

Permitting Decisions- Bespoke Permit

We have decided to grant the permit for Croydon Data Centre (LGW13) operated by CL International Management (UK) Limited.

The permit number is EPR/NP3735JX/A001.

The application is for 31 emergency standby diesel generators providing electricity to the associated data centre in the event of a failure of supply from the National Grid. There are 28 generators with a thermal input of 3.5MW and 3 generators with a thermal input of 3.7MW. The aggregated thermal input of the generators is 109.1MWth.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It:

- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- highlights key issues in the determination
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit.

Key issues of the decision

The site is an existing data centre that is being brought into regulation, which consists of a Section 1.1 Part A(1)(a) activity under the Environmental Permitting (England and Wales) Regulations 2016 for the burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The combustion plant only operates under limited routine maintenance or in an emergency scenario. The emergency combustion activity comprises 31 diesel fuelled standby generators. The thermal input of the generators is as follows: 28 are 3.5 MWth and 3 are 3.7 MWth. The aggregated total combustion capacity on site is 109.1 MWth. All plant was installed 2012. This is before December 2018, they are therefore classed as 'existing plant' under the Medium Combustion Plant Directive (MCPD).

Electrical power is provided to the data centre from the National Grid. However, in the event of a failure in the electrical supply, the operator will utilise the generators to maintain the electrical supply. The generators will be used solely for the purpose of generating power for the facility. No electricity will be exported from the installation. The data centre consists of 5 data halls (DH1 – DH5). There are a total of 7 electricity feeds into the data centre, which are organised as follows: 2 feeds to DH1, 2 feeds to DH2 and DH3, 2 feeds to DH4 and DH5 and one feed to the landlord area (office, meeting room, reception and kitchen area). Each of the 7 electricity feeds can be run on either an A or B power input. The generators are organised and controlled to mimic this power input set up. If one of the 2 feeds fail all of the generators would start with generators turned off manually to meet the data centre load and not exceed it. In the event that there is the loss of power across the whole site all generators would start. In a prolonged outage around half of the generators would be turned off after a period of 2 hours to match the load requirements of the data centre. Such a loss of power would require an outage at the 132kVa substation level. All the generators are subject to a maintenance testing schedule.

The generators run on diesel fuel which is stored in 17 above ground bulk storage tanks. The diesel from the bulk storage tanks is piped to the day tanks that are located within each generator container. There are 3 x 14,000 litre tanks, 6 x 25,500 litre tanks, and 8 x 22,000 litre tanks each tank has an integral bund of 110% capacity.

The site is covered in concrete hardstanding. The surface drainage system directs run-off into an oil interceptor prior to discharge from site to the municipal combined sewer. The oil interceptor has a capacity of 5,000 litres, which includes a manual shut off vale to prevent any surface water discharge off site should this be necessary.

The testing schedule is as follows for each of the 31 generators:

Monthly Testing – each generator runs for 5 minutes i.e., within each data hall, each generator is tested simultaneously, then the generators within the next data hall are tested, and so on.

Quarterly Testing – each generator runs for 15 minutes with sequential data hall testing.

Annual Load Bank Test – each generator runs for 1 hour with sequential data hall testing.

Air Quality

The primary pollutant of concern to air quality is nitrogen dioxide (NO₂) resulting from the combustion process on site. A total of three air quality assessments were undertaken and submitted during the determination.

1. Digital Reality – Croydon – Air Dispersion Modelling Report, December 2020, modelling undertaken by Bureau Veritas, Ref – AIR10134835. (Submitted with the application)
2. Digital Reality – Croydon – Air Dispersion Modelling Report, September 2021, modelling undertaken by Bureau Veritas, Ref – AIR10134835. (Submitted in response to Schedule 5 #2 dated 20/08/2021)
3. Schedule 5 Response Report – Ascendas Reit Croydon - modelling undertaken by Bureau Veritas, Ref – AIR10134835. (Submitted in response to Schedule 5 #3 dated 30/11/2021)

The second assessment was required as the applicant had not included an emergency scenario and exceedances (short term NO₂) were predicted during maintenance testing (annual load bank test) requiring implementation of emissions reduction measures. The emergency scenario was included in this assessment and the duration of the annual load bank test was reduced (from 4 hours to 1 hour) resulting in a decrease in emissions, the results and conclusions are presented below.

