Permitting Decisions- Bespoke Permit

We have decided to grant the permit for NTT Dagenham Data Centre operated by NTT Global Data Centers UK Ltd.

The permit number is EPR/CP3902LV/A001.

The application is for 42 emergency standby diesel generators providing electricity to the associated data centre in the event of a failure of supply from the National Grid. Each generator has a thermal input of 4.1MW.

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 a new data centre 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 during limited routine maintenance or in an emergency scenario. The emergency combustion activity comprises 42 diesel fuelled standby generators. Each generator is approximately 4.1 MWth and has a stack 21m in height.

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 standby generators are organised into customer suites. The data centre is designed to have 10 customer suites. There will be 6 suites each with 5 generators and 4 suites with each pair of suites sharing 5 generators, with one of the generators in each suite being a duty standby generator. There are also 2 house generators which provide back-up power for non-IT related infrastructure. In the event of a reduction in electrical power from the National Grid the Building Management System software would automatically start up all generators that have detected a loss in mains power. There is a dual electricity feed to the National Grid meaning that half of the generators would not need to start if one of the feeds was lost. In the case of a long term failure to one electricity feed, all generators can be moved to the remaining feed. All the generators are subject to a maintenance testing schedule.

The generators run on diesel fuel. All generators are housed in separate containers with each having a 24,000 litre belly tank located underneath. Each tank has an integral bund of 110% capacity. There are no bulk oil storage tanks located on the site.

The site is covered in hardstanding. There are no combined drains and as mentioned oil tanks are bunded to prevent oil entering surface water drains. Surface water passes through an oil interceptor, which has a capacity of 36,000 litres, before being discharge to a surface water sewer. No process waters are generated for the site and thus there is no discharge to foul sewer from the generators.

The testing schedule is as follows for each of the 42 generators:

1. Monthly maintenance – 1 hour per month each engine is run at 75% load. Testing is limited to one suite per day.
2. Black Building Test – 1 hour maximum for each engine every year. All generators are operated at the same time. The generators are synchronised and run to take the load from the data centre.
3. Annual UPS wrap around maintenance – 6 hour test undertaken once per year for each engine. The generators are off-load so emissions are low. One engine is tested per day.
4. Annual load tests – 4 hours for each engine every year. A full in-service test is undertaken on each engine. The generators undergo a full load test where generators are started and run to take the load from the data centre.

Air Quality

The primary pollutant of concern to air quality is Nitrogen Dioxide (NO_2) resulting from the combustion process on site. The Applicant submitted an air dispersion modelling report (Air Emissions Risk Assessment, May 2020, Ref 410.1014.00001); which assesses the potential

impact of emissions of NO_2, Particulates (PM_{10}) and Carbon Monoxide (CO) from the generators on local air quality.

Sulphur Dioxide was not assessed as a low sulphur fuel is used resulting in negligible emissions of sulphur, this has been included as a restriction in the permit.

The operator has confirmed that the generators will be operating at around 75% load during an emergency scenario in the event of the loss of power from the National Grid. The emissions concentrations used in the air quality modelling for the emergency scenario correspond with those that are set out in the emissions data sheets at a 75% load.

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 operators conclusions that predicted levels for the four testing regimes and emergency operations were unlikely to cause an exceedance of the Environmental Standard for human receptors and ecological receptors for NO_2, PM_{10} and CO.

An addendum to the modelling report was provided to assess the potential for impacts in relation to PM_{10} and CO for human receptors (Schedule 5 response 15/07/21). For all assessment criteria for both long and short term emissions standards the process contributions were insignificant (<1% of the AQS). Therefore, the long term and short term emissions of PM_{10} and CO screen out and require no further assessment. Our audit agreed with the operator's conclusions. Consideration below is for NO_2 impacts only.

We noted that the operator has not assessed against Acute Exposure Guideline Levels (AEGLs) or the short term nitrogen monoxide (NO) Air Quality Standard (AQS). We have included an assessment of these in our modelling check and we do not predict exceedances during any scenario described below.

