


ACCIDENT MANAGEMENT PLAN Grid Powr (UK) Ltd

Prepared by:
Sol Environment Ltd

Date:
June 2023

Project or Issue Number:
SOL_22_PO96_GP

Contract/Proposal Number:		SOL_22_PO96_GP	
Authors Name:		Sophie Rainey	
Signature:			
Issue	Description of Status	Date	Reviewer Initials
1	First Submission to the Environment Agency	1 st June 2023	EH

This report has been prepared by Sol Environment with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Sol Environment and the Client. This report is confidential to the client, and Sol Environment accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Sol Environment beforehand. Any such party relies upon the report at their own risk.

Sol Environment disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

CONTENTS

	Page
1 INTRODUCTION	1
2 RISK MAGNITUDE ESTIMATIONS	2
3 SUMMARY & CONCLUSION	7

1 INTRODUCTION

This document has been prepared for Grid Powr (UK) Ltd and forms an Accident Management Plan in support of a New Bespoke Installation Permit Application for a proposed energy recovery facility on land at Houghton Main, Barnsley.

The Advanced Thermal Treatment (ATT) plant is designed to use Refuse Derived Fuel (RDF) feedstocks to produce heat to raise steam in a conventional tube boiler for utilisation in a steam turbine for the production of renewable electricity with a gross electrical output of up to 16MWe.

The Installation has been designed to process a maximum of 145,000 tonnes of pre-prepared Refuse Derived Fuel (RDF) per annum.

This Accident Management Plan has been produced in accordance with EA guidance Document '*How to comply with your Environmental Permit (EPR 1.00)*'.

It is stipulated under this guidance document that the Accident Management Plan fulfils the following four key requirements:

- Identifies events or failures that could damage the environment;
- Assesses how likely they are to happen and the potential environmental consequences;
- Actions to minimise the potential causes and consequences of accidents; and
- The actions that are required to be carried out if an accident happens.

This Accident Management Plan will be implemented and maintained at the site as part of the company's Environmental Management System and will ensure the site and all operatives within are fully prepared for such incidents.

The Accident Management Plan and all associated procedures will be reviewed at least every four years or as soon as practicable after an incident, with changes made accordingly to minimise the risk of occurrence / recurrence.

All of the necessary actions that are required to be taken in the event of an accident will be detailed within the detailed Site Emergency Procedures.

2 RISK MAGNITUDE ESTIMATIONS

The Accident Management Plan (Table 2.2 overleaf) has adopted a risk assessment approach to each potential hazard by combining the probability and magnitude of the potential risk to give an estimation of the risk prior to any mitigation measures. The risk management measures, which are designed to reduce the likelihood of occurrence, are then detailed followed by an estimation of the actual risk post-mitigation (Residual Risk Rating).

The DEFRA guide to risk assessment¹ indicates the approach of subjectively classifying the magnitude of potential consequences into four categories depending upon the degree of the impact that the potential risk could have and the context in which the risk is being assessed. The classification is used as a guide in this Risk Assessment.

The four categories are as follows:

- **Severe:** Possible irreparable damage to environmental resources;
- **Moderate:** Possible damage to environmental resources which are limited within a regional context;
- **Mild:** Possible effects might be transient damage to environmental resources which are commonplace on a regional basis and alternative sources are readily available;
- **Negligible:** The effects are negligible or might cause very slight temporary deterioration in the current environmental resource quality.

The matrix shown below considers the probability of the potential risk against the magnitude of the potential impact, thereby giving an estimation of the resulting likelihood of the risk occurring.

Probability of potential Risk	Magnitude of Potential Impact			
	Severe	Moderate	Mild	Negligible
High	High	High	Medium/Low	Near Zero
Medium	High	Medium	Low	Near Zero
Low	Medium	Medium	Low	Near Zero
Negligible	Medium	Medium/Low	Low	Near Zero

The qualitative risk assessment for the Accident Management Plan has been based on the matrix outlined above.

The final stage of the risk assessment is the judgement of the severity of the residual risk following implementation of the mitigation measures.

