background NO2 air monitoring data in the year 2010 and compare it to the estimated background data supplied in Section 2.2.2 of the Application's Appendix A3. If the measured 2010 background data is found to be less than that predicted in the Application, the Operator shall simply report these results to the Environment Agency. If the measured 2010 background data is found to be higher than that predicted in the Application, the Operator shall re-run the air model and supply the source data, the model assumptions, the model outputs and an H1 impact assessment of the results, to the Environment Agency. If this impact assessment indicates that improvements are required, an implementation timetable shall accompany the final submission.	12 months after commercial operations commence.

Table S1.4A Pre-operational measures	
Reference	**Pre-operational measures**
1	**Operating procedures, emergency response procedures and training** The Operator shall submit a report to the Environment Agency, confirming that the necessary operating and emergency response procedures are in place (with references to Section 1 of EPR 1.00 guidance note "Getting the Basics Right" available at the following location: http://publications.environment-agency.gov.uk/pdf/GEHO0209BPHU-e-e.pdf, Section 1.4 of Guidance Note H1 Environmental Risk Assessment Part 1, section 2.3 of the Technical Guidance Note for the Combustion Sector and sections 2.3.2 and 4.10 of the Application), are available for review and that staff have received the necessary training.
2	**CEMS** At least 2 weeks before first-fire operations, provide the Environment Agency with a copy of the CEMS service contract which will apply once commercial operations commence.

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**
Diesel for the two emergency diesel generators	Maximum of 0.1% sulphur by mass

Schedule 4 – Emissions and monitoring

For the purposes of this Schedule, the following interpretations shall apply to Table S4.1:

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

(b) The 95% confidence interval for nitrogen oxides of a single measured result shall be taken to be 20%.

(c) The 95% confidence interval for carbon monoxide of a single measured result shall be taken to be 10%.

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

(e) 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.

(f) Valid data is collected when the unit is operating during periods when limits in table S4.1 apply. A valid hour is obtained if at least 40 minutes of CEM data are available within a fixed one hour clock period.

(g) A validated daily average is calculated for all calendar days during which the total period of valid data is 6 hours or longer. A validated daily average is then the arithmetic average without weighting of the validated hourly averages within the reporting period.

(h) Monitoring shall take place during all phases of operation.

(i) The limits in Table S4.1 do not apply during start-up and shutdown periods, and only when operating at 70% relative GT load or greater.

(j) The gas samples extracted by the CEMs fitted to large combustion plant release points (A1 and A2) shall be dried prior to analysis.

(k) The readouts from continuous emission monitors shall be processed using software that reports monitoring compliance information to enable a direct comparison with the emission limit values in Table S4.1

(l) The Operator shall ensure that the CEMs comply with the requirements of BS EN 14181.

Table S4.1 Point source emissions to air- emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 and A2 on site plan in Schedule 2	Gas turbines GT10 and GT20	Oxides of nitrogen	100mg/m3	Maximum validated hourly average	Continuous	BS EN 14181 BS EN 15267-31
			50mg/m3	Daily average of validated hourly averages		BS EN 14792
			75mg/m3	95% of validated hourly averages within a calendar year		BS EN 15259
		Carbon monoxide	No limit set			Permanent sampling access not required
		Sulphur dioxide				
		Particulate matter				

Note

1. MCERTS certification for the appropriate determinands and ranges is evidence of compliance with BS EN 15267-3.

Table S4.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Flue gas exhaust A3, on site plan in Schedule 2	No parameters set	Auxiliary boiler	No limit set	-	-	Permanent sampling access not required
Diesel exhausts A4 and A5, on site plan in Schedule 2	No parameters set	Emergency diesel generators associated with GT10 and GT20 respectively	No limit set	-	-	Permanent sampling access not required

Table S4.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Hydrogen vents A6 and A7 on site plan in Schedule 2	No parameters set	The gas and steam turbine generator building	No limit set	-	-	Permanent sampling access not required
Lube oil vents A8 and A9 on site plan in Schedule 2	No parameters set	The gas and steam turbine generator building	No limit set	-	-	Permanent sampling access not required
Fuel gas vents A10 and A11 on site plan in Schedule 2	No parameters set	The gas and steam turbine generator building	No limit set	-	-	Permanent sampling access not required
Fuel gas vent A12 on site plan in Schedule 2	No parameters set	Gas compressor house	No limit set	-	-	Permanent sampling access not required
Fuel gas vents A13 and A14, on site plan in Schedule 2	No parameters set	Gas metering and filter facility associated with GT10 and GT20 respectively	No limit set	-	-	Permanent sampling access not required
Boiler blowdown tank vent A15 and A16, on site plan in Schedule 2	No parameters set	HRSG building	No limit set	-	-	Permanent sampling access not required
A17 Diesel firewater pump exhaust, on site plan in Schedule 2	No parameters set	Fire fighting pump house	No limit set	-	-	Permanent sampling access not required
A18 water heater boiler exhausts, on site plan in Schedule 2	No parameters set	Gas reception facilities	No limit set	-	-	Permanent sampling access not required