Maintenance testing

Two modelling scenarios were run (MSM1 and MSM2). One that combined testing schedules 1 and 2 and a second that combined testing schedules 3 and 4:

Maintenance Schedule Model 1 (MSM1) includes the monthly maintenance testing, where the generators are tested for 1 hour each per month and also the annual black building test where the generators are tested for a further 1 hour each once per year.

Maintenance Schedule Model 2 (MSM2) includes an annual UPS wrap-around test where the generators are tested individually for 6 hours each. It also includes an annual load test where the generators are tested individually for 4 hours each at 100% loading.

<u>Human Receptors:</u>

<u>Short Term impacts</u>

Exceedances of the AQS are shown for a number of human receptor locations in table 6-2 of the air dispersion modelling report. In accordance with our guidance (specified generators dispersion modelling, webpage on .gov.uk) the next stage is to carry out statistical analysis using hypergeometric probability distribution.

The probabilities of exceedance for all receptors for the maintenance scenarios were <1% (defined as highly unlikely in the guidance). No further assessment is necessary.

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

Long Term impacts

Annual emissions from the maintencae scenarios were insignificant (<1% of the AQS) for all human receptor locations. The long term emissions screen out and no further assessment is necessary.

Our audit of the modelling confirms that long term process contributions are not likely to be significant at the receptors.

Ecological Receptors:

Short term and long term impacts were considered. The modelling considered air borne NO_x, - nitrogen deposition and acidification.

The process contributions at all relevant conservation sites within the screening distance were insignificant for the maintenance scenarios. No further assessment is necessary.

Our audit of the modelling confirms that NO_x nutrient nitrogen and acid deposition process contributions will be insignificant at all conservation sites.

Emergency scenario

The emergency scenario that has been modelled is based upon all generators operating simultaneously for 500 hours (Air Emissions Risk Assessment, May 2020, Ref 410.1014.00001). The operator provided further modelling of a more realistic emergency scenario and considered 1 hour and 36 hours of operation, where they predicted the statistical likelihood of an exceedance (Schedule 5 response 21/05/21). There is 36 hours of fuel stored on the site which is based upon customer demands and the operators design guidelines, to cater for long-term disruption to the electrical grid. It is deemed unlikely that it will ever be needed. Short term operation is more realistic. Therefore, the assessment undertaken by the operator is to assess the short term impacts of emissions for NO_2.

The permit application has assessed and provided evidence of the reliability of the National Electricity Grid distribution allowing the Environment Agency to judge that the realistic likelihood of the plant needing to operate for prolonged periods in an emergency mode is low. This is a new bespoke application, there are no records available for historical outages at the site. There are historic records for the operational NTT Hemel Hempstead Data Centres (EPR/BP3800PZ/A001) which is also operated by NTT Global Data Centers UK Ltd, there is no record of a grid failure at this installation (Schedule 5 response 21/05/21).

This is a new site and all generators installed meet Tier 2 EPA emissions standards. The stack heights is for the generators is 21m which is above the height of the surrounding buildings. The diesel generators installed are in line with BAT, and dispersion has been maximised.

Human Receptors:

Exceedances of the AQS are expected for a number of human receptor locations based on 36 hours of operation (numerical results not presented by operator these were extracted from modelling files that have been provided). In accordance with our guidance (specified generators dispersion modelling, webpage on .gov.uk) the next stage is to carry out statistical analysis using hypergeometric probability distribution.

Based upon 1 and 36 hours of emergency operation the probability of an exceedance is predicted to be <1% (highly unlikely).

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

Ecological Receptors:

There are a number of Local Wildlife Sites (LWS) and Ancient Woodlands (AW) within the screening distance of this installation. No European Sites or Sites of Special Scientific Interest (SSSI) are within the screening distances.

