

Sizewell C Project

Air Quality Management Plan

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REVISION HISTORY

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1 INTRODUCTION

An Air Quality Modelling Assessment was carried out for the combustion activities at the Sizewell C (SZC) nuclear power station. The Air Quality Modelling Assessment considered the potential environmental impacts of anticipated emissions to air from the essential diesel generators (EDGs) and ultimate diesel generators (UDGs). For the majority of the operational scenarios modelling, the impacts at human health receptors were considered not to lead to exceedances of the air quality standards, however impacts at a number of ecological receptors were considered to have the potential not to be insignificant, specifically with regards to NO_x and depositional impacts. Therefore, an Air Quality Management Plan (AQMP) has been developed for the SZC EDGs and UDGs to manage potential air quality impacts.

The purpose of the EDGs is to provide a back-up power supply to site safety systems in the event of a loss of off-site power supply to the site. The UDGs provide an additional back-up power supply to a smaller number of site safety systems in the event of a loss of both the off-site power supply and the back-up power supply from the EDGs. Hence the EDGs and UDGs sole purpose is to provide a critical nuclear safety function.

The EDGs and UDGs will undergo commissioning exercises prior to commencement of site operations in order to ensure they are fit for purpose. The EDGs and UDGs will be required to operate for regular routine testing and also periodic testing to simulate a loss of off-site power supply, as well as the need to operate in the unlikely event of an actual loss of power event. The use of diesel fuel will be minimised since, under normal operations, the diesel generators will only be run for safety related testing and maintenance. In addition, the diesel fuel will have a low sulphur content (0.1% w/w sulphur content).

SZC will implement an integrated management system of documented procedures covering quality, health and safety, and environmental management. The environmental aspects of the management system will be developed to comply with an accredited standard and will meet the indicative BAT requirements of the Environmental Agency guidance.

As part of the Forward Action Plan (FAP), SZC is proposing to develop written operating instructions for the combustion activity operations to ensure that operations are undertaken to safeguard environmental (and safety) performance. In addition, monitoring of the diesel generators will be carried out as part of the commissioning programme of work and the actual emission concentrations (including NO_x) from the diesel generators will be confirmed.

1.1 AQMP Proposed Measures

The potential impact of emissions to air from the EDGs and UDGs during different operational scenarios shall be minimised as far as practicable at SZC. The AQMP will be in place prior to commissioning and will be reviewed annually. The following measures are proposed as part of the AQMP.

Table 1: Proposed Measures for the Air Quality Management Plan

No.	Air Quality Management Measure	Timing
1	Avoid unnecessary operation of the EDGs and UDGs.	During all operational phases of the EDGs and UDGs.
2	Commissioning, simulated loss of off-site power event testing and routine testing should be scheduled where possible to periods avoiding worse case meteorological conditions i.e. avoiding specific wind directions and speeds. It should be noted that testing of the generators is required so that SZC can be certain they will be available, when required, to perform their nuclear safety function. As such, testing of EDGs and UDGs to coincide with favourable meteorological conditions will be on a best endeavours basis. The definition of worst-case meteorological conditions will be defined as part of the commissioning programme and the routine testing schedule.	During all operational phases of the EDGs and UDGs.
3	A commissioning and routine testing programme will be developed for the EDG and UDG units which will define a schedule for the commissioning and routine testing of the units. Testing is to be staggered as much as possible to limit the number of units being commissioned/tested in one day and on consecutive days. This will be on a best endeavours basis.	During commissioning and routine testing
4	The EDGs and UDGs will be commissioned in accordance with the commissioning program, which is still in the early stages of development. Consideration will be given to minimising the duration and frequency of testing, and even distribution of the testing undertaken, and the units tested across the schedule for the commissioning period, but tests must be of a sufficient duration and frequency to adequately demonstrate that the EDGs and UDGs can meet their nuclear safety function.	12 months prior to commissioning
5	Routine testing will be evenly distributed as much as possible and the duration and frequency of the testing will be minimised. Consideration will be given within the routine testing schedule to a maximum number of hours of routine testing in one day, but tests must be of a sufficient duration and frequency to adequately demonstrate that the EDGs and UDGs can meet their nuclear safety function.	During routine testing
6	The frequency of maintenance outages (estimated at approximately every 18 months) would be minimised through the use of a reliability-centred maintenance programme. The duration and frequency of maintenance outages (estimated at approximately every 18 months) will be defined once the maintenance programme has been confirmed, but tests must be of a sufficient duration and frequency to adequately demonstrate that the EDGs and UDGs can meet their nuclear safety function.	12 months prior to commissioning

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No.	Air Quality Management Measure	Timing
7	Avoidance of coinciding the routine testing of unit 1 with a simulated loss of off-site power event of unit 2 during the commissioning phase. This will be included in the commissioning programme. This will be on a best endeavours basis.	During commissioning and simulated loss of off-site power event
8	The AQMP will be reviewed annually.	Annually

1.2 Definitions

Term / Abbreviation	Definition
AQMP	Air Quality Management Plan
BAT	Best Available Techniques
EDG/EDGs	Essential Diesel Generator/s
FAP	Forward Action Plan
NO _x	Oxides of Nitrogen
SZC	Sizewell C
UDG/UDGs	Ultimate Diesel Generator/s