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STATKRAFT

SWANSEA GREENER GRID PARK

NOISE ASSESSMENT REPORT

FEBRUARY 2023

DATE ISSUED: FEBRUARY 2023
JOB NUMBER: ST19905
REPORT NUMBER: 001

STATKRAFT

SWANSEA GREEN GRID PARK

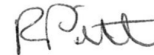
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PREPARED BY:

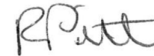
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CONTENTS

1	INTRODUCTION	1
2	ASSESSMENT METHODOLOGY	2
3	NOISE SURVEY	4
4	ASSUMPTIONS, LIMITATIONS AND UNCERTAINTY	6
5	NOISE IMPACT ASSESMENT	7
6	COMPLIANCE WITH AGREE NOISE LIMITS	13
7	CONCLUSIONS	14

APPENDICES

Appendix A Policy, Standards and Legislation

DRAWINGS

ST19905-001 Noise Monitoring Location Plan
Figure 1 Daytime Noise Contour Plan
Figure 2 Night-time Noise Contour Plot

1 INTRODUCTION

- 1.1.1 Wardell Armstrong LLP was commissioned by Statkraft to undertake a noise assessment to accompany a full planning application for a proposed Greener Grid Park, on land West of Rhydypany Road, Morriston, Swansea, which will be referred to as 'the site' for the rest of the report. The proposed site location is shown on drawing number ST19905-001. The proposed site layout is shown on drawings submitted as part of this application.
- 1.1.2 A noise assessment was produced by Arcus in 2021 as part of the original planning application for the proposed development. This assessment will update the original assessment following amendments to the proposed layout.
- 1.1.3 The proposed development will include energy equipment which will emit noise.
- 1.1.4 The site is located in a rural setting west of Rhydypany Road, Morriston, Swansea and is encompassed by a mixture of open land and agricultural land. To the north of the site lies open land with residential dwellings approximately 410m beyond. To the east of the site lies open land, wooded areas and solar farms with a residential dwelling approximately 705m beyond. Approximately 345m to the south of the site lie residential dwellings, separated from the site by farmland and open land. To the west of the site lies the existing Swansea North Substation and Felindre National Grid station. Beyond these are further residential properties, located 500m from the site.
- 1.1.5 This report assesses the potential impacts of noise from the site on existing sensitive receptors in accordance with current planning policy and guidelines.

2 ASSESSMENT METHODOLOGY

2.1 Consultation and Scope of Works

2.1.1 The scope of this assessment comprises a consideration of any potential noise impacts associated with the site, at identified Existing Sensitive Receptors (ESR).

2.1.2 Email correspondence was undertaken with Swansea Council (SC) on the 16th of November 2022 to agree the proposed methodology and scope of the noise assessment. It was proposed that the background noise survey data and proposed noise limits used for the original assessment could be used for this revised assessment. A response was received from Tom Sohall, Pollution Control Officer at SC on the 9th December 2022 confirming that this approach was acceptable.

2.1.3 The noise survey is discussed further in Section 3 of this report.

2.1.4 The noise limits and receptors as taken from the Arcus Noise Assessment are as described in Table 1 below. The receptors are also shown on drawing number ST19905-001.

Table 1: Existing Noise Sensitive Receptor Locations				
Receptor		Noise Limit dB(A)		Bearing from Site
		Daytime	Night-time	
ESR1	Abergelli Farm	40	37	North
ESR2	Maes-eglwys	43	38	South
ESR3	Lletty'r Morfil Farm	40	40	West

2.2 Noise Model

2.2.1 Noise Modelling using SoundPLAN version 8.2 (SPv8.2) has been undertaken to predict the sound propagation emanating from the site.

2.3 Assessment Methodology

2.3.1 Any potential impacts on noise sensitive areas have been assessed with reference to the following:

- Planning Policy Wales Dec 2021
- Technical Advice note (TAN) (Wales) 11, Noise – October 1997
- Planning Practice Guidance (Noise), 2019

- British Standard 8233:2014 Guidance on Sound Insulation and noise reduction for buildings
- British Standard 4142:2014 +A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound (BS4142)

2.3.2 Further details of Legislation, Policy and Guidance documents is found in Appendix A.

3 NOISE SURVEY

3.1.1 In February 2018 a noise survey was carried out to inform the Environmental Impact Assessment of the Abergelli Power Station adjacent to this site. The noise survey data for that assessment, was used within the Arcus noise assessment for this development. As agreed with the EHO at SC, this data will therefore be used for this noise assessment which will accompany the application. Due to the rural nature of the locations and existing noise sources, it is considered unlikely that noise levels at the nearest receptors would have altered a great deal since 2018. Therefore, the monitoring undertaken is considered representative.

3.1.2 Unattended monitoring was carried out at the three monitoring locations (ML(s)) within the boundary of the nearest receptors, following agreement from the property owners.

