Noise Management Plan

Aldbrough Hydrogen Pathfinder

PREPARED FOR

SSE Hornsea Ltd

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Noise Management Plan

Aldbrough Hydrogen Pathfinder

0653313

Russell Cullen
Partner

Environmental Resources Management
Limited
2nd Floor Exchequer Court
33 St Mary Axe
London
EC3A 8AA

T +44 (0) 20 3206 5200

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AGS	Aldbrough Gas Storage
AHP	Aldbrough Hydrogen Pathfinder
DESNZ	Department for Energy Security and Net Zero
EA	Environment Agency
EP	Environmental Permit
EMS	Environmental Management System
ERM	Environmental Resources Management Limited
FOAK	First of a Kind
NIA	Noise Impact Assessment
NMP	Noise Management Plan
OCGT	Open Cycle Gas Turbine
SCR	Selective Catalytic Reduction

Acronym	Description
SSE	SSE Hornsea Ltd

1. INTRODUCTION AND PROJECT DESCRIPTION

Environmental Resources Management Limited (ERM) has been commissioned by SSE Hornsea Ltd (SSE) to produce a Noise Management Plan (NMP) for the proposed Aldbrough Hydrogen Pathfinder (AHP) Project. The AHP facility will be operated at SSE's Aldbrough Gas Storage (AGS) site on Garton Road, East Riding of Yorkshire (hereafter referred to as the 'Site').

This version of the NMP has been written to support the environmental permit application for the Site, which requires a bespoke installation permit. It is a live document, and SSE will regularly review the effectiveness of this NMP.

This document takes account of current legislation and regulatory guidance, and proposed activities at the Site.

The NMP is based on the findings of the Noise Impact Assessment prepared by ERM[1].

SSE is committed to ensuring that any noise control equipment at the Site is designed, operated and maintained appropriately so that it controls noise effectively at all times. As the site operator, SSE understands and accepts its responsibilities for controlling noise impact.

The aims of the NMP are to:

- Identify activities with the potential for noise generation
- Develop and implement an effective noise management strategy
- Minimise the likelihood of noise emissions from site and reduce potential environmental impact
- Ensure compliance with the environmental permit
- Protection of site personnel and visitors

For the purpose of this document, 'noise' and 'sound' have the same definition and may be used interchangeably throughout the text. Generally, noise will be used at times to differentiate between wanted and unwanted sound, e.g. sound produced by the Site operations is typically considered unwanted so will therefore be more commonly referred to as 'noise'.

1.1 SITE DESCRIPTION

The AHP project will be constructed within the boundary of SSE's AGS facility and will utilise approximately 3 ha of the AGS land. Location and the EP installation boundary of the Site is shown in Figure 1.

The existing AGS site at Garton Road, Aldbrough (Grid Reference TA 260370) is situated approximately 12 km north-east of Hull and approximately 21 km east of Beverley, in the county of East Riding of Yorkshire. It is located approximately 2.5 km south-east of the village of Aldbrough, with the hamlet of East Newton approximately 1 km away to the north-east and the village of Garton approximately 2 km away to the south.

The Site lies within a rural-urban fringe area with occasional manmade industrial features, including the AGS site.

The AHP project will operate in either power plant mode or electrolyser mode. Power plant mode involves extracting hydrogen from the cavern to be used in an Open Cycle Gas Turbine (OCGT)

[1] 'Aldbrough Hydrogen Pathfinder – Noise Impact Assessment – Final for Issue', ERM, 2025

to produce power, whilst electrolyser mode involves the use of the electrolyser to produce hydrogen for storage. The Site may operate during the day and night in power plant mode according to grid demand. When in power plant mode, the majority of equipment associated with the electrolyser will not operate and vice versa.

1.2 MAINTENANCE AND REVIEW OF NMP

The NMP is a live document which forms part of the wider Environmental Management System (EMS) for the site. All controlled EMS documents are held within an online system with a hard copy on site. Documentation is controlled through an integrated Document Control System (DCS). The Director of Gas Storage holds responsibility for implementation of the NMP including training of relevant staff.