Table S4.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 - The neutralisation pit, on site plan in Schedule 2	pH	Process effluents from the water treatment plant and condensate polishing plant.	6-9	Continuous	Continuous	BS6068-2.50
W1 - The neutralisation pit, on site plan in Schedule 2	Total ammonia	Process effluents from the water treatment plant and condensate polishing plant.	No limit set	Spot	Monthly	BS EN ISO 11732:2005
W2 – rainwater collection pond, on site plan in Schedule 2	No limit set	Surface Water run-off from roofs and roads via an oil/water interceptor.	-	-	-	-
W3 – process water collection pond	No limit set	Water from the process building sumps, sampling and auxiliary boiler blowdown via an oil/water interceptor.	-	-	-	-

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
Extractive sampling for oxides of nitrogen (NO_x) and carbon monoxide (CO) (Compliance with BS EN 14181:2004)	A1 and A2	Every 12 months	On the anniversary of QAL2 test results
Emissions to air Parameters as required by condition 3.5.1.	A1 and A2	Every 6 months	01/01/10
Emissions to water Parameters as required by condition 3.5.1	W1	Every 12 months	01/01/10

Table S5.3 Performance parameters

Parameter	Frequency of assessment	Units
Water usage	Annually	m^3
Energy usage	Annually	MWh

Table S5.4 Reporting forms

Media/parameter	Reporting format [1]	Date of form
Emissions to Air	Form Air 1 LCPD discontinuous monitoring	10/03/10
	Form Air 2 LCPD continuous monitoring	10/03/10
	Form Air 3 LCPD continuous measurement systems invalidation log	10/03/10
	Form Air 4 Installation monthly fuel use and releases	10/03/10
	Form Air 5 LCPD monthly and cumulative releases	10/03/10
	Form Air 6 Operational hours	10/03/10
	Form Air 7 Installation monthly and cumulative releases	10/03/10
Emissions to Water	Form water 1 or other form as agreed in writing by the Agency	10/03/10
Water usage	Form water usage1 or other form as agreed in writing by the Agency	10/03/10
Energy usage	Form energy 1 or other form as agreed in writing by the Agency	10/03/10

Note 1 or other format as agreed in writing by the Agency

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.

(a) 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 EP Regulations.

Part A

Permit Number	**EPR/HP3737UE**
Name of operator	**Siemens plc**
Location of Facility	**Severn Power Station**
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 facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Siemens plc

Schedule 7 - Interpretation

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

"*annually*" means once every year.

"*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 5 to the EP 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; or
-for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

"*calendar monthly mean*" means the value across a calendar month of all validated hourly means.

"*Combustion Technical Guidance Note*" means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

"*DLN*" means dry, low NOx burners.

"*emissions to land*", includes emissions to groundwater.

"*EP Regulations*" means The Environmental Permitting (England and Wales) Regulations 2010 SI 675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"*fugitive emission*" means an emission to air, water or land from the activities from a localised or diffuse source which is not controlled by an emission or background concentration 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.

"*large combustion plant*" or "*LCP*" is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW_{th} 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 Environment Agency's Monitoring Certification Scheme.

"*mcr*" means maximum continuous rating.

"*Natural gas*" means naturally occurring methane with no more than 20% by volume of inert or other constituents.

"*ncv*" means net calorific value.

"*operational hours*" are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

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

"*SI*" means site inspector

"*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;

(b) in relation to gas turbines or compression ignition engines; the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15%, dry, for liquid and gaseous fuels; and.

(c) 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

Permit Number: **EPR/HP3737UE** **Operator:** **Siemens plc**

Installation: **Severn Power Station** **Form Number:** **Air - 1 / 10/03/10**

LCPD Reporting of Discontinuous Measurements for the year 20……..

Pollutant	Release Point	Time and date of sampling	Measured value (mg/m^3)	CEM result over sampling period (mg/m^3)	Unit load %MCR	Fuel used during sampling period
NOx	**A1**					Natural gas
NOx	**A2**					Natural gas

Please note: the measured value should be quoted at the appropriate reference conditions for the type of equipment being subject to emissions monitoring-see Schedule 7.

