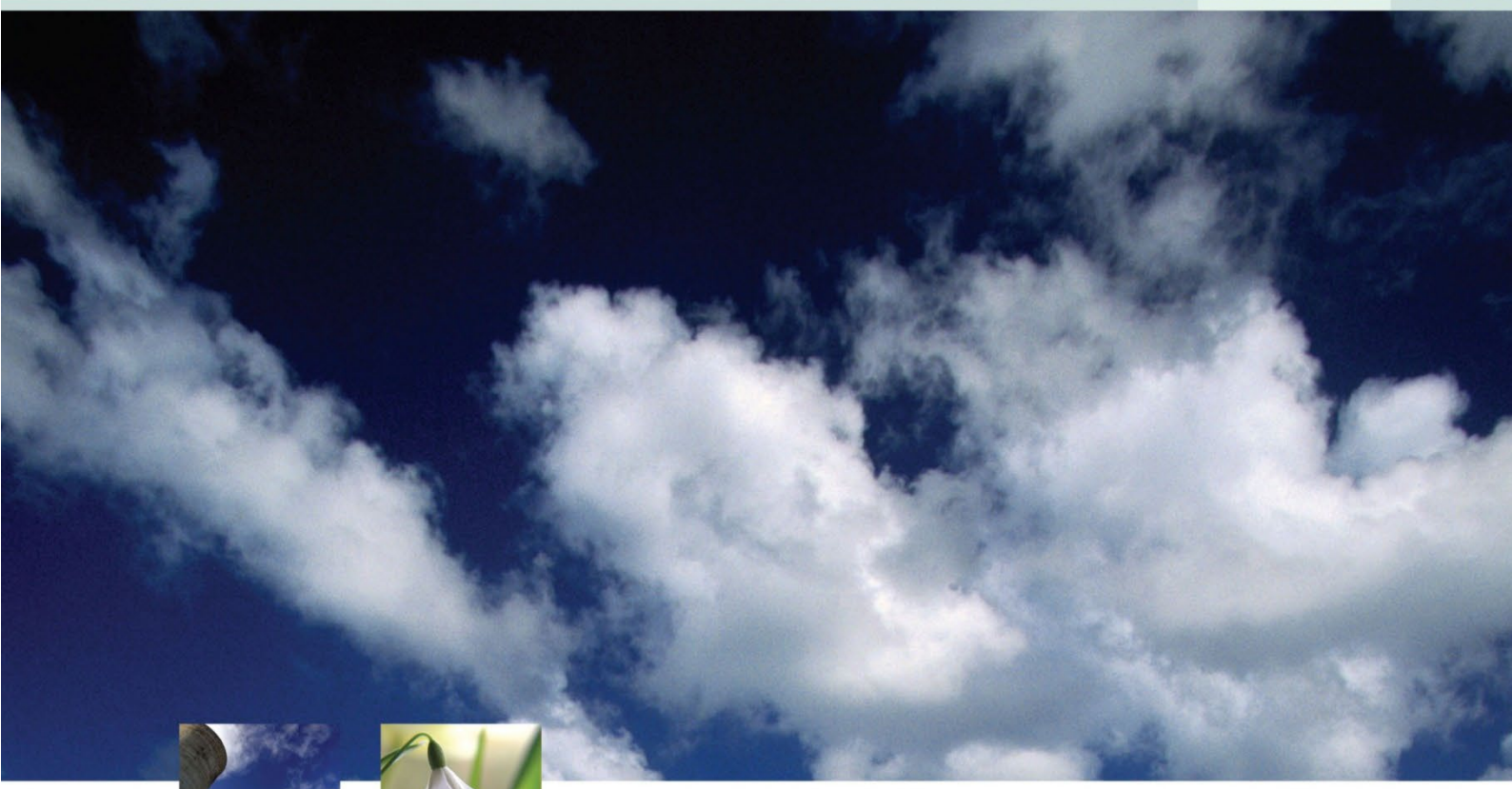

ACCIDENT MANAGEMENT PLAN

RDF Energy No.1 Ltd
Newport Energy from Waste Facility

Prepared by:
Sol Environment Ltd

Date:
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Project or Issue Number:
SOL_22_P087_CO

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1 INTRODUCTION

This document has been prepared by Sol Environment Ltd on the behalf of RDF Energy No.1 Ltd (hereafter referred to as "the applicant") in support of a permit application for the proposed operation of an energy from waste facility located on land at Alexandra Dock, Newport.