The third assessment was required as the applicant had not assessed emissions against the Acute Exposure Guidance Levels (AEGs) and Nitrogen Oxide (NO). An assessment against these criteria was undertaken, the results and conclusions are presented below.

The modelling assessed the potential impact of emissions of NO₂, NO, particulates (PM₁₀ and PM_{2.5}), sulphur dioxide (SO₂) and carbon monoxide (CO) from the generators on local air quality.

We do not consider SO₂ emissions to be a risk from the operation of the proposed installation as we have included a condition in the permit restricting the fuel to ultra-low sulphur diesel, resulting in negligible emissions of sulphur.

The applicant has confirmed that the generators will be operating at 100% load during an emergency scenario in the event of the loss of power from the National Grid. The emission concentrations used in the air quality modelling were based upon the manufactures data sheets and were 3280mg/m³ for 3 Perkins 4012TAG2A engines and 5100 mg/m³ for the 28 Perkins 401246TWG3A engines (both at 273 K, 101 kPa, dry and 5% O₂). The emissions are not in line with the TA-Luft 2g or Tier 2 USEPA emissions standards. This is discussed in detail in the BAT section of this document.

Emissions data sheets for the engines have been provided by the applicant, which we consider as being representative of the emissions from the engines. The applicant has confirmed that the engine emissions presented are based on 100% engine loading, which reflects how the engines are used in an emergency scenario. Therefore, the emissions concentrations used in the modelling are appropriate.

We audited the air dispersion modelling and report submitted with the permit application. Both the maintenance testing and emergency scenarios within the modelling were assessed. We agreed with the applicant's conclusions that predicted levels for the three testing regimes and emergency operations were unlikely to cause an exceedance of the Environmental Standard (ES) for human receptors for NO₂, NO, PM₁₀, PM_{2.5}, SO₂ and CO and ecological receptors for NO_x and SO₂.

Four modelling scenarios were run to represent the operations at the installation. Scenarios 1, 2 and 3 assess emissions from generator run times during routine testing and maintenance operations. Scenario 3 represents an emergency power outage where there is loss of power from the National Grid or from an internal power supply failure.

- Scenario 1: Monthly Testing – each generator runs for 5 minutes i.e., within each data hall, each generator is tested simultaneously, then the generators within the next data hall are tested, and so on.
- Scenario 2: Quarterly Testing – each generator runs for 15 minutes with sequential data hall testing.
- Scenario 3: Annual Load Bank Test – each generator runs for 1 hour with sequential data hall testing.
- Scenario 4: Emergency Operation – all generators running for 2 hours followed by half of the generators in each data hall running for 5 days. The applicant explains that only 16 of the generators are needed to meet the site load during emergency operations, therefore, 15 generators would be switched off after the first two hours of a prolonged Scenario 4.

Predicted emissions of NO₂, NO, PM₁₀, PM_{2.5}, SO₂ and CO generated from each scenario were assessed against the Environmental Standards (ES) as presented below. The results are presented in the modelling reports. We also did our own check modelling assessing against the same criteria.

For short term criteria emissions are required to be less than 10% of the ES or less than 100% of the ES following consideration of background concentrations. If there are still exceedances following assessment against short term criteria then statistical analysis should be undertaken to calculate the probability of an exceedance.

Where there is a probability of 1% or less an exceedance is considered highly unlikely, less than 5% an exceedance is considered unlikely and more than or equal to 5% there is the potential for an exceedance determined on a case by case basis.

For long term criteria emissions are required to be less than 1% of the ES or less than 100% of ES following consideration of background concentrations.

For AEGL-1 emissions were assessed directly against the acute exposure level of 940 ug/m³ as to whether there would be an exceedance of this threshold. In the event an exceedance was predicted statistical analysis was undertaken considering the probabilities against the criteria described above.

