



Environmental Risk Assessment

SOF-11 Docklands Datacentre: EPR/QP3108ST/A001

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1.0 INTRODUCTION

HDR | Hurley Palmer Flatt (HDR) has been appointed by SOF-11 Docklands DC UK BIDCO Limited (the Operator) to prepare an Environmental Risk Assessment (ERA) to support the application (ref QP3108ST) for a new bespoke Environmental Permit for the installation located at Greenwich View Place, Isle of Dogs, London (TQ 37672 79263).

The operator is required to apply to the Environment Agency (EA) for an Environmental Permit because the total thermal capacity of the site's combustion plant exceeds the 50MW threshold stipulated in the regulations¹.

For a detailed description of the site and surrounding area, please refer to the Non-technical summary submitted as part of the application for a permit.

Please refer to the following reports for detailed risk assessments that have been submitted as part of the application for a permit:

- Air Quality assessment
- Noise assessment
- Flood risk assessment

1.1 Purpose of this document

This ERA aims to identify potentially significant environmental risks associated with the installation's activities, the applicable source pathway receptors and the control measures in place to mitigate the identified risks.

This ERA has been produced using the EA guidance – "Risk assessments for your environmental permit"².

¹ The Environmental Permitting (England and Wales) Regulations 2016

² <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>

2.0 ENVIRONMENTAL RISK ASSESSMENT

2.1 Approach

We have used the steps outlined in the EAs guidance – “Risk assessments for your environmental permit” to complete the ERA for the installation:

1. Identify and consider risks from the site;
2. Identify the receptors at risk from the site;
3. Identify possible pathways from the sources of risks to receptors;
4. Assess risks relevant to the site’s activities, and if acceptable then screen out;
5. For risks that cannot be screened out, state controls and next steps.

Using the above steps, the following have been identified as potentially significant environmental risks of operating the installation:

- Discharges to air, surface or groundwater;
- Global warming potential;
- Fugitive Emissions (from uncontrolled sources);
- Odour;
- Noise and Vibration;
- Visible emissions;
- Waste ;
- Accidents.

2.2 Assessment of risks identified as significant

In Table 1 overleaf, the receptors, pathways, probability of exposure and control measures have been assessed for each of the risks identified.

Table 1: Summary of hazards, control measures and risks

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
<p>Point source emissions to air- NO_x, SO₂, PM₁₀ emissions and un-burnt hydrocarbons from generator stacks</p>	<p>Local residents, local business, college, primary school, community nursery students and staff, Mudchute Park and Farm, offices, shops, leisure facilities, religious buildings, and hotels etc.</p>	<p>Airborne</p>	<p>Potential – See Air Quality report for dispersion model and risk assessment.</p> <p>Monthly tests and annual maintenance of generators to be kept to a minimum.</p> <p>Generators are only to provide back - up power and therefore only operate infrequently and for short periods. No export of power is planned.</p> <p>Local atmospheric conditions have the potential to cause pollutants to accumulate. E.g. calm winds and high pressure</p>	<p>Potential negative impact on local air quality and therefore a potential risk to human health and local wildlife.</p>	<p>Implement an Air Quality management plan (AQMP) which is intended to limit operation during an outage and to notify highly sensitive receptors/ the EA in the event of a prolonged grid outage (generators operate over several hours). This includes observations on the current weather conditions/ wind direction/ time of day/ day of the week and their likely impact on local air quality.</p> <p>Consider air quality and emissions dispersion in the specification of the SDGs.</p> <p>Minimise frequency of generator runs, and stagger testing so generators are tested individually, where possible.</p> <p>Generators only operated as part of test regime or in event of an emergency.</p> <p>Generators are serviced as part of maintenance contract in accordance with supplier recommendations.</p> <p>The generators use low sulphur content fuel.</p> <p>In the event of an outage restore power as soon as practicable and limit the time the generators operate.</p>	<p>Low/medium – Air quality model completed as part of the application identified that exceedances unlikely during normal operations.</p> <p>Outages that result in prolonged generator operation may cause elevated levels but these are considered to be extremely rare events. The Air Quality Management Plan (AQMP) will act to limit exposure during an outage.</p>

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
Global Warming Potential – CO ₂ emissions from combustion of diesel and power supply to site.	Wider population – global warming due to emissions of greenhouse gasses.	Airborne	Unlikely – under normal operation, the generators rarely operate in anger therefore only small amounts of fuel are likely to be combusted each year.	Climate change, due to increase in greenhouse gases present in the atmosphere.	<p>Minimise frequency of generator runs, and where possible stagger testing so generators are tested individually.</p> <p>Generators only operated as part of test regime or in event of an emergency.</p> <p>Consider global warming potential in the specification of combustion plant.</p> <p>Energy efficiency measures to reduce site wide electricity.</p> <p>Generator sets should be operated in accordance with manufactures recommendations.</p>	Low – due to minimal running of combustion plant and effective control measures in place.
Fugitive Emissions (from uncontrolled sources) – Fuel spills during refuelling or leaks from damaged fuel tanks.	Groundwater, surface water, sewer system, soils.	Surface run off / leaching / surface waters via site drainage or vertical leaching.	Possible but unlikely - spills could occur during re-fuelling, or if there is any damage to the fuel tanks.	<p>Spilled / leaked fuel could leach into groundwater/ surface water/ soils and/ or sewer system.</p> <p>Potential contamination of groundwater/ watercourses.</p>	<p>Generators and associated diesel tanks located internal to main building. Tanks are compliant with applicable Regulations, banded and fitted with leak detection and overflow alarms.</p> <p>Regular visual checks for leaks / spills. Spill kits within close proximity of fuel storage and fill points. Emergency preparedness and spill response training available.</p> <p>Fuel delivery procedures implemented. Suppliers to adhere to procedures. with surrounding area covered in good quality hardstanding.</p>	Low – tanks internal and management procedures in place for refuelling activities and for spill response.