This NMP will be reviewed every three years, or sooner if any of the following occur:

- if there have been noise complaints;
- if there are relevant changes to the site operations, infrastructure, or management

Operational staff will be made aware of the NMP as part of their induction training and refresher training to ensure all control measures are understood and implemented.

A complaints management procedure will be implemented, which will include logging, investigating and following up on any noise complaints and monitoring (see Section 4).

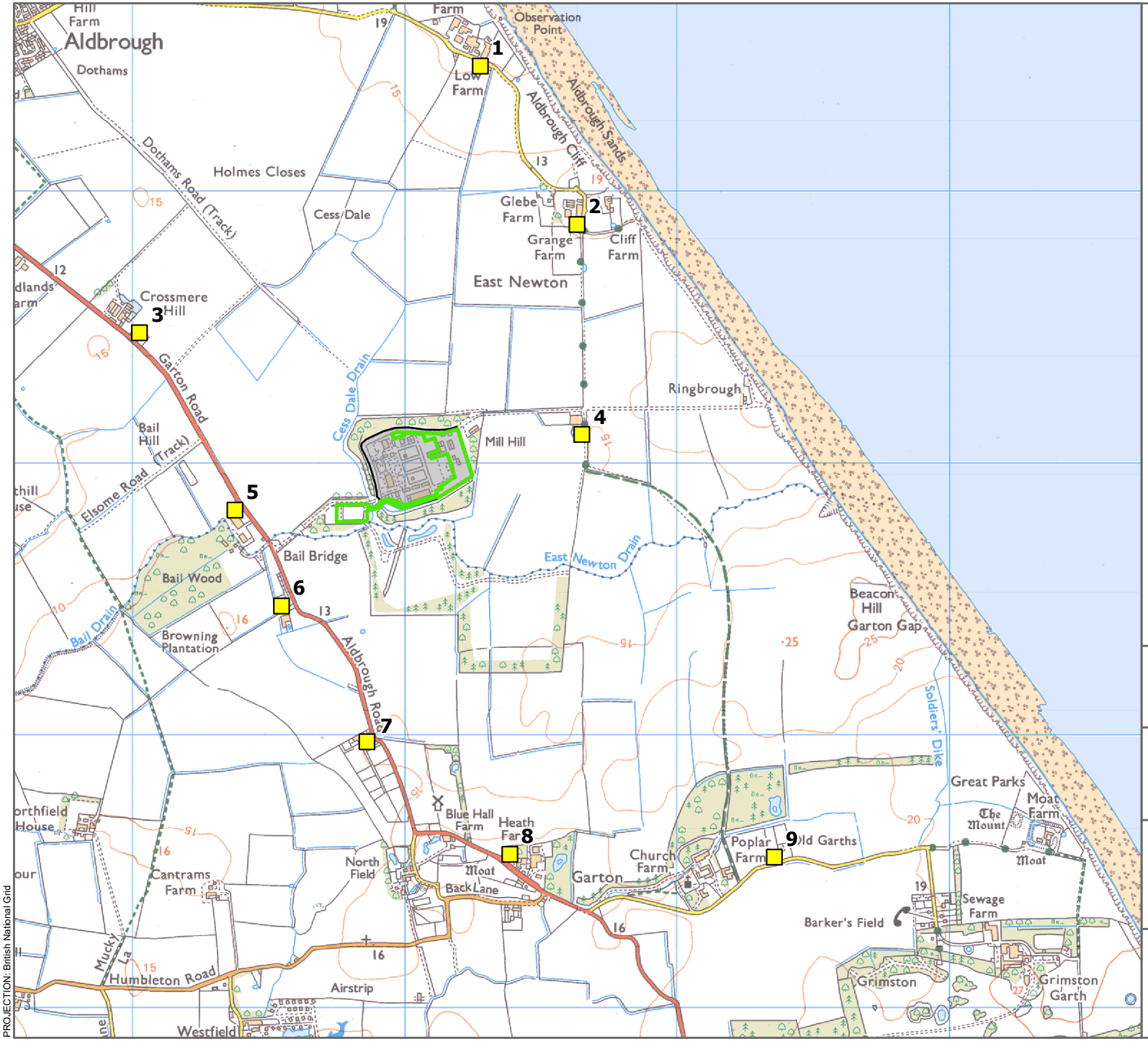
1.3 RELEVANT SECTOR GUIDANCE

British Standard BS 4142:2014+A1:2019[2] Methods for rating and assessing industrial and commercial sound provides the method of assessing the impact of a source of industrial sound from the Site.

This NMP has been written with reference to the notes within the template NMP provided and gov.uk guidance on Noise and vibration management: environmental permits[3]

The noise control and mitigation measures in Section 3 of the NMP are informed by indicative Best Available Techniques.

[2] British Standards Institution. BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. s.l. : BSI, 2019. ISBN 978 0 539 02069 4.
[3] Noise and vibration management: environmental permits - GOV.UK



SCALE: See Scale Bar | VERSION: A04

SIZE: A4 | DRAWN: MC

PROJECT: 0653313 | CHECKED: TR

DATE: 11/04/2025 | APPROVED: ROO

Figure 1
Noise Sensitive Receptors

PROJECTION: British National Grid

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Ordnance Survey 0100031673

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2. RECEPTORS

2.1 RECEPTOR LIST

TABLE 2.1 RECEPTOR LIST

Receptor Reference	Description	Approximate Distance to Site (m)[a]
R1	Low Farm House Cottage	1,300
R2	Grange Farm Cottage	840
R3	Crossmere Hill Bungalow	1,100
R4	Ringborough Farm West	400