Exceedances of the AQS are expected for a number of ecological receptor locations based on 36 hours of operator (numerical results not presented by operator these were extracted from modelling files provided by the operator). In accordance with our guidance (specified generators dispersion modelling, webpage on .gov.uk) the next stage is to carry out statistical analysis using hypergeometric probability distribution.

Based upon 1 and 36 hours of emergency operation the probability of an exceedance is predicted to be <1% (highly unlikely). This is based upon the operator using a critical level of 200µg/m^3.

Our audit did not agree with the operators findings. The daily NO_x critical level is 75µg/m^3. With justification we would allow a 200µg/m^3 when calculating probability of exceedance. The operator chose not to provide such a justification. Therefore, we must base the calculations on 75µg/m^3.

Based on our calculations, the likelihood of exceedances of the daily NOx critical level of 75 µg/m3 occurring during electrical power outage of 36 hours is greater than 5% (likely to occur).

The operator has suggested that 36 hours of electrical power outage events per year is unrealistic based on the historical grid outage record. The operator suggests that a 1-hour electrical power outage event is more realistic.

Based upon 1-hour of electrical outage the operator has predicted a greater than 5% chance of exceedances at two ecological sites, with a maximum chance of 12% at The Chase and Eastbrookend Country Park LWS. We agree that the probability is above 5% for a 1 hour scenario and based on our guidance suggest that exceedances are likely.

The risk of an exceedance only arises during emergency operations when there is a National Grid outage, which are very infrequent and for a short duration as has been demonstrated in the Schedule 5 response (21/05/21). The installation is operating in line with BAT standards as detailed in the *Datacentre FAQ Headline Approach guidance*. On this basis we consider the risk of an exceedance at the two ecological sites to be low and no further measures or assessment is necessary.

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. Therefore, emission limit values (ELVs) to air and engine emissions monitoring are not required within the permit. Emergency hours’ operation includes those unplanned hours required to come off grid to make emergency repair of electrical infrastructure.

Technically, each individual generator with its own discharge stack, can be maintained, tested and used in a planned way for up to 500 hours per calendar year each without ELVs or associated monitoring under the Industrial Emissions Directive (IED)/Medium Combustion Plant Directive (MCPD). However, 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 23 hours a year, 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 of the Environment Agency.

Noise

The site will only run each generator regularly as part of the testing regime for 23 hours per year. This occurs during daytime hours during week days, 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. As this is a new installation then it is not possible to consider historical outage. There are no records available for historical outages at the site. There are historic records for the operational NTT Hemel Hempstead Data Centres (EPR/BP3800PZ/A001) which is also operated by NTT Global Data Centers UK Ltd, there is no record of a grid failure at this installation (Schedule 5 response 21/05/21). In addition, evidence of the reliability of the National Electricity Grid distribution has been provided allowing the Environment Agency to judge the realistic likelihood of the plant needing to operate for prolonged periods. Based on the evidence provided the potential for prolonged noise is also considered to be low.

Despite this, the operator has taken measures to minimise noise emissions. These include: The housing of the generators within containers fitted with noise attenuation and all plant is maintained and operated in line with the manufacturer's instructions. The operator also commissioned a noise modelling assessment which concluded that there would be a low impact from noise. We have not reviewed this assessment, although agree that the impacts will be low due to the limited hours of operation combined with the proposed noise mitigation measures which are sufficient to control 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 NOx emission concentration of 2000mg/m^3. All of the generators meet the Tier 2 EPA standard emissions based upon the confirmed typical operation of the generators at approximately 75% load.

The data centre comprises of a number of customer suites. The number and size of the generators matches the demand requirements of each suite. The site operates to an n+1 standby arrangement, where n is the load requirement of the data centre.

Each customer suite is sized depending on the demand requirements. This necessitates the use of a greater number of small scale generators. This provides the flexibility for the site to expand incrementally to the permitted 172.2 MWth limit in line with customer demand. It also allows for the refinement of maintenance and testing regime to avoid adverse impacts. Larger generators are typically more efficient, however, a smaller number of larger generators would not provide the flexibility needed and could result in generators that are oversized, which would outweigh any energy efficiency gains. Therefore, it is considered in this situation that a greater number of small scale generators is BAT.