The site is located on land off Tom Lewis Road, Associated British Ports, Alexandra Docks, Newport, NP20 2WZ (National Grid Reference: ST 31253 84755).

This document represents the Accident Management Plan (AMP) submitted as part of the Application package to Natural Resources Wales (Sol Environment Ref. SOL_22_P087_CO).

The facility 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 24MWe.

The Installation has been designed to process approximately 260,000 tonnes of pre-prepared Refuse Derived Fuel (RDF) per annum.

The proposed process meets the definition of an Installation as defined by Section 5.1 'Incineration and Co-Incineration of Waste' paragraph A(1)(b) namely:

'The incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 3 tonnes per hour.'

This Accident Management Plan has been produced in accordance with NRW 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.

2 RISK MAGNITUDE ESTIMATIONS

The Accident Management Plan 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 assessment[1] 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.

Table 2.1: Risk Estimation Matrix

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 judgment of the severity of the residual risk following implementation of the mitigation measures.

[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	Moderate to Severe Spillage and leakage could occur during fuel deliveries, vehicle refueling, vehicle breakdowns/ accidents and or damage to tanks or bunds Loss of containment could result in potentially polluting materials (including oils and chemicals) being discharged in surface water drainage systems and to controlled waters	Low	• The site is entirely sealed hardstanding with fully contained and sealed drainage and therefore considered to have a low potential for impacts to groundwater. • All uncontaminated [clean] surface water runoff from roof and external roadways will be discharged via an attenuation tank to the docks. Surface water run-off from other external areas of the site will be collected in the attenuation tank prior to discharge via interceptor to the docks. An isolation valve is fitted prior to the pump emptying the interceptor to allow isolation if required. • The unloading of delivery vehicles will take place internally within the fuel reception building upon a sealed hardstanding. In the event of a spillage, the spillage will be contained within this area. • Storage of wastes is predominantly internal, with temporary storage of baled wastes externally. This external storage area is fully bunded with the drainage system routed to the onsite Waste Water Treatment Plant for treatment prior to discharge to the docks. • In the unlikely event of a fire onsite, all firewater will be contained onsite within the drainage system, sedimentation basin, attenuation tank, WWTP tanks and the Fuel Storage Bunkers and pumped into a tanker for off site for disposal. • A sealed drainage and containment system for all tanks containing potentially polluting liquids has been constructed so that any leaks / spills are contained. • 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	Low

				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. NRW to be informed. • The plant has been designed in order to include an automated shutdown facility.	
2 - Vandalism	Low	Moderate The site could be subject to intentional vandalism and damage by intruders/ trespassers who could cause damage or harm to the plant and equipment, spills and leaks to tanks or cause fires.	Low	• On-site security measures. • CCTV monitoring of all external and internal areas of the installation. • Security fencing extends around the site perimeter. • Fencing is inspected daily by operations staff to identify deterioration and damage and the need for repair. • Fencing is maintained and repaired to ensure 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. • External on-line monitoring and administration of the combustion process from a remote location, including shut down option. • Operational procedures have been implemented including regular inspections, ensuring continual monitoring of security provision at the site.	Low
3 – Flooding & Extreme Weather	Medium	Severe Extreme weather including flooding and snow can not only effect the site itself but prevent access to supplies of abatement reagents, back up equipment etc.	Medium	• The site is equipped with a sealed drainage. Surface water runoff is collected within an attenuation tank. • The NRW flood risk map indicates that the site lies within Flood Zone 1; an area where there is a low risk of flooding from rivers and the sea. This is land assessed as having a chance of flooding of less than 1 in 1000 (0.1%) each year. However, small areas of the site along the northern boundary are shown to be at risk of surface water flooding. • Site operational procedures will ensure there is always a plentiful supply of reagents onsite. Operations will cease until such time as	Low