R5	Springfield Farm	700
R6	Bail View Farm	700
R7	Millview Stables	930
R8	The Bungalow	1,300
R9	Church Farm Cottage	1,800

Notes:
[a] Approximate distance to areas of the Site containing plant items that produce the highest noise emissions.

3. CONTROL MEASURES AND PROCESS MONITORING

3.1 RISK ASSESSMENT

The Noise Impact Assessment[1] details the modelled noise levels and the exceedance of noise over the background sound level for each noise sensitive receptor.

The severity of noise impact as well as the likelihood of the impact occurring has been considered for normal and abnormal situations, as follows:

- Noise from normal operation of the Site is expected to arise when operating in either power plant mode or electrolyser mode. The Site may operate during the day and night with power plant mode operating according to grid demand. When in power plant mode, the majority of equipment associated with the electrolyser will not operate and vice versa.
- No abnormal operations are expected which would generate more noise than normal operations. Maintenance events are likely to occur infrequently. During maintenance, the plant would be stopped, which would reduce noise emissions. As such, no additional controls are considered necessary to manage this risk.

It is considered very unlikely that serious noise pollution will occur from day-to-day operations with the adoption of the control, monitoring and management measures set out in the remaining sections of this document.

Elevated noise levels may be generated during emergency situations, such as an emergency shutdown, during which flaring may occur. Whilst elevated noise emissions may be noticeable at receptor locations during these instances, they are however expected to be brief (1-2 hours)

and uncommon (isolated cases). As such, it is unlikely that these instances will result in significant noise pollution.