In order to minimise the need for emergency operation, the site has two feeds from a 132 KV intake substation. To address short term fluctuations, brown-outs or black-outs, the site has uninterruptable power supplies. This can supply power for short periods preventing the need for the generators to kick in.

Protection of Groundwater

There are no fugitive emissions to land or groundwater from the data centre. The generators are located in containers over hard-standing or concrete flooring. All operational areas, roads and external; areas are on new hard standing. Raw materials used on the installation are Diesel fuel, lubricating and transform oils. Diesel fuel is stored in bunded tanks, lubricating oils are stored within the engine and are manually topped up during servicing, transformer oils are stored offsite and brought onto site as needed. 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 maintencae.

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 diesel belly tanks are fully-bunded with an integral bund providing 110% of the volume of the belly tank. There are no bulk storage tanks.
- The oil interceptor has a capacity of 36,000 litres and is able to contain the volume of an entire belly tank (24,000 litres). This provides tertiary containment for the site. Surrounding gullies and concrete areas provides further limited tertiary storage.
- The oil interceptor is fitted with an automatic closure device that diverts surface waters to the 36,000 litre storage tank in the event that oil or silt is detected. A high level alarm would also sound.
- The only fuel pipework on site is that which connects the belly tanks to the generators. No other distribution pipe work is required.
- The fuel level in the belly tanks is monitored continuously safety devices are fitted to prevent overfilling of the tanks.
- High and low level alarms are fitted to the belly tanks.
- The belly tanks are fitted with a leak detection system which is monitored continuously be 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.
- During filling the flow rate of fuel is also measured by the BMS.
- The belly tanks are subject to an annual inspection by suitably trained individuals in line with the Environment Management System (EMS).

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 serving the trading estate.

Drainage drawings are provided in the application. Details of the existing condition of the Site can be found in the Site Condition Report supplied with the application.

Monitoring

We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. In particular:

We have specified monitoring of emissions of carbon monoxide from emission points for all standby generators as listed in table S3.1 of the permit (EPR/CP3902LV/A001) (new medium combustion plant), with a minimum frequency of once every 1500 hours of operation or every five years (whichever comes first). This monitoring has been included in the permit in order to comply with the requirements of Medium Combustion Plant Directive, which specifies the minimum requirements for monitoring of carbon monoxide emissions, regardless of the limited operating hours of the plant.

We have also specified monitoring of emissions of nitrogen oxides from emission points for all standby generators as listed in table S3.1 of the permit (EPR/CP3902LV/A001) (new medium combustion plant), with the same frequency specified for the monitoring of carbon monoxide emissions. In setting out this requirement, we have applied our regulatory discretion, as we consider that this limited monitoring, to happen in concurrence with the carbon monoxide monitoring, is proportionate to the risk associated with the emissions of NOx from the installation.

Taking into account the limited hours of operation of the generators operating at the installation, and the fact that we are not setting emission limits for NOx and carbon monoxide, we consider this monitoring can be carried out in line with web guide ‘Monitoring stack emissions: low risk MCPs and specified generators’ Published 16 February 2021 (formerly known as TGN M5). We have set a requirement for the first monitoring to happen within 4 months of the issue date of the permit or the date when each new medium combustion plant is first put into operation, whichever is later.

We have set an improvement condition (IC2) requesting the operator to submit a monitoring plan for approval by the Environment Agency detailing the operator’s proposal for the implementation of the flue gas monitoring requirements specified in the permit.

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:

- Health and Safety Executive (HSE)
- Local Authority – Planning – Barking and Dagenham London Borough Council
- Local Authority - Environmental Health –Barking and Dagenham London Borough Council
- National Grid
- Sewage Authority – Thames Water
- Director of Public Health
- Public Health England

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 as there are no European Sites or Site of Special Scientific Interest within the screening distances.