3.1.3 Details of the monitoring are shown in Table 2 below.

Table 2: Noise Monitoring Locations				
Monitoring Locations	Grid Co-ordinates		Description of Location	On-site Observations
	Easting	Northing		
ML1	264946	201848	Abergelli, residential property north of the site	Bird song, dogs, distant M4 traffic and rotary engines were audible. Low level plant hum also audible at night.
ML2	265439	200692	Maes-eglwys, residential property located south of the site	M4 traffic and rotary engine noise low but audible. Low level plant hum and distant traffic noise audible at night.
ML3	264751	201059	Letty'r Morfil Farm, located west of the site	Audible farm noise (dogs and hens), audible M4 traffic, rotary engines and low level plant hum.

3.1.4 ML1 was selected as a representative location of ESR1 (Abergelli Farm) as it is located to the north of the site, adjacent to the ESR. This monitoring location will also give an indication of noise levels at other properties along the unnamed lane that runs to the north of the site.

3.1.5 ML2 was selected as it represents ESR2 as it located near to the isolated farm at Maes-eglwys.

- 3.1.6 ML3 was selected to represent ESR3 as it is located along the unnamed lane that runs off the B4489 to Lletty'r Morfil Farm.
- 3.1.7 Although it is not stated within the Arcus report, it is assumed that the monitoring was undertaken with suitable equipment and during suitable weather conditions.
- 3.1.8 For the purpose of this assessment day and night-time hours are considered to be between 0700 and 2300 hours and 2300 and 0700 hours respectively.
- 3.1.9 A-weighted¹ L₉₀² noise levels were measured to comply with the requirements of BS4142.

¹ A' Weighting An electronic filter in a sound level meter which mimics the human ear's response to sounds at different frequencies under defined conditions

² L₉₀ The noise level which is exceeded for 90% of the measurement period.

4 ASSUMPTIONS, LIMITATIONS AND UNCERTAINTY

4.1 Introduction

4.1.1 This assessment is affected by the following assumptions and limitations.

4.2 Assumptions

- The equipment associated with the proposed development will operate at 100% of its operating power, over a 24-hour period i.e., worst case.
- The cooling fans will operate at full speed during periods of peak operation and high temperatures.
- The equipment should include vibration dampeners to eliminate any critical frequencies and therefore any tonal characteristics.
- The noise specifications for each piece of equipment have been extracted from the Arcus report are assumed to be up to date and accurate.
- The equipment installed will be serviced as instructed.

4.3 Limitations

4.3.1 Monitoring was not carried out for this assessment, rather it was decided that using data collected previously at the site, during monitoring undertaken in 2018, would be suitable for this assessment. This methodology was agreed with Swansea Council.

4.4 Uncertainty

4.4.1 To reduce the uncertainty within this assessment, as confirmed in the Abergelli Power Station Environmental Statement, noise monitoring was undertaken inline with BS7445-2:1991 guidelines.

5 NOISE IMPACT ASSESMENT

5.1 Introduction

5.1.1 This section of the report sets out the assessment of noise emission from the site, and the potential impacts they have on the identified receptors.

5.2 Noise Model Set-up

5.2.1 The assessment of sound propagation from the site and its potential noise impacts on ESRs, has been undertaken using SoundPLAN version 8.2 (SPv8.2).

5.2.2 SPv8.2 software uses geographical information to create a model of the study area on which to generate noise contours. This includes intervening objects such as buildings and topography, that affect the propagation path.

5.2.3 SPv8.2 models use the noise prediction methodology set out in ISO 9613-2:1996 'Attenuation of sound during propagation outdoors'. The contours show the noise levels emanating from the site as a function of distance.

5.2.4 The model has an assumed temperature of 10°C, 70% humidity and 1013.3 mbar air pressure. The dominant ground covering is soft therefore the ground absorption has been set to 0.5 whereby (0 = hard and 1 = completely absorbent).

5.3 Identification of Proposed Noise Sources and Specifications

5.3.1 Table 3 displays the noise sources which have been inputted into the model. The information has been gathered from the Arcus report and additional information provided by Statkraft.

Table 3: Plant Emission Data										
Octave Band Frequency	Sound Power Level, dB, L _{WA}									Source type
	63	125	250	500	1k	2k	4k	8K	Total	
Energy Management Module Cooling Plant Array x 3	63	80	89	89	87	88	85	82	95	Point
Transformers x 3	67	82	88	94	91	87	82	63	97	Point
Energy Management Modules x 6	-	-	-	90	-	-	-	-	90	Point

5.3.2 The Energy Management Modules will be housed within buildings. The acoustic performance of the building is detailed n Table 4 below.