The entire plant has been subject to HAZOP and has been designed to fail safe.

¹ A Guide to Risk Assessment and the Risk Management for Environmental Protection, 1995.

Table 2.2: Accident Management Plan					
Accident Scenario	Probability of Accident Occurring	Magnitude of Potential Impact	Risk Rating before mitigation	Risk Management	Residual Risk Rating (following Mitigation)
1 - Spills and Leaks / Loss of Containment / Transfer of Substances / Overfilling of Vessels	Medium	<p>Moderate to Severe</p> <p>Spillage and leakage could occur during fuel deliveries, vehicle refuelling, vehicle breakdowns/ accidents and or damage to tanks or bunds;</p> <p>Loss of containment could result in potentially polluting liquids (including oils) being discharged in surface water drainage systems and to controlled waters;</p>	Low	<ul style="list-style-type: none"> The site is entirely sealed hardstanding with fully contained and sealed drainage and therefore considered to have a low potential for impacts to ground water. A sealed drainage and containment system for tanks containing potentially polluting liquids has been constructed so that any leaks / spills are contained. Electronic monitoring (i.e. level gauges, feedback loops etc) shall be installed on all vessels. All delivery areas are contained within a sealed drainage and containment system that incorporates bund walls, appropriate falls and drains. All storage vessels have been constructed to the appropriate British Standard. Tanks are inspected visually on a daily basis by site staff to ensure continued integrity of tanks, and identify any necessary remedial action. Minor spills to be cleaned up immediately, using sand or proprietary absorbent. Resultant materials to be placed in container for off-site disposal to appropriate facility, if necessary. Immediate action to be taken in event of major spill which is likely to cause polluting emissions to the environment to prevent liquid from entering surface water drains or any adjacent unsurfaced ground. Spillage to be cleared immediately and placed in containers for offsite disposal. EA to be informed. The plant has been designed in order to include an automated shutdown facility. The company has established accident and emergency procedures. 	Low

2 - Vandalism	Medium	Moderate The site could be subject to intentional vandalism and damage by intruders/ trespassers who could cause damage or harm to the plant and equipments, spills and leaks to tanks.	Medium	<ul style="list-style-type: none"> • On-site security measures. • Security lighting 24 hours a day. • Security cameras are installed at key areas of the site. • Security fencing extends around the site perimeter. • Lockable gates are located at the site entrance. • Gates will be locked whenever the site is closed. • Gates and fencing are inspected daily by operations staff to identify deterioration and damage and the need for repair. • Fencing and gates are maintained and repaired to ensure their continued integrity. If damage is sustained, repair will be made within the same working day. If this is not possible, suitable measures will be taken to prevent unauthorised access to the site and permanent repairs will be affected as soon as is practicable. • All visitors to the site are required to register in the visitor's book and sign out again on exit, thereby minimising the risk of unauthorised visitors on the site. • Operational procedures have been implemented including regular inspections, ensuring continual monitoring of security provision at the site. 	Low
3 - Flooding	Low: The majority of the site lies within Flood Zone 1 (low risk).	Moderate	Low	<ul style="list-style-type: none"> • The site is equipped with sealed drainage and bunding systems which will prevent the inflow of offsite flood water into critical areas (bunds, tanks, storage etc.). • A Flood Risk Assessment has been carried out which demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF. • The site is largely located in Flood Zone 1 and therefore is at low risk from flooding from rivers or the sea. 	Low
4 - Fire in EfW plant: Plant malfunction; Electrical equipment that could provide an ignition source;	Medium	Severe	Medium	<ul style="list-style-type: none"> • All plant is subject to a planned preventative maintenance schedule. • The plant has significant control and safety systems all of which are interlocked to ensure a very controlled shutdown in the event that the plant undergoes operational difficulties. • All plant has been specified to be intrinsically safe and earthed in accordance to best practice. 	Low