3.2 CONTROL MEASURES

The following specific measures will be taken to minimise noise pollution:

- Detailed noise modelling will be carried out on the final design to confirm that the fixed plant is not predicted to lead to significant noise pollution. This will be used to inform the procurement of equipment. During procurement, test data for fixed plant and building elements will be reviewed to confirm that the level of noise from each item of significant noise-emitting equipment is either no higher than the level included in the noise model or, taken in combination, would not lead to significant noise pollution.
- Plant items will be set to operate only when required, to reduce the duration and frequency of the noise emissions.
- Regular scheduled maintenance checks will be carried out to assess the condition of the equipment, check for changes in noise outputs and to ensure efficient operation (e.g. lubricating parts as required etc.).
- Barriers will be installed around transformers and fans to acoustically screen noise emissions, as required.
- Where possible, plant items will be housed within buildings to contain noise emissions within the structure.
- Acoustic mitigation or low noise versions of equipment will be provided for all key noise sources as necessary. Details of the types of mitigation measures to be employed will be finalised during detailed design, but are likely to include the following:
    - The OCGT, generator, compressors and Selective Catalytic Reduction (SCR) fan blower motors will be contained within acoustic enclosures.
    - Silencers will be fitted to the O_2 vents and the OCGT stack.
    - Ventilation ducts and pipework will be acoustically lagged. Acoustic louvres will be fitted to the duct ends.

In addition, the following measures will be taken, where relevant and practicable to minimise noise pollution:

i. Siting and use of equipment - The careful placing of noisy equipment away from noise sensitive receptors as far as practicable. This also includes the correct orientation of equipment where plant is known to emit noise strongly in a particular direction. Plant or machines that have an intermittent use are shut down when not in use.

ii. Substitution – Where practicable, when equipment is being replaced, the quietest available fit for purpose plant will be considered E.g. replacing older site plant with modern quieter designs.

iii. Maintenance – Increases in plant noise are often indicative of future mechanical failure, as such, all relevant plant will be regularly and effectively maintained by trained personnel. This will reduce the risk of mechanical failure as well as noise increases.

iv. Training – Site staff will be trained to increase their awareness of noise, in particular in relation to:

a) the proper use and maintenance of plant and equipment;
b) the positioning of mobile machinery to reduce the impact of noise emissions on sensitive receptors;
c) the avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment; and
d) awareness of the Health and Safety at Work Regulations.

v. Modification to existing plant and equipment – where an increase in noise associated with existing plant and equipment is identified by site staff, then modifications or the application of improved sound reduction methods will be implemented, where practicable.

vi. Local enclosures – if required and safe and practicable, new equipment could be housed within a partial or full acoustic enclosure.

vii. Screening – if required and practicable, the use of screening methods could be employed to reduce noise from either new equipment or as a result of any changes to the methods of operating the site e.g. significant phase changes. As screening is a complex issue, suitably qualified persons will be employed to advise on these issues.

3.3 MONITORING

The purpose of the noise monitoring is to demonstrate to the EA that the Site will be operated in such a manner as to minimise the noise impact at nearby noise-sensitive receptors. The following monitoring and management measures will be carried out to minimise significant noise pollution from the Site.

A commissioning survey and assessment will be carried out in accordance with BS 4142, to demonstrate that noise from the site would not lead to significant noise pollution. The process is detailed below:

- Noise measurements will be carried out at positions representative of the noise sensitive receptors likely to be worst affected by noise from the Site.
- If significant sources of extraneous noise are present, further noise measurements may be necessary to minimise the influence of extraneous noise, e.g., measurements carried out at night or monitoring close to equipment followed by predicting noise at receptors.
- The results will be assessed in accordance with BS 4142. The assessment will consider factors such as: the difference between the off-site noise from the site and the existing background sound level, the nature of the noise being generated, its frequency, duration and the time of day at which it occurs.
- Should significant noise pollution (or the potential to cause pollution) be identified from the assessment, then an investigation will be carried out to identify the cause and mitigation measures to be adopted. Full details of the assessment and evidence of mitigation measures will be documented in a noise report and submitted to the relevant authority.
- The survey and assessment will be conducted by a suitably qualified acoustics specialist.

Noise-related incidents and complaints received during the lifetime of the permit will be reviewed on a case-by-case basis to determine if additional noise monitoring is warranted.