Operator's comments :

Signed on behalf of **Siemens plc** by: ……..……..

Date of return: ……..……..

Permit Number: **EPR/HP3737UE** **Operator:** **Siemens plc**

Installation: **Severn Power Station** **Form Number:** **Air - 2 / 10/03/10**

LCPD Reporting of Operational Summary of Continuous Measurements for the month……20……..

OPERATION ON NATURAL GAS							
Pollutant	**Release point**	**Maximum daily mean**	**95% percentile of hourly means**	**Maximum hourly mean**	**Maximum daily mean**	**95% percentile of hourly means**	**Maximum hourly mean**
		mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
		Limits			**Results**		
NOx	**A1**	50	75	100			
NOx	**A2**	50	75	100			

Operator's comments :

Signed on behalf of **Siemens plc** by: ……..……..

Date of return: ……..……..

Permit Number: **EPR/HP3737UE**

Operator: **Siemens plc**

Installation: **Severn Power Station**

Form Number: **Air - 3 / 10/03/10**

LCPD Reporting of Continuous Measurements Systems Invalidation for the year 20……..

Monitor positioned on release point: A……..

Date	Period of invalidation (hours)	Cumulative invalidated days in year	Comments

Note: compliance in LCPD is on the basis of validated hourly averages, measured by continuous monitors (except where discontinuous exemption applies). And confidence intervals are incorporated to convert the measured hourly value into a validated measurement for the purpose of compliance assessment. However, any day in which more than 3 hourly average values are invalid (due to malfunction or maintenance of the continuous measurement system) shall be invalidated for the purpose of compliance assessment. Then, if more than 10 days are invalid over a year the Agency must ensure that the operator takes adequate measures to improve the continuous measurement system reliability. This table is a reporting form for the operator's use to alert the Agency that action may be required.

Signed on behalf of **Siemens plc** by:……..

Date of return:……..

RELEASES TO AIR

INSTALLATION MONTHLY FUEL USE AND RELEASES [(a)]

Operator: Siemens plc **Form:** **Air - 4 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20…… Month:……**

Fuel and sulphur content	**Gas turbines**	**Auxiliary boilers**	**Emergency generators and fire pump**	**Site total**
Diesel (tonnes)				
Diesel sulphur content (%)				
Natural gas (tonnes)				
Natural gas sulphur content (%)				
Substance released	**Monthly tonnes released**			
Sulphur dioxide				
Oxides of nitrogen				
Particulate matter				
Carbon monoxide				

(a) Including start-up & shut-down

Operator's comments :

Signed on behalf of **Siemens plc** by: ……..……..

Date of return: ……..……..

RELEASES TO AIR

LCPD MONTHLY AND CUMULATIVE RELEASES [(a)]

Operator: Siemens plc **Form:** **Air – 5 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20……**

Reporting period	Gas Turbines							
	Electricity exported		NO_x released		CO released		Cumulative NO_x release rates year to date (tonnes/ GWh)	Cumulative CO release rates year to date (tonnes/ GWh) (tonnes)
	Actual (GWh)	Cumulative year to date (GWh)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)		
01 (Jan)								
02 (Feb)								
03 (Mar)								
04 (Apr)								
05 (May)								
06 (Jun)								
07 (Jul)								
08 (Aug)								
09 (Sep)								
10 (Oct)								
11 (Nov)								
12 (Dec)								

Reporting period	Auxiliary Boilers							
	SO_2 released		NO_x released		Dust released		Cumulative SO_2 release rates year to date (tonnes/ GWh)	Cumulative NO_x release rates year to date (tonnes/ GWh)
	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)		
01 (Jan)								
02 (Feb)								
03 (Mar)								
04 (Apr)								
05 (May)								
06 (Jun)								
07 (Jul)								
08 (Aug)								
09 (Sep)								
10 (Oct)								
11 (Nov)								
12 (Dec)								

NOTES:
(a) Excluding start-up and shut-down

Operator's comments :

Signed on behalf of **Siemens plc** by: ……..……..