<p>Waste products / raw materials that may support combustion.</p>				<ul style="list-style-type: none"> • All aspects of the plant and buildings are constructed of non combustible materials. • Containment system: all tanks and vessels containing flammable and potentially polluting liquids are constructed so that any leaks/spillages are contained and responded to in accordance with established emergency procedures. • Fire suppression, detecting and monitoring systems have been installed. • Separation of combustible materials from the source prior to processing: <ul style="list-style-type: none"> – All RDF feedstock is stored within the Fuel Reception Hall; and – All flammable process consumables shall be stored in bunded tanks. • In the event of a fire, the following actions will be taken: <ul style="list-style-type: none"> – The fire brigade will be notified immediately and the EA as soon as practicable; and – The site will be immediately evacuated. • Records of fire incidences will be kept on site together with a summary of remedial action taken. • The EA will be advised of all incidents of fire as soon as is practicable. • Smoking will not be permitted in the operational areas of the site. • Automated fire detection and control systems have been installed. 	
<p>5 - Incompatible Feedstock/ Unwanted Reactions: Some of the raw materials and waste inputs at the site could contain impurities that impede / prevent the combustion process.</p>	<p>Low</p>	<p>Moderate / Severe</p>	<p>Low</p>	<p>The following methods will be implemented to ensure that incompatible feedstocks do not compromise the safe operation of the plant:</p> <ul style="list-style-type: none"> • All RDF accepted onto site will be subject to a detailed pre-acceptance procedure; • All incoming RDF will be inspected in accordance with an established waste acceptance procedure; • Any non-conforming RDF will be removed prior to acceptance in accordance with an established waste rejection procedure. <p>Records of incidents involving incompatible waste will be kept on site together with a summary of the remedial action taken.</p>	<p>Low</p>

<p>6 - Failure of Mains Services: Failure in the mains services, water or electricity.</p>	<p>Medium</p>	<p>Low</p>	<p>Low</p>	<p>In the event that mains services of water and electricity supplied to the site are unavailable, the following actions will occur:</p> <ul style="list-style-type: none"> • In the event of sudden disconnection of the grid the ID fan will cease to operate, thus no emissions will be released to atmosphere; • All conveyors will cease operating so no further transfer of material can occur; • The software control systems are all backed up with an Unlimited Power Supply system that will ensure that a controlled shutdown takes place; and • The boiler plant shall shutdown, thus rendering the plant inoperable. 	<p>Negligible</p>
<p>7 - Operator Error / Failure of Equipment:</p> <p>The unexpected breakdown of any part of the plant could result in short term build up of waste in the reception area or the incomplete treatment of waste.</p> <p>The result of operator error could result in the plant not functioning efficiently.</p>	<p>Medium</p>	<p>Low</p>	<p>Low</p>	<p>The plant has been designed with a number of fail safe and automatic shutdown systems, where appropriate.</p> <ul style="list-style-type: none"> • The design of the plant only includes sufficient storage capacity for approximately 3 days' production and waste storage; • Should the above storage capacity be exceeded, incoming RDF will be diverted to landfill. <p><i>The above capacity measures allow waste to be received while equipment repairs are affected.</i></p> <ul style="list-style-type: none"> • All equipment will be subject to a Planned and Preventative Maintenance Programme (PPM), to minimise unplanned failures; • The plant also will have in place a number of Emergency Shutdown Controls to ensure safe shut down in emergency. 	<p>Negligible</p>

3 SUMMARY AND CONCLUSION

This document has been prepared to meet the requirements pertaining to Accident Management Plans within the Environment Agency guidance.

It is concluded that despite the Installation having the potential for a low-moderate environmental impact to the environment, the mitigation measures incorporated into the design of the plant and the site infrastructure are sufficient to mitigate the risks.

The design of the site will also be subject to a number of detailed design review processes including HAZOP. The findings of the HAZOP assessment will be incorporated into the design of the plant.

The company will operate using a suite of procedures for the control and management of all materials and plant in use at the facility.

These procedures will detail the required actions to be taken in the event of an emergency and should be used in the first instance for any accident and emergency at site.