Additionally, regular checks of plant items and noise control equipment (i.e., enclosures, louvres, attenuators, lagging) will be carried out by competent site personnel to ensure that equipment

has been appropriately maintained. This includes visual inspections and listening for any changes to the acoustic features, e.g., new tones, rattling, impulsive sounds etc. If significant changes to plant acoustic features are identified, simple remedial action will be taken in the first instance to try and resolve the issue (e.g., securing metal plates, lubricating mechanical parts, repairing lagging). It should be noted that changes in plant acoustic features do not always result in significant changes to the cumulative plant noise emissions therefore these instances will be reviewed on a case-by-case basis to determine if a more detailed investigation is deemed necessary.

4. COMPLAINTS PROCEDURE

The Site will develop a site-specific complaints procedure that will include measures to deal with complaints including the following;

- Receipt of complaint
- Recording the complaint
- Investigation of the complaint
- Contact with the complainant(s) and other external parties
- Post investigation
- Reporting
- Records

A copy of the existing AGS procedure for handling complaints is provided in Appendix A.

APPENDIX A AGS HANDLING COMPLAINTS PROCEDURE

Applies to: **Gas Storage**	**Handling Complaints**	**WI-UGGS-SHE-001-005**
Classification: **Internal**	Uncontrolled if printed	Rev: 1.04

The author / owner of this document is:	**This document has been approved for Issue by:**	**Date of Issue:**	**Review Date:**
C Ellerby	M Gillatt	October 2022	October 2025

Summary

Why do we need this Instruction?

This document describes how to deal with a complaint received from the general public regarding SSE's Gas Storage sites. Effective management of external complaints provides opportunities to improve performance through preventive actions and helps to maintain the sites' position as a good neighbour in the local community.

Scope, Deviation and Review

Scope	This Work Instruction shall be applied to Gas Storage.
Deviation	Deviations from this Instruction shall be agreed in writing with the Director of Gas Storage.
Review	The SHE Manager shall review the working and current applicability of this instruction every three years as a minimum.

Definitions

The following are definitions adopted by Gas Storage in addition to those in REF-GEN-SHE-001-102:

N/A

Process

Requirements

1. Receipt of the Complaint

1.1. Individuals receiving telephoned complaints shall record them on:

- Part A of Complaint Record Form FO-UGGS-SHE-001-005-001; or
- The SEARS system

1.2. They shall inform the caller that action will be taken and that they should expect a call within the hour (do not provide the Control Room number to the public).

1.3. They shall provide details of the complaint to the Duty Production Engineer, who shall:

- Evaluate it;
- Complete Part B of the Complaints Form or add further details to the

SEARS report as appropriate; and

- Arrange for the complaint to be dealt with.

1.4. Individuals receiving written (letter or e-mail) complaints shall forward them to the Operations Manager, who shall:

- Evaluate the complaint;
- Input the details onto a copy of the Complaints Form or into the SEARS system; and
- Arrange for the complaint to be dealt with.

1.5. In the event of a complainant arriving at the site to register a complaint in person:

- No access should be allowed to the site without the prior permission of the Duty Production Engineer;
- The complainant should be put in contact with the Duty Production Engineer.

1.6. Regardless of the complainant's demeanour or the nature of the complaint, the complainant should be dealt with at all times in a courteous and professional manner.

2. Recording the Complaint

2.1. The person receiving the complaint shall record as many of the following details as possible on **Part A** of the Complaints Form or on the SEAR:

- The name of the complainant;
- The address of the complainant;
- The telephone number of the complainant (if applicable);
- The time and date when the complaint was received;
- Whether the complaint was made by telephone, by letter, by e-mail, or in person;
- A full description of the nature of the complaint; which should include:
  - The duration of the alleged complaint; and
  - The location of the complainant(s) at the time of the alleged complaint.