Table 1. – Environmental Standards for pollutants assessed.		
Pollutant	Environmental Standard	Averaging time
Human Health		
Nitrogen dioxide	200 ug/m ³	1-hour mean
Nitrogen dioxide	40 ug/m ³	Annual mean
Particulates (PM10)	50 ug/m ³	Daily mean
Particulates (PM10)	40 ug/m ³	Annual mean
Particulates (PM2.5)	25 ug/m ³	Annual mean
Sulphur dioxide	266 ug/m ³	15 minute mean
Sulphur dioxide	350 ug/m ³	1 hour mean
Sulphur dioxide	125 ug/m ³	24 hour mean
Carbon monoxide	30,000 ug/m ³	1 hour mean
Nitrogen monoxide	4 400 ug/m ³	1 hour mean
Nitrogen monoxide	30 ug/m ³	Annual mean
Acute Exposure Guidance Limit - 1 (AEGL) for Nitrogen dioxide	940 ug/m ³	10 minute and 1 hour
Ecological Receptors		
Oxides of nitrogen (expressed as nitrogen dioxide)	30 ug/m ³	Annual mean
Oxides of nitrogen (expressed as nitrogen dioxide)	75 ug/m ³	Daily mean

Sulphur dioxide	10 ug/m ³	Annual mean
Nutrient Nitrogen	Depends on location – see modelling report	Annual mean
Acidity deposition	Depends on location – see modelling report	Annual mean

Maintenance testing

Human Receptors:

Short Term impacts applicants' assessment

Scenarios 1 and 2 – There were no predicted exceedances of any Environmental Standard (ES) for any pollutant assessed except for NO₂ 1-hour mean. The short-term emissions screened out alone where the process contribution (PC) was less than 10% of the significance threshold and in the case of AEGL-1 emissions were below 940 ug/m³.

For NO₂, the report highlights that considering Scenario 1 and 2 separately, it is not possible that generator operation alone could cause an exceedance of the 99.79th percentile 1-hour mean, as the operational events are below the 18 permissible hours of exceedance that are allowed per year.

Scenario 3- There were no predicted exceedances of the ES for CO 8-hour mean, SO₂ 15-minute mean, SO₂ 1-hour mean and AEGL-1. The short-term emissions screened out following the consideration of background concentrations, the Predicted Environmental Concentrations (PEC) were less than 100% of the significance threshold for SO₂ and CO. The short-term emissions screened out alone where the process contribution (PC) was less than 10% of the significance threshold for NO. In the case of AEGL-1 emissions were below 940 ug/m³.

For NO₂ 1-hour mean, PM₁₀ 24-hour mean, SO₂ 24-hour mean and NO 1-hour mean exceedances were predicted. The report highlights that it is not possible that Scenario 3 alone could cause an exceedance of the NO₂ 99.79th percentile 1-hour mean, as the operational events are below the 18 permissible hours of exceedance that are allowed each year. No discussion is included in the report for exceedances of PM₁₀ 24 hour mean and SO₂ 24-hour mean for this Scenario alone. We considered this as part of our audit. For NO 1- hour mean the applicant undertook statistical analysis and calculated the probability of an exceedance was 0.57% and can thus be considered highly unlikely.

Environment Agency Audit

Our audit of the modelling confirms that short term process contributions are unlikely to cause an exceedance at any of the receptors for any pollutant.

We agree with the applicants' conclusions that the number of hours of testing mean that it is not possible to exceed the 18 permissible hours with regards to the number of permissible exceedances of the NO₂ 1-hour mean. Considering Scenarios 1,2 and 3 separately.

We undertook our own statistical analysis to calculate the probability of an exceedance for all pollutants which have short term assessment criteria. We concluded that there is unlikely to be an exceedance of the short term ES for NO₂, NO, CO, SO₂, PM₁₀ and AEGL-1 for Scenarios 1, 2 and 3 separately.

Long Term impacts

Long term Process Contributions (PC) for PM₁₀ and PM_{2.5} are less than the 1% significance threshold of the ES at receptor locations for both pollutants and all scenarios. The long term NO₂ PC is predicted to be 8.8% of the ES. The applicant has factored the annual PCs to reflect the annual operations. NO was not included in the original modelling report, we requested in Schedule 5 #3 that predictions were provided for short-term NO only, as our audit showed long-term NO screened out.

As part of our audit for LT standards we have calculated PCs assuming 25 hours of operation over a year with only 8 generators operating simultaneously, which is an estimate of the cumulative impact of all 3 testing scenarios. All annual mean results were predicted to be below the relevant ES.

Ecological Receptors:

There are two Special Conservation Areas (SACs) within 10 km of the installation (Richmond Park SAC and Wimbledon Common SAC), four Local Nature Reserves (LNR) and fifteen Local Wildlife Sites (LWS). The applicant did not assess all of the LWS and LNR, we included all the sites as part of our audit.