For the Local Wildlife Sites (LWS) and Ancient Woodlands (AW) within the screening distance, an assessment of the potential for impacts was undertaken by the operator which is reviewed in the Key Issues section of this document. We agree with the operator’s conclusion that there is a low risk that these sites will be impacted by this installation.

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.

Climate change adaptation

We have assessed the climate change adaptation risk assessment.

We consider the climate change adaptation 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.

Raw materials

We have specified limits and controls on the use of raw materials and fuels.

Pre-operational conditions

Based on the information in the application, we consider that we need to include a pre-operational condition for future development.

- This condition requests that the operator notifies the EA before the commencement of each development phase. This is required so that we can ensure that the generators being installed are in accordance with what has been stipulated in the application documents and 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 requesting the operator to submit a monitoring plan for approval by the Environment Agency detailing the operator's proposal for the implementation of the flue gas monitoring requirements specified in the permit.

Emission Limits

We have decided that emission limits are not required in the permit.

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

No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.

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.

Responses from organisations listed in the consultation section:

Response received from: Public Health England (PHE)

Brief summary of issues raised:

The consultee has commented regarding the air quality assessment provided by the applicant. They identify that the main emissions of potential concern are PM2.5, PM10 and nitrogen dioxide. They summarise the conclusions of the air quality assessment stating that there is potential for the 1 hour mean NO_2 Air Quality Assessment Level (AQAL) to be exceeded at a number of human receptor locations. They identify that even though it is reassuring that the generators are likely to be operated for <1 hour in an emergency due to loss of electricity supply there is still potential for an impact on human receptors.

The consultee advises that the Environment Agency (EA) should consider appropriate mitigation measures are in place, both during routine maintenance and testing, and should a failure of the mains electricity occur.

It is noted that the operator propose to develop an Air Quality Emergency Action Plan (AQEAP) for prolonged outage scenarios. They raise the concern that this

may not be produced prior to potentially unacceptable acute exposure occurring. They also advise that the EA and Local Authority should confirm that they are satisfied with the contents of the plan.

The consultee has also commented with regards to noise. They note that there is potential for noise from the generators when they are operational. In addition they note that a noise assessment has been produced which concludes that the predicted impacts will be low. They advise that the regulator (the EA) should confirm that they are satisfied that there are operational measures in place if noise is identified to be an issue once operational.

Summary of actions taken:

Our Air Quality team has audited the air quality assessment and we agree with the operators conclusions.

For the maintenance scenario although the maximum 1 hour mean NO_2 concentration is above the AQAL, the statistical analysis identified that the probability of an exceedance is less than 1% and therefore highly unlikely. This approach is in accordance with our specified generator guidance as referenced earlier in the Decision Document.

For the emergency scenario the operator initially modelled 500 hours of emergency operation. The 1 hour mean NO_2 concentration is above the AQAL and the statistical analysis identified that there is the potential for exceedances. This is an unrealistic period of operation and is highly unlikely to ever happen. The hours of operation are identified as being <1 hour, there is also only 36 hours of fuel stored at the installation. The applicant provided further statistical analysis for a 1 hour and 36 hours of operation, which represents a more realistic period of emergency operation. In both instance probability of exceedance for human health was <1% and thus highly unlikely.

Although there is no historic record of operation at this installation. The operational Hemel Data Centre also operated by NTT global has never had to fire up the generators in an emergency situation due to electricity failure.

Therefore, for both maintenance and emergency scenarios the probability of an exceedance is highly unlikely. It can be therefore concluded that the proposals are acceptable with regards to the potential for impacts with regards to human health.

As the proposals are acceptable with regards to human health then there is no issue regarding the timeframe for the production of an AQEAP. The EA and Local Authority will work together to review the AQEAP, the relevant Improvement condition (IC1) will only be signed off once the EA are satisfied with its contents.

We have reviewed the proposed measures for the mitigation of noise from the installation. As described in the Key issues section, we are satisfied with the operators proposals.