2.2. The person receiving the complaint shall forward it to the Duty Production Engineer or Operations Manager as identified above, who shall complete **Part B** of the Complaints Form or add the following information into SEARs:

- The wind speed and direction/weather conditions at the time of the alleged complaint;
- The operating status of the plant and any problems that may be the potential cause of the complaint;
- The reason causing the complaint (if known);

- Whether it was possible to rectify the complaint and if so the action taken and time of complaint resolved;
- Time of return call to the complainant;
- Record of the call.

2.3. If further action is required, they shall state the name of the person who is to resolve the complaint on the form and inform them of the requirements.

2.4. They shall forward all complaints to the Operations Manager (or in their absence, the Director of Gas Storage) for information.

2.5. If the complaint requires further action, they shall complete **Part C** of the Complaints Form or add the following information into the SEARs system.

- The actions taken by the person resolving the complaint;
- The close out date;
- Confirmation by the person resolving the complaint that it has been resolved.

2.6. For complaints recorded on the Complaint Form, the Director of Gas Storage or nominated deputy shall sign **Part D** to confirm that the complaint has been resolved.

2.7. For complaints recorded on the SEARS system, the person undertaking the investigation shall inform the Director of Gas Storage or nominated deputy when the SEAR investigation is raised and when it is closed out to allow them to confirm that it has been resolved.

2.8. All completed complaint forms shall be filed by the Operations Manager.

3. Investigation of Complaint

3.1. The Duty Production Engineer shall:

- Immediately investigate the complaint;
- Take steps to identify and, where practicable, address the cause of the complaint as soon as possible;
- Record details in the Shift Log of:
  - The immediate action taken to address the cause of the complaint (including any contact with the complainant);
  - Any further actions to be taken or checks to be carried out (including any contact with the complainant).

4. Contact with the Complainant(s) and Other External Parties

4.1. The Operations Manager should arrange for a visit to take place to the complainant:

- In cases where the source of the complaint is not obvious; or
- Where required to obtain evidence.

4.2. "Feedback" contact with the complainant should be undertaken as judged necessary to reassure the complainant or to demonstrate the site's concern about such reports.

4.3. At no time during or subsequent to the investigations should any verbal or written statement be made by any member of SSE Hornsea Ltd staff that could be construed as an admission of liability.

4.4. Complainants insisting on making a claim for damage should be advised to do so in writing to the Director of Gas Storage.

5. Post Investigation

5.1. The relevant department for the complaint will:

- Evaluate the investigation findings with the Operations Manager; and
- Ensure that all corrective/preventive actions arising from the investigation are entered onto the Complaints Form or SEARs record.

5.2. The Director of Gas Storage or nominated deputy shall ensure that the corrective and/or preventive actions identified are addressed.

6. Reporting

6.1. Suspected regulatory breaches shall be reported immediately to the Director of Gas Storage or nominated deputy. Any subsequent reporting and notification requirements under statutory provisions or company policy will be determined by the SHE Manager and Director of Gas Storage.

7. Records

7.1. Operations Managers shall hold completed copies of the Complaints Form in a folder at each location.

Recommendations	• None

Accountabilities	
Intent	To define roles and responsibilities to help ensure that individuals understand the roles required and their involvement to ensure compliance with this instruction.
Requirements	The **Director of Gas Storage** is responsible for: • The correct implementation of this instruction; • Reviewing the handling of complaints dealt with through this instruction and initiating any further action necessary such as improvements to instructions. **Operations Managers** are responsible for:

- Initiating any further action necessary in response to complaints such as statutory reporting.

Duty Production Engineers are responsible for:

- The immediate investigation of complaints and taking any necessary actions to validate and resolve these.

All personnel are responsible for:

- Dealing with and gathering details from complainants who contact the site in person or by telephone;
- Recording details of complaints and passing these to the Duty Production Engineer without delay.

Reference

Key references required to follow this Instruction:

N/A

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Ireland
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Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
The Netherlands
New Zealand
Peru
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Tanzania
Thailand
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US
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ERM's London Office

2nd Floor Exchequer Court
33 St Mary Axe
London
EC3A 8AA

T +44 (0) 20 3206 5200

www.erm.com