Date of return

RELEASES TO AIR

OPERATIONAL HOURS [(a)]

Operator: Siemens plc **Form:** **Air – 6 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20……**

Reporting period	Auxiliary Boiler					
	A3					
	Actual (hours)	Cumulative year to date (hours)	Actual (hours)	Cumulative year to date (hours)	Actual (hours)	Cumulative year to date (hours)
01 (Jan)						
02 (Feb)						
03 (Mar)						
04 (Apr)						
05 (May)						
06 (Jun)						
07 (Jul)						
08 (Aug)						
09 (Sep)						
10 (Oct)						
11 (Nov)						
12 (Dec)						

Reporting period	Diesel Generators					
	A4		A5			
	Actual (hours)	Cumulative year to date (hours)	Actual (hours)	Cumulative year to date (hours)	Actual (hours)	Cumulative year to date (hours)
01 (Jan)						
02 (Feb)						
03 (Mar)						
04 (Apr)						
05 (May)						
06 (Jun)						
07 (Jul)						
08 (Aug)						
09 (Sep)						
10 (Oct)						
11 (Nov)						
12 (Dec)						

NOTES:
(a) Excluding start-up and shut-down

Operator's comments :

Signed on behalf of **Siemens plc** by: ……..……..

Date of return: ……..……..

RELEASES TO AIR

MONTHLY AND CUMULATIVE RELEASES [(a)]

Operator: Siemens plc **Form:** **Air – 7 / Page 01 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20……**

Reporting period	Gas Turbines							
	Electricity exported		NO_x released		CO released		Cumulative NO_x release rates year to date (tonnes/ GWh)	Cumulative CO release rates year to date (tonnes/ GWh)
	Actual (GWh)	Cumulative year to date (GWh)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)		
01 (Jan)								
02 (Feb)								
03 (Mar)								
04 (Apr)								
05 (May)								
06 (Jun)								
07 (Jul)								
08 (Aug)								
09 (Sep)								
10 (Oct)								
11 (Nov)								
12 (Dec)								

RELEASES TO AIR

MONTHLY AND CUMULATIVE RELEASES [(a)]

Operator: Siemens plc **Form:** **Air – 7 / Page 02 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20……**

Reporting period	Auxiliary Boiler							
	SO_2 released		NO_x released		Dust released		CO released	
	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)
01 (Jan)								
02 (Feb)								
03 (Mar)								
04 (Apr)								
05 (May)								
06 (Jun)								
07 (Jul)								
08 (Aug)								
09 (Sep)								
10 (Oct)								
11 (Nov)								
12 (Dec)								

RELEASES TO AIR

MONTHLY AND CUMULATIVE RELEASES [(a)]

Operator: Siemens plc **Form:** **Air – 7 / Page 03 / 10/03/10**

Location: Severn Power Station

Permit Number: EPR/HP3737UE **Year: 20……**

Reporting period	Diesel Generators							
	SO_2 released		NO_x released		Dust released		CO released	
	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)	Actual (tonnes)	Cumulative year to date (tonnes)
01 (Jan)								
02 (Feb)								
03 (Mar)								
04 (Apr)								
05 (May)								
06 (Jun)								
07 (Jul)								
08 (Aug)								
09 (Sep)								
10 (Oct)								
11 (Nov)								
12 (Dec)								

NOTES:
(a) Including start-up and shut-down

Operator's comments :

Signed on behalf of **Siemens plc**: ……

Date of return: ……

Permit Number: **EPR/HP3737UE** **Operator:** **Siemens plc**

Facility: **Severn Power Station** **Form Number:** **Water1 / 10/03/10**

Reporting of emissions to water (other than to sewer) and land for the period from DD/MM/YYYY **to** DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
W1	Total amonia	No limit set	Monthly spot		BS EN ISO 11732:2005		
W1	pH	6-9	Continuous		BS6068-2.50		

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …… Date……..

(Authorised to sign as representative of Operator)

Permit Number: **EPR/HP3737UE** **Operator:** **Siemens plc**

Facility: **Severn Power Station** **Form Number:** **WaterUsage1 / 10/03/10**

Reporting of Water Usage for the year ……..

Water Source	Usage (m^3/year	Specific Usage (m^3/unit output)
Mains water		
TOTAL WATER USAGE		

Operator's comments :

Signed …… **Date……..**

(authorised to sign as representative of Operator)

Permit Number: **EPR/HP3737UE** **Operator:** **Siemens plc**

Facility: **Severn Power Station** **Form Number:** **Energy1 / 10/03/10**

Reporting of Energy Usage for the year ……..

Energy Source	Energy Usage Quantity	Primary Energy (MWh)	Specific Usage (MWh/unit output)
Electricity *	**MWh**		
Natural Gas	**Tonnes**		
Diesel	**Tonnes**		
TOTAL	**-**		

*** Conversion factor for delivered electricity to primary energy = 2.6**

Operator's comments :

Signed …… **Date……..**

(Authorised to sign as representative of Operator)