				reagents are available should supplies run out. • In the event of potential surface water flooding, all waste will be stored internally. • The site is equipped with spare plant and equipment which can be used in the event of a single plant breakdown. (e.g. loading shovels etc). • Weather forecasts will be monitored and the operations manager will ensure extreme weather forecasts are prepared for in advance.	
4 - Fire in combustion plant. Plant malfunction; Electrical equipment that could provide an ignition source; Waste products / raw materials that may support combustion.	Medium	Severe	Medium	• 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. • All aspects of the plant and buildings are constructed of non-combustible materials. • The plant has been designed to shut down (fail safe) in the event of an emergency. • 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, detection and monitoring systems have been installed where necessary. • Separation of combustible materials from the source prior to processing: – All waste is stored within the dedicated storage area; – All flammable process consumables shall be stored in bunded tanks. • In the event of a fire, the following actions will be taken: – The fire brigade will be notified immediately and NRW as soon as practicable; – All containment valves and systems will be closed; – The site will be immediately evacuated. • Records of fire incidences will be kept on site together with a summary of remedial action taken. • The entire site will be subject to a third party DSEAR assessment	Low

				and all recommendations / mitigation measures incorporated. • NRW will be advised of all incidents of fire as soon as is practicable. • Smoking will not be permitted in the operations areas of the site.	
5 - Incompatible Waste/ Unwanted Reactions: Some of the raw materials and waste inputs at the site could contain impurities that impede / prevent the combustion process.	Low	Moderate / Severe	Low	The following methods will be implemented to ensure that incompatible feedstocks do not compromise the safe operation of the plant: • All wastes accepted onto site have been subject to 'pre-acceptance' in accordance to established procedure; • All incoming wastes are inspected in accordance with established procedure; • When in the waste reception areas, any non conforming waste will be removed prior to acceptance in accordance with established procedure; • Records of incidents involving incompatible compatible will be kept on site together with a summary of the remedial action taken.	Low
6 – Failure of Mains Services: Failure in the mains services, water or electricity.	Medium	Low	Low	In the event that mains services of water and electricity supplied to the site are unavailable, the following actions will occur: • In the event of sudden disconnection of the grid the ID and combustion air fans will cease to operate, thus combustion cannot take place; • The emergency generator set will connect to keep the ID fan running to remove excess heat from the combustor during shut down or loss of services; • All combustion air fans will stop and flue emissions will instantly cease to be produced; • All feed drives will stop and no more materials will be fed to the plant; • All pump sets will cease operating so no further transfer of material can occur; • The boiler plant shall shutdown, thus rendering the plant inoperable; • On grid failure, an emergency diesel generator will be used to allow the safe shutdown of the plant.	Negligible
7. Operator Error / Failure of Equipment:	Medium	Low	Low	The site is equipped with spare plant and equipment which can be used in the event of a single plant breakdown. (e.g. loading shovels etc).	Negligible

The unexpected breakdown of any part of the plant could result in short term build up of waste in the reception areas or the incomplete treatment of waste. The result of operator error could result in the plant not functioning efficiently or a risk of fugitive emissions (such as odour) to air through uncontrolled decomposition of biological waste.				The facility has been designed with a number of fail safe and automatic shutdown systems. Should the facilities storage capacities be exceeded, incoming waste will be diverted to a nearby waste processing / landfill site. A back up extraction and ventilation system for the Fuel Building is installed which incorporates carbon filtration for odour prevention. *The above capacity measures allow waste to be received while equipment repairs are affected.* • All equipment is subject to a Planned and Preventative Maintenance Programme (PPM), to minimise unplanned failures; • The plant also has in place a number of Emergency Shutdown Controls to ensure safe shut down in emergency.	

3 SUMMARY & CONCLUSION

This document has been prepared to meet the requirements pertaining to Accident Management Plans within the Environment Agency guidance document EPR1.00 *'How to Comply with your Permit'*.

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 company operates using an established suite of procedures for the control and management of all materials and plant in use in their process. These procedures 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.