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
Odour – Odour from storage / combustion of fuel	Employees, local residents, local business, college, primary school, community nursery students and staff, Mudchute Park and Farm, offices, shops, leisure facilities, religious buildings, and hotels etc.	Airborne	Highly unlikely - odour from the fuel is not likely to have an impact in the locality area.	Nuisance to on site staff and local residents. May lead to complaints.	Fuel contained in main building in sealed bulk tanks preventing emissions of fugitive odours. Minimise frequency of generator runs, and stagger testing.	Low - The risk of odour from operation at the site is considered negligible. It is not expected that an odour Management Plan will be required.
Noise and Vibration – Noise from start-up and operation of generators	Employees, local residents, local business, college, primary school, community nursery students and staff, Mudchute Park and Farm, offices, shops, leisure facilities, religious buildings, and hotels etc.	Source pathway receptor model.	Unlikely – The planning requirement for plant not to increase ambient noise. Noise report undertaken shows no significant impact.	Complaints from local residences. Potential harm to human health due to elevated noise levels.	Plant should be maintained in accordance with manufactures guidelines. There is a planning requirement that existing plant does not exceed ambient noise levels. Minimise frequency of generator runs, and stagger testing, if possible. Noise reporting has been undertaken with no significant impact found. The generators are provided with acoustic silencers at the air inlets and outlets of the rooms. The rooms will be lined with acoustic absorbent to aid in reducing the internal noise levels. Each generator has an exhaust flue that is ducted to the rooftop and vented 7.4m above the roof level.	Low – Noise report showed compliance with the criteria for all operating scenarios at all of the residential receptor locations and that the plant meets local council required limits. Effective control measures in place.

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
<p>Visible Emissions – emissions from generator stacks during start-up</p>	<p>Employees, local residents, local business, college, primary school, community nursery students and staff, Mudchute Park and Farm, offices, shops, leisure facilities, religious buildings, and hotels etc.</p>	<p>Airborne</p>	<p>Unlikely – due to infrequent and staggered generator operation</p>	<p>Potential visual impacts during for 10 seconds of generator starting.</p>	<p>Minimise frequency of generator runs, and stagger testing, if possible.</p> <p>Generators only operated as part of test regime or in event of an emergency.</p> <p>Regular fuel polishing to remove impurities, implementing a planned preventative maintenance regime that looks at engine operation, exhausts and flues. Generators are regularly inspected and maintained to reduce visible smoke.</p>	<p>Low – effective control measures in place and infrequent generator operation.</p>
<p>Waste – waste fuels, oil sorbents and rags, lubricants & hydraulic fuels, solid wastes (air filters, packaging and spare parts) and end of life plant</p> <p>Small quantities of waste oils/ lubricants may be generated from routine maintenance activities or in the event of a spillage/leakage.</p>	<p>Groundwater, surface water, sewer system, land.</p>	<p>Land/ water</p>	<p>Unlikely – Waste is not expected to be generated in large amounts during normal operation of the combustion plant.</p>	<p>Potential to contaminate water/ land.</p>	<p>Procedures for licenced and responsible collection of any waste oils and other hazardous wastes that are generated by site activities.</p> <p>Waste uplifted by a suitable waste carrier, and duty of care information retained on record.</p> <p>Appropriate waste containers suitably located to capture the various waste streams.</p>	<p>Low – effective control measures in place.</p>

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
<p>Accidents - Overfilling, spills during refuelling / polishing / disposal, failure in secondary containment, pipe ruptures, valve failure, user error</p>	<p>Groundwater, surface water, sewer system, soils.</p>	<p>Land/ water</p>	<p>Possible but unlikely – Only trained staff should be authorised to conduct refuelling activities.</p>	<p>Spilled fuel could leach into groundwater/ surface water and/ or sewer system. Although this is thought unlikely at the installation.</p> <p>Potential to cause environmental/ ecological harm.</p>	<p>Appropriate fuel refuelling procedures, emergency preparedness and spill training.</p> <p>Regular visual checks for leaks / spills. Spill kits within close proximity of fuel storage and fill points. Emergency preparedness and spill response training available.</p> <p>Fuel delivery procedures implemented. Suppliers to adhere to procedures with surrounding area covered in good quality hardstanding.</p> <p>Generators and associated diesel tanks located internal to main building. Tanks are compliant with applicable Regulations, bunded and fitted with leak detection and overfill alarms.</p> <p>Fuel polishing and fuel deliveries are infrequent as generators are standby plant.</p>	<p>Low– effective control measures in place.</p>

Hazard	Receptors	Pathway	Probability of exposure	Consequences	Control measures in place	Overall risk
<p>Accidents – Risk of flooding (pluvial/ fluvial etc.) to impact permitted activities i.e. SDGs / bulk storage tanks</p>	<p>Groundwater, surface water, sewer system</p>	<p>Flood waters, over surface and into installation</p>	<p>Possible but unlikely – would require significant event e.g. heavy rainfall / flooding event</p> <p>See Flood Risk Assessment submitted with application for an environmental permit.</p>	<p>Impact site operations and potential for polluted water to enter drainage systems</p>	<p>The site is protected by the Thames Tidal Defences (TDD) which include the Thames Barrier and secondary tidal flood defences along the River Thames. The TTD provides protection during fluvial and tidal events with up to a 1 in 1000 (0.1%) annual probability.</p> <p>Generators and associated diesel tanks located internal to main building. Tanks are compliant with applicable Regulations, bunded and fitted with leak detection and overfill alarms.</p>	<p>Low– effective control measures in place.</p>