Long-term and short-term impacts were considered. The modelling considered airborne NO_x. In addition to nitrogen deposition and acidification considering inputs from both Nitrogen and Sulphur Dioxide.

The long-term emissions screen out alone as the process contribution (PC) was less than 1% of the significance threshold for acid deposition and nutrient nitrogen, and for Oxides of Nitrogen (NO_x) and SO₂ the predicted environmental concentration (PEC) was less than 100%. Therefore, all pollutants screened out for long term criteria and no further assessment is necessary.

The only short-term assessment required for ecological receptors is the 24-hour mean for Oxides of Nitrogen (NO_x). There were predicted to be exceedances at four Local Wildlife Sites (LWS) all other ecological sites screen out. The applicant

concluded that exceedances are unlikely due to the low number of operational hours.

Our audit agreed with the applicant's assessment and we agree that exceedances are unlikely for the NO_x 24 hour mean due to the low number of operational hours. Also, exceedances were only predicted should operations coincide with worst-case operational hours. No further assessment is necessary.

Emergency scenario

The emergency scenario (Scenario 4) that has been modelled is based upon all generators operating simultaneously for 2 hours followed by half the generators operating for 120 hours. Shutting down half the generators after 2 hours reflects what would happen in reality should there be an electricity outage. There is no basis set out in the modelling report as to why 122 hours has been chosen. We would expect an emergency scenario to be modelled for 72 hours as a worst-case scenario for this type of operation. As such 122 hours is likely to be an over estimation of emissions for the emergency scenario.

Prolonged operation of the installation is not expected. Short term operation is more realistic for the reasons described below.

We requested details of all instances when the generators have been used in an emergency scenario as a result of grid failure. The operator confirmed that the generators have not operated other than for maintenance purposes since the site became operational in 2011.

This is an existing site and all generators installed do not meet TA-Luft 2g or Tier 2 USEPA emissions standards. The stacks are also below the height of the surrounding buildings. The diesel generators installed are currently not in line with BAT, an improvement condition has been included requiring the operator to explore potential options to reduce NO_x emissions to meet BAT standards.

An emergency outage is an event that will be for a number of hours. Therefore, only short-term assessment criteria need to be considered.

Human Receptors:

For Scenario 4, the applicant predicts exceedances of the NO₂ 1-hour mean.

For NO₂ 1-hour mean the operator undertook statistical analysis to predict the probability of an exceedance occurring over the 122 hours of operation. The probability of exceeding the ES more than the 18 allowable exceedances is 100% and the probability of more than 64 exceedances is 0.001% (We do not agree with this approach and have undertaken our own assessment of risk based on the number of operational hours required for the risk of an exceedance to be 5% and 1%).

As part of the applicants third modelling assessment the operator assessed the emissions against short term NO and AEGL-1. The applicant predicted exceedances of short term NO and AEGL-1 at eight receptors during worst case meteorological conditions. The applicant undertook statistical analysis to predict the probability of an exceedance occurring. They predicted a likelihood of 20.6% for AEGL-1 and 15.4% for short term NO, indicating the potential for an exceedance.

Our audit agrees with the operators conclusions that exceedances of short term NO₂, 1-hour mean NO and AEGL-1 are likely should Scenario 4 coincide with the worst-case meteorological conditions. Although we agree with the operators conclusions we are not able to agree with the numerical values.

However, overall we would still consider exceedances as being unlikely due to the emergency scenario being a highly unlikely event to occur. As explained previously the generators have never been used in an emergency situation since they were commissioned. In addition, based on our assessment, exceedances against the aforementioned ES are only likely if operations last longer than 1 hour. If the generators were ever to operate, short term operation is more likely. Therefore, on this basis the scenario can be considered acceptable and no further assessment is necessary.

Exceedances are also predicted of SO₂ 15-minute mean and PM₁₀ 24-hour mean, based on the number of exceedances predicted it would not be possible to exceed the 35 allowable 15-minute/daily exceedances that are allowed for both pollutants respectively over 122 hours of operation.

Ecological Receptors:

The operator predicts exceedances of the daily mean NO_x critical level of 75 µg/m³ at all ecological sites including Wimbledon Common SAC and Richmond Park SAC. This would require an emergency scenario coinciding with the worst-case meteorology that was used within the modelling. This scenario is unlikely.