Table 4: Building Specification							
Octave Band Frequency	Sound Power Level, dB, L_{WA}						
	125	250	500	1k	2k	4k	Total
Sides: dual skin 1mm corrugated steel with mineral wool core	20	29	42	48	56	57	42
Roof: dual skin 1mm corrugated steel	18	23	33	43	48	39	36

5.3.3 The noise emissions and specifications in Table 3 and 4 describe the noise sources which have been included in the noise model. The locations have been determined using site location plans provided by Statkraft submitted as part of this application.

5.3.4 If the operations of the proposed sources are found to differ greatly from those outlined above at a later design stage, a supplementary noise assessment will be required to account for those changes.

5.4 BS4142 Assessment

Identification of the Specific Sound

5.4.1 Noise modelling using SPv8.2 has been used to calculate the noise levels at the identified ESRs, using the details outlined in Table 3 and 4.

5.4.2 In order to assess noise levels within rooms most likely to be in use at one time, noise modelling has been undertaken to assess noise levels during the daytime at 1.5m from ground level and during the night-time at 4m from ground level.

5.4.3 The predicted specific sound levels during the day and night-time periods at the identified ESRs are presented below in Table 5. The corresponding noise contour plots are shown on Figure 1 and 2.

Table 5: Predicted Specific Sound Level at the Existing Sensitive Receptors		
Receptor	Daytime L_{Aeq,T} (dB)	Night-time L_{Aeq,T} (dB)
ESR1	37	37
ESR2	37	37
ESR3	37	37

Identification of the Background Sound Level

5.4.4 Section 8 of BS4142 provides guidance on the selection of the background sound to be used in the assessment. BS4142 states that the background sound levels used for

the assessment should be representative of the period being assessed (i.e., day and night-time periods), and that there is no “single” background sound level.

- 5.4.5 As agreed with SC, the background sound levels included within the Arcus report have been used for this assessment.
- 5.4.6 Table 6 below presents a summary of the background sound levels to be used within the assessment.

Table 6: Average Measured Background Sound Levels		
Noise Monitoring Location	Daytime $L_{A90,T}$ (dB)	Night-time $L_{A90,T}$ (dB)
ML1 – ESR1 Abergelli Farm	40	36
ML2 – ESR2 Maes-eglwys	43	38
ML3 – ESR3 Llety’r Morfil Farm	36	35

Application of Weighting for Characteristics of Specific Sound

- 5.5 BS4142 includes guidance on the application of additional weightings which include tonality, impulsivity or intermittency. Where such features are present at the assessment location, characteristic corrections to the specific sound should be added to obtain the rating level.
- 5.6 The equipment should include vibration dampeners to eliminate any critical frequencies and therefore any tonal characteristics. In addition to this, due to the low noise levels, any tonal qualities would be unlikely to be perceptible at the receptors. Therefore, no penalty has been included for tonal features.
- 5.7 The client has confirmed that there will be no defined on/off periods for the equipment. It is therefore considered that no penalty should be included to adjust for intermittency.

BS4142 Assessment - Daytime

- 5.7.1 In accordance with BS4142, the noise rating levels for the noise sources associated with the proposed development, as received at the existing sensitive receptors, have been compared with the agreed noise limits as described in Table 1. The figures are shown in Table 7.

Table 7: BS4142 Assessment of the Noise at ESRs in the vicinity of Proposed Development during the Daytime – (Figures in dB(A))			
Description	Existing Sensitive Receptor Locations		
	ESR1	ESR2	ESR3
	Daytime		
Specific Sound Level i.e. noise level of the operational activities (including distance correction), dB $L_{Aeq, 1hour}$	32	32	32
Acoustic Feature Correction, dB	0	0	0
Rating Level, dB	32	32	32
Background Noise level Range for Period $L_{A90, T}$	40	43	36
Agreed Noise limit dB	40	43	40
Excess of rating over Background Noise level	-8	-11	-4

5.7.2 The results of the BS4142 assessment indicate that there will be no exceedance of noise from the proposed development over background noise levels at any of the receptors.

BS4142 Assessment – Night-time

5.7.3 In accordance with BS4142, the noise rating levels for the noise sources associated with the proposed development, as received at the existing sensitive receptors, have been compared with the agreed noise limits as described in Table 1. The figures are shown in Table 8.

Table 8: BS4142 Assessment of the Noise at ESRs in the vicinity of Proposed Development during the Night-time – (Figures in dB(A))			
Description	Existing Sensitive Receptor Locations		
	ESR1	ESR2	ESR3
	Night-time		
Specific Sound Level i.e. noise level of the operational activities (including distance correction), dB $L_{Aeq, 1hour}$	32	32	32
Acoustic Feature Correction, dB	0	0	0
Rating Level, dB	32	32	32
Background Noise level Range for Period $L_{A90, T}$	36	38	35
Agreed Noise limit dB	37	38	40

Excess of rating over Background level	-4	-6	-3
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5.7.4 The results of the BS4142 assessment indicate that there will be no exceedance of noise from the proposed development over background noise levels at any of the receptