Sizewell C Project
Combustion Activity Permit Application
Appendix J: Contingency Plan

DOCUMENT CONTROL

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Definitions

Term / Abbreviation	Definition
ACA	Ancillary Construction Area
AD	Associated developments
APMP	Accident Prevention and Management Plan
CES	Construction Electrification Supply
CAP	Combustion Activity Permit
EDRMS	Electronic Document and Records Management System
EPR	Environmental Permitting (England and Wales) Regulations 2016, as amended
FAPs	Fire Assembly Points
MCA	Main Construction Area
MDS	Main Development Site
MW	Megawatt
PEEP	Personal Emergency Evacuation Plan
SZC	Sizewell C
TCA	Temporary Construction Area

1 INTRODUCTION

This Contingency Plan is provided as additional information to support the Environmental Permit application to enable electricity generation on site during the construction phase of the Sizewell C (SZC) nuclear new build project. The construction of SZC will utilise static generators and mobile diesel generators to enable construction. The site is expected to have a total installed capacity of up to 123.2 MWth. The static generators *installed capacity* is expected to be up to 109.9 MWth, and mobile generators are expected to have a total capacity of up to 13.3 MWth. Power demand during the peak construction is expected to be 82.4 MWth after adjusting the load to account for the utilisation of the hybrid operational mode of the hybrid diesel generators.

The installation activity environmental permit will consist of liquid fuel burning engines operating under Section 1.1 Part A(1)(a) of the Environmental Permitting (England and Wales) Regulations 2016, as amended (EPR), for the burning of fuel in an appliance with a rated thermal input of 50 or more Megawatt (MW).

1.1 Purpose

As part of the Environmental Management controls to be adopted in combination with the SZC installation activity environmental permit this Contingency Plan has been developed to ensure that impacts to the environment are minimised with regards to:

- Breakdowns
- Enforced shutdowns of generators
- Any other abnormal operations, for example due to extreme weather or site emergencies

The Contingency Plan has been developed in accordance with Environment Agency Guidance https://www.gov.uk/guidance/develop-a-management-system-environmental-permits.

This document presents the mitigation measures and contingencies to be adopted in the event of any of the incidences above occurring in order to ensure that the site activities are managed appropriately to prevent harm to human health or the environment.

1.2 Scope

The Contingency Plan will apply to the operation of all the combustion plant and equipment associated with the installation activity environmental permit. Please see Appendix A of the Supporting Information Document for a site plan showing the locations of the generators. Responsibilities

The Environmental Permit will be held by Sizewell C with the permit compliance being undertaken by the SZC Site Environmental Oversight Manager or their nominated representative. They are responsible for implementing, reviewing, and auditing the following Contingency Plan annually, or when changes are made whichever is soonest. The plan will also be reviewed should there be significant changes to the operation of the site such as an increase in use of generators, changes to fuel types, or operational profile. The overall compliance for the permit will be assured by the Site Environment Team. Roles and responsibilities, are outlined in the Supporting Information Document within this permit application package.

This Contingency Plan is communicated with relevant third parties as appropriate which as a minimum will include all contractors working at site.

2 CONTINGENCY ARRANGEMENTS

Table 3 below details the relevant contingency scenarios along with how these will be managed in order to ensure that the generators and directly associated equipment are operated so as to prevent any environmental pollution or risks to human health in the event of a breakdown, enforced shutdown or any other abnormal operations. Additionally, SZC have an incident categorisation and reporting procedure that will be followed in the event of an incident. Emergency contacts in the event of an accident or incident can be found in Appendix I: Accident Prevention and Management Plan within this permit application package.

Table 3 Contingency arrangements

Scenario	Contingency Measures	Responsibility
Fault in generator	The generators will be installed with telemetry which will measure run hours and efficiency amongst other parameters which would give an indication of potential faults or breakdowns before they occur. In the event of a fault in any of the generators it would be evaluated to see how the fault effects the performance and emissions from the generator e.g. hybrid operation or electrical output. If the fault allows the generator to continue operating and providing electricity to the network then it will continue to do so until it is able to be repaired. The shut down to repair the generator can be completed in a controlled manner to avoid generating any excess emissions. The affected generator would then either be repaired in situ by the qualified contractor with all faulty parts and waste materials removed by the contractor, or if of a more serious nature then the generator can be removed in its entirety and replaced on a like for like basis to ensure the required capacity of generators is maintained to ensure a safe working environment. Equipment will only be re-started following a repair once the work has been inspected and signed off by an appropriately qualified person (so that it is not restored before breakdown rectified which could cause pollution). Also, any restart would follow a documented operating procedure for that equipment.	Generator Contractors
Breakdown of generators	The generators will be installed with telemetry which will measure run hours and efficiency amongst other parameters which would give an indication of potential faults or breakdowns before they occur. In the event of a breakdown of any of the generators it would cease to operate and would therefore not generate any additional emissions. Whilst the breakdown could be abnormal, operationally the shutdown would follow standard operating procedures and would incur no increased emissions. The affected generator would then either be repaired in situ by the qualified contractor with all faulty parts and waste materials removed by the contractor, or if of a more serious nature then the generator	Generator Contractors

Scenario	Contingency Measures	Responsibility
	can be removed in its entirety and replaced on a like for like basis to ensure the required capacity of generators is maintained to ensure a safe working environment. Any breakdowns that result in a spillage will be addressed in accordance with spill procedures as detailed within the Accident Prevention and Management Plan (APMP). Equipment will only be re-started following a repair once the work has been inspected and signed off by an appropriately qualified person (so that it is not restored before breakdown rectified which could cause pollution). Also, any restart would follow a documented operating procedure for that equipment.	
Breakdown at fuel farm	In the event of damage to or breakdown of any of the tanks or other ancillary pipework and equipment within the fuel farm the relevant equipment would be isolated and made safe e.g. sealing any leaks, using stop valves etc. Any tanks will be fitted with high and high-high level alarms to prevent over filling. The affected tank or ancillary equipment would then either be repaired in situ by the qualified contractor with all faulty parts and waste materials removed by the contractor, or if of a more serious nature then the tank or ancillary equipment can be removed in its entirety and replaced on a like for like basis to ensure that the fuel farm has sufficient fuel available to ensure effective operation of the generator fleet. Any breakdowns that result in a spillage will be addressed in accordance with spill procedures as detailed within the APMP. If the spill procedures are not sufficient then this must be escalated, and the emergency procedures must be adopted and/or emergency services and Environment Agency notified.	Generator Contractors
Breakdown of package substations	The package substations will be installed with telemetry which will measure run hours and efficiency amongst other parameters which would give an indication of potential faults or breakdowns before they occur. In the event of a breakdown of any of the package substations it would cease to operate. Any associated generators would be shut down to ensure that no fuel is wasted, or emissions generated as the electricity generated would not be able to be supplied to the final user whilst the substation is inoperable. The affected package substation would then either be repaired in situ by the qualified contractor with all faulty parts and waste materials removed by the contractor, or if of a more serious nature then the package substation can be removed in its entirety and replaced on a like for like basis. Equipment will only be re-started following a repair once the work has been inspected and signed off by an appropriately qualified person (so	Generator Contractors

Scenario	Contingency Measures	Responsibility
	that it is not restored before breakdown rectified which could cause pollution). Also, any restart would follow a documented operating procedure for that equipment.	
Breakdown of mobile plant	In the event of a breakdown of any of the mobile plant such as refuelling vehicles or cranes for moving and placing generators they would be shut off immediately. The affected mobile plant would then either be repaired in situ by the qualified contractor with all faulty parts and waste materials removed by the contractor, or if of a more serious nature then the mobile plant can be removed in its entirety and replaced on a like for like basis to ensure the continued operation of the construction site. Any breakdowns that result in a spillage will be addressed in accordance with spill procedures as detailed within the APMP.	Generator Contractors
Enforced shutdown	The only likely scenario where there would be an enforced shutdown with regards to the generators would be from lack of access of fuel. This would only likely occur should access to the fuel farm or generators be hindered so that refuelling activities are unable to take place. Should there be any accidents on access roads or other access routes for refuelling tankers which denies access to site then the generators would still be used until the fuel in their day tank is either exhausted or resupplied. The day tanks can hold 1,000 to 2,000 litres dependent on the model of generator. If the fuel in the generators or fuel farm starts to run low then fuel can be supplied to the generators on a prioritised basis to ensure that activities that are critical or essential for human health, such as area lighting, are supplied first. In the event that generators are required to shut down then this would be undertaken in a controlled manner following standard operating procedures therefore avoiding excess emissions. Communication will be maintained with emergency services if it relates to access to site and as soon as access is granted then arrangements would be made to refuel the onsite fuel tanks and generators.	Generator Contractors
Unauthorised visitors	The site is a secure Construction Design and Management regulation site with gated access and to prevent any unauthorised access to project areas. In the event of any unauthorised personnel being on site then generators would continue to operate to provide electricity to all services as required unless the unauthorised visitors are either a danger to themselves or the equipment. Any affected generators or package substations would be closed down in a controlled manor to avoid any excess emissions.	SZC Security

Scenario	Contingency Measures	Responsibility
	The generators and substations can then be safely restarted once the situation is resolved.	
Flooding	Several areas of the site are indicated to be at risk of flooding (Flood Zone 3) as a result of rivers or seas without defences, including the southern, western and northern sections of the MCA and the eastern and southern sections of the TCA. All generators are self-contained, and the day tanks comprise a self-bunded sealed tank to prevent any release. The fill points are lockable and securely fastened at all times. Daily inspections will be undertaken which will identify if there are any localised areas at risk of flooding. In the event of any generator areas being flooded then the package substations and/or generators will be shut down to prevent risk to human health from electricity or damage to generators from water ingress to live systems. The generators would remain offline until the localised flooding has receded, and safety checks can be undertaken with regards to the affected equipment and that they are either certified for use or damaged so as to be removed and replaced. Should the flooding affect access routes for refuelling tankers which denies access to the generators or fuel farm then the generators would still be used until the fuel is either exhausted or resupplied. If the fuel in the generators or fuel farm starts to run low then fuel can be supplied to the generators on a prioritised basis to ensure that activities that are critical or essential for human health, such as area lighting, are supplied first. In the event that generators are required to shut down then this would be undertaken in a controlled manor avoiding excess emissions.	Generator Contractors
High intensity rainfall	The generators would remain operational to provide electricity to the construction activities unless it is unsafe to do so. If there is localised ponding or flooding then the associated risk would be managed in accordance with the flooding risk sections of the APMP.	Generator Contractors
High winds	The generators would remain operational to provide electricity to the construction activities unless it is unsafe to do so. Refuelling activities or relocation or installation of generator containers by crane will be suspended in the event of extreme winds over 40mph until the wind strength reduces to acceptable levels.	Generator Contractors
Frost and Ice	The generators would remain operational to provide electricity to the construction activities unless it is unsafe to do so.	Generator Contractors

Scenario	Contingency Measures	Responsibility
	Refuelling activities or other activities requiring mobile plant to move within the permitted area may be restricted if access roads and pathways become unsafe to use. If the fuel in the generators or fuel farm starts to run low then fuel can be supplied to the generators on a prioritised basis to ensure that activities that are critical or essential for human health, such as area lighting, are supplied first. In the event that generators are required to shut down then this would be undertaken in a controlled manor avoiding excess emissions.	
Snowfall	Snowfall could potentially result in an enforced shutdown which could hinder access to the fuel farm or generators be hindered so that refuelling activities are unable to take place. If the fuel in the generators or fuel farm starts to run low then fuel can be supplied to the generators on a prioritised basis to ensure that activities that are critical or essential for human health, such as area lighting, are supplied first. In the event that generators are required to shut down then this would be undertaken in a controlled manor avoiding excess emissions. Communication will be maintained with emergency services if it relates to access to site and as soon as access is granted then arrangements would be made to refuel the onsite fuel tanks and generators. If there is localised ponding or flooding as a result of snow melt then the associated risk would be managed in accordance with the flooding risk section of the APMP.	Generator Contractors
Extreme temperature	In high temperature periods over 25oC the generators will be monitored more closely to ensure that they do not overheat and that cooling arrangements are sufficient to ensure their safe operation. Should the high temperature impact the efficiency of the generators then the overall capacity of electricity produced will be monitored to ensure that all the needs of the installation activity environmental permit are met. Should this not be the case then further generators can be used in order to meet the construction requirements.	Generator Contractors
Fire	Each construction Contractor is required to develop their own fire safety plan (either as a stand-alone document or incorporated into their Health and Safety Management Plan) that states how they and their sub-contractors intend to meet the requirements set out in the Fire Safety Plan. These Contractor fire safety plans will be reviewed and accepted by SZC, before the Contractors commence work. **Tier 1:** Ensure compliance with the “Fire Safety Plan”	Generator Contractors, SZC

Scenario	Contingency Measures	Responsibility
	Planning, managing and monitoring of Health & Safety (including Fire Safety) impacting upon their workplace, employees and relevant persons. Identify and appoint a competent person(s) to undertake the Contractors duties for Fire Safety Advisor, Fire Risk Assessor and Emergency Preparedness Lead. Prepare and submit fire risk assessments and fire plans (produced by trained, competent assessors) based on the fire risk profile for all working areas, including working platforms, temporary buildings/workplaces, associated developments, storage areas and construction areas under the Contractor's control and update these where there is a change of risk. Provide a Fire Grab Bag located at the main access route into the working area containing, as relevant, building floor plans, access points, shut off valves and available water supplies. Include the fire arrangements for fire prevention, detection, firefighting, training and identify the designated responsible persons within the Fire Safety Plan. Provide fire detection (where applicable) and firefighting equipment within the Working Areas. Ensure sufficient, competent and suitably trained Fire Marshals and Fire Watchers are appointed for working areas. Monitor compliance with fire safety plans. Undertake appropriate servicing, maintenance and routine testing and inspection of all fire detection, alarm, firefighting equipment, emergency escape signage and fire exit signage within areas under the Contractors control. Establish, with the agreement of the SZC Fire Coordinator, designated Fire Assembly Points, smoking areas, waste control areas (disposal/collection), fuel stores, flammable stores and gas cylinder stores. Instigate fire drills to test the Contractor's fire safety arrangements and provide details of drills and exercise programs plus copies of the fire drill and exercise reports to the SZC Principal Contractor Team. Participate in site wide tests of the SZC emergency arrangements Ensure that the fire safety plan and the current fire risk assessment(s) are kept available and up to date. Ensure that any significant findings recorded within the fire risk assessment or actions identified as part of a fire safety audit are closed within the timescales agreed with the Principal Contractor. Where applicable, maintain a register and drawings of each fire alarm system, fire detection, emergency lighting and firefighting equipment/installations, fire doors, protected staircases, and emergency final exit locations (etc.) provided by the Contractor. Ensure fire escape routes and emergency exits remain clear at all times. **Contractors** The following responsibilities shall be undertaken by a contractor, supported where necessary by a competent person in relation to any workplace that to any extent is under their control:	

Scenario	Contingency Measures	Responsibility
	Ensure fire extinguishers of the appropriate type to mitigate the risks identified are provided at fire points and are available at all times. Ensure that workplaces contain only the amount of supplies and materials that are required for the work in hand for that day. Other supplies and materials should be kept at designated laydown areas remote from buildings under construction and temporary accommodation units. Storage areas shall be kept free of unnecessary build-up of combustible and flammable waste materials. Ensure any defects to equipment or fire safety arrangements are reported to the appropriate department / person and rectified as soon as possible. Ensure Fire Assembly Points (FAPs) are identified by signs, are marked on site layout plans posted in appropriate locations and are maintained clear at all times and checked on a daily basis to ensure that they have not been affected by any on-going construction and are capable of accommodating the numbers of persons that are likely to assemble there in a fire emergency. Maintain a written record of all visual checks and inspections of fire extinguishers, fire escape routes, and where applicable, emergency lighting and fire exit doors. Ensure good housekeeping and identify and implement corrective actions to eliminate fire hazards, such as overloaded electrical sockets, storage of combustibles or flammable materials, trip hazards or obstacles impacting fire escape routes. Where applicable ensure that all fire alarm systems are appropriately monitored, in order to make an emergency call for assistance in the event of fire. Ensure Fire Procedures are displayed, and fire exit routes clearly marked. Where applicable, ensure that in the event of a fire or other emergency evacuation, arrangements are in place to attend any fire alarm panel to identify the zone in alarm, undertake an investigation to confirm that it is either a confirmed fire or false alarm, call Sizewell C Security to summon assistance, assume overall control of an evacuation of the building and movement to the designated FAPs under the coordination of appointed Fire Marshals. To liaise with any other contractor that may need to undertake work within the Contractor's Working Areas, in order to ensure that they receive a brief on the fire procedures and safe evacuation routes prior to the start of any work. In addition, monitoring any work undertaken by other contractors to ensure that it does not have an adverse effect on the safe evacuation of the Working Areas. To discuss the arrangements for the safe evacuation of any disabled employee or regular visitor This may have to be through the formulation of an individual Personal Emergency Evacuation Plan (PEEP). To liaise with the SZC Fire Coordinator and Site Security team when necessary.	

Scenario	Contingency Measures	Responsibility
Site emergencies and evacuation	The Contractor will produce an Incident Management Plan that covers all foreseeable emergency situations using the template provided in the CBL Emergency Preparedness and Response document (CBL100100913). The decision to evacuate the site will be made by the SZC Emergency Controller who will communicate the evacuation plan as required.	Generator Contractors, SZC