As part of our audit, we were unable to rule out exceedances of the daily NO_x during scenarios 3 and 4 should these coincide with worst-case meteorological conditions. However, we agree with the applicant that exceedances are unlikely based on the low number of operational hours and due to there being no historic operation of the generators in an emergency since the generators were first commissioned.

Permit conditions

The permit will include a maximum 500 hours per annum 'emergency/standby operational limit' for any or all the plant producing on-site power under the limits of the combustion activity. This operational limit applies to the installation as a

whole. As operations are restricted to 500 hours, emission limit values (ELVs) to air are not required within the permit.

The Environment Agency expects the number of and duration of planned testing and generator operations to be minimised as much as possible (subject to client requirements). The BAT expectation is that individual generator testing is below 50 hours/annum which is drawn from the MCPD specified generator guidance. In this instance the operator is maintaining and testing each generator for a total of 3 hours a year (based on email attachment provided 12/11/2021). This is in line with BAT and below the level at which ELVs would be needed.

The permit has a limit on the activity to exclude voluntary 'elective power operation' such as demand side response (i.e. on-site use) or grid short term operating reserve (STOR) (i.e. off-site export of electricity) and Frequency Control by Demand Management (FCDM) for grid support. This is primarily to differentiate data centres from 'diesel arrays' that voluntarily operate within the balancing market and importantly provide a clear way to demonstrate minimisation of emissions to air as 'emergency plant'.

Operational and management procedures should reflect the outcomes of the air quality modelling by minimising the duration of testing, phasing generators into subgroups, avoiding whole site tests and planning off-grid maintenance days and most importantly times/days to avoid adding to "at risk" high ambient pollutant background levels.

As explained previously in the Air Quality section of this document, under the heading Emergency Scenario, the risk of the generators needing to operate for a prolonged period of time is low.

Reporting of standby engine maintenance run hours is required annually and any electrical outages (planned or grid failures regardless of duration) require both annual reporting and immediate notification to the Environment Agency.

Noise

The site will only run the engines regularly as part of the testing regime described earlier, with each engine run for 3 hours per year. This occurs during daytime hours both during weekdays for monthly and quarterly testing and the weekends for the Annual Load Bank test, and is not classed as part of normal operations.

Prolonged operation will only occur in an emergency situation where the National Grid supply is lost. The operator has provided details of historical outages at this installation. There have been no outages as a result of the loss of power from the National Grid since the site began operations as a data centre in 2011.

Therefore, the potential for prolonged noise is also considered to be very low.

An assessment of the potential impact of noise has been undertaken in the Environmental Risk Assessment (ERA). The document outlines that in addition to

the limited hours of operation which will control potential for noise, the generators are located in acoustic housing and the site has a 4.5m acoustic wall along the northern and western boundary of the site. The ERA concludes that the risk of noise is low. We agree with this conclusion and that the proposed measures are sufficient to control any noise arising from the installation.

BAT

As outlined in the Environment Agency's 'Data Centre FAQ' document, we accept that oil fired diesel generators are presently a commonly used technology for standby generators. However, we requested a BAT assessment detailing the choice of engine, the particular configuration and plant sizing to meet the standby arrangement (e.g. 2n).

The default generator specification as a minimum for new plant to minimise the impacts of emissions to air of NO_x is 2g TA-Luft (or equivalent standard) or an equivalent NO_x emission concentration of 2000mg/m³. None of the generators meet either of these standards due to them being fitted and installed outside of a regulatory regime between 2007 – 2009. In addition, the document Data Centre FAQ Headline Approach which sets out the above BAT standards had not been written at the time the generators were being installed.

The operator will need to look at potential options to reduce NO_x emissions to move towards meeting these standards. An Improvement Condition has been included in the permit to move towards achieving this.

The data centre comprises a series of data halls with a number of generators dedicated to each data hall. The number and size of the generators matches the demand requirements of each suite. The site operates to an 2n standby arrangement, where n is the load requirement of the data centre. In other words there are twice the number of generators that the site needs.

The generators were already installed when the operator purchased the site. Choices regarding the size and configuration of the plant have already been made. It is not possible to provide a justification for the decisions that were made as these were not the operators own. However, the use of a larger number of smaller generators is typical for datacentres like this and allows for flexibility with regards to maintenance and assigning power loads to meet requirements for a number of separate data halls. Therefore, it is considered that a greater number of small scale generators is BAT.

In order to minimise the need for emergency operation, there are a total of 7 electricity feeds into the data centre, which are organised as follows: 2 feeds to DH1, 2 feeds to DH2 and DH3, 2 feeds to DH4 and DH5 and one feed to the landlord area (office, meeting room, reception and kitchen area). Each of the 7 electricity feeds can be run on either an A or B power input. The generators are organised and controlled to mimic this power input set up. If one of the 2 feeds

fail all of the generators would start with generators turned off manually to meet the data centre load and not exceed it. In the event that there is the loss of power across the whole site all generators would start. In a prolonged outage around half of the generators would be turned off after a period of 2 hours to match the load requirements of the data centre. Such a loss of power would require an outage at the 132kVa substation level.

Protection of Groundwater

There are no intentional emissions to land or groundwater from the data centre. The generators are located in containers over hard standing. All operational areas, roads and external areas are on hard standing. Raw materials used on the installation are Diesel fuel. Diesel fuel is stored in bunded bulk storage tanks and also within the generator day tanks which are housed in the containers. Therefore, the risk of any source of potential contamination discharging to land is minimised. No wastes are stored on site. Waste oil is removed off-site for disposal following any maintenance.

The diesel belly tanks are designed to comply with the Oil Storage Regulations 2001. Suitable measures are in place with regards to fuel containment which include:

- The bulk diesel storage tanks are fully-bunded with an integral bund providing 110% of the volume of the tank.
- The oil interceptor has a capacity of 5,000 litres providing some tertiary containment for the site. Surrounding gullies and concrete areas provides further limited tertiary storage.
- All surface water goes via the oil interceptor before being discharged. The oil interceptor is fitted with a shut off valve which is closed in the event of a spillage to isolate any diesel which has escaped from the tanks/pipework on the installation.
- The only fuel pipework on site is that which connects the belly tanks to the generator day tanks. No other distribution pipe work is required.
- The bulk diesel storage tanks are fitted with a leak detection system which is monitored continuously by the Building Maintenance System (BMS) and an alarm would sound in the event of a leak.
- Fuel filling points remain locked when not in use and have drip trays to capture any leaks.
- High and low level alarms are fitted to the bulk diesel storage tanks to prevent overflowing of the tanks.
- Spill Kits are available in the plant areas. Staff have been fully trained in spill response procedures and the use of personal protective equipment (PPE).
- The site engineering team undertake a twice weekly visual inspection of the bulk diesel storage tanks.
- A third-party contractor undertakes a monthly inspection of the generators, their day tanks and pipework in the generator housing. A monthly inspection document is completed and kept on site.

The operator has emergency response procedures in place in the event of a release of oil or diesel, processes for the planning for such eventualities and checklists to audit the response in case such an event occurs. Rainwater is kept separate from any areas in which there may be any potential contaminants and is allowed to run off to the surface water drainage system.

Details of the existing condition of the Site can be found in the Site Condition Report supplied with the application, which we have reviewed and consider satisfactory.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority - Environmental Health – Sutton Council
- National Grid
- Director of Public Health
- Public Health England (now the UK Health Security Agency).

Operator

We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The site

The operator has provided a plan which we consider to be satisfactory.

These show the extent of the site of the facility.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England. A completed Habitats Risk Assessment Level 1 was sent to Natural England for Information Only.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance, or by imposing a limit to the operational hours through the permit conditions, we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included an improvement programme to ensure that:

- IC1 - Short term nitrogen dioxide concentrations are minimised during emergency operations. We have requested that an Air Quality Management Plan is produced. This plan which will detail how the generators will be used during emergency operation and is to be produced jointly with the Local Authority.
- IC2 – We have set this improvement condition as the generator emissions are not in accordance with BAT emissions standards. The operator should consider potential options to reduce emissions/improve dispersion in order to improve the environmental performance of the engines. In addition, our assessment has identified that the generators would only need to operator for an hour before there would be exceedances of the NO₂ 1 hour-mean. A reduction in emissions/improvement in dispersion should be implemented to minimise the impacts in the event of prolonged generator operation, even though this is an unlikely event.
- IC3 – This is an existing site that has been operating since 2011 and is only now being brought into regulation. As a result we were not consulted with regards to the containment systems installation and the containment systems have been in place for around 11 years. Therefore, the containment infrastructure needs to be reviewed so that we can establish a baseline as to its condition and whether it complies with the expected standards. Any deficiencies will be addressed based on an agreed improvement programme to agreed timescales.

Emission Limits

We have decided that emission limits are not required in the permit. This is due to the plant being limited to less than 500 hours of emergency operation and less than 50 hours for maintenance. There are no emission limits specified for such plant within the Medium Combustion Plant Directive (MCPD).

Monitoring

We have decided that monitoring is not required in the permit. The generators are classed as existing plant. We only set monitoring requirements for new Medium Combustion Plant (MCP). This is existing MCP, therefore, no monitoring is required.

Reporting

We have specified reporting in the permit to ensure that the installation is being operated in line with that specified in the operating techniques and to ensure that we are notified immediately in the instance that the site ever operates in emergency scenario mode.

Management System

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Previous performance

We have assessed operator competence. There is no known reason to consider the applicant will not comply with the permit conditions.

Financial competence

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

The Director of Public Health was also consulted however no response was received.

Responses from organisations listed in the consultation section:

Response received from: Local Authority - Environmental Health - Sutton Council

Brief summary of issues raised: The response confirmed that they are not currently investigating any noise or pollution complaints in relation to the site and that no enforcement action is pending.

Summary of actions taken: no action required.

Response received from: National Grid

Brief summary of issues raised: A drawing was provided showing the locations of National grid overhead lines near to the installation. They also provided guidance

for when works are conducted near such assets. A National Grid Engineer has reviewed the proposal and confirmed that there is no objection to the application.

Summary of actions taken: no action required.

Response received from: Public Health England (now the UK Health Security Agency).

Brief summary of issues raised: The operator identified the main emissions of concern from the generators as nitrogen dioxide, sulphur dioxide and particulates. They identify that there are 5 separate power supplies and therefore, the risk of an outage across the whole site is unlikely. They note that an air quality modelling assessment has been submitted and that it does not consider an emergency outage scenario. They note that there are exceedances of the NO₂ 1 hour-mean, PM₁₀ 24 hour-mean and SO₂ 24 hour-mean. They note that this has the potential for health impacts. There is the potential for NO₂ to exceed high and very high pollution bands of DEFRA air quality index. They identify that the installation is within an Air Quality Management Area and that the considerations of local authority should be taken into account. They recommend additional mitigation measures are needed to prevent exceedances of air quality thresholds, that boundary monitoring is included and that testing is only undertaken in favourable weather conditions. The potential for noise is discussed and that appropriate measures should be in place. There is no accident management plan included with the application.

Summary of actions taken: All of the main emissions as identified by PHE have been assessed in the air quality assessment. We agree that the chance of all generators operating is unlikely. A revised air quality modelling report was submitted on 19/09/22 which included an emergency scenario, we have audited this report and agree with its conclusions. Where the modelling reports show any exceedances the applicant/the EA has undertaken statistical analysis to determine the probability of an exceedance occurring. For all pollutants and assessment criteria the risk is low. When making this conclusion we also took into account that an exceedance would need to coincide with the worst-case meteorological data and that there has been no historic operation of the generators during an electrical outage since the site became operational in 2011. It is also on this basis that we do not consider the need for any mitigation measures to be installed or that any other stipulations are put in place e.g. regarding weather conditions. However, we have included improvement conditions in the permit requesting that the operator should consider potential options to reduce emissions/ improve dispersion in order to improve their environmental performance. This is primarily to bring the installation in line with BAT emission standards.

We consulted with the local authority as part of the consultation process. They did not raise any concerns regarding the Air Quality Management Area. We have

also included an Improvement Condition which requires the operator to work with the local authority to produce an Air Quality Management Plan in order to look to reduce emissions during emergency operations in the event of grid failure.

Due to the limited operation of the generators the risk of noise is considered low. The generators are housed in acoustic enclosures to minimise noise. These measures are considered to be sufficient.

An accident Management Plan is incorporated into the Environment Management System and will be available for inspection by the EA area team as part of the compliance process following the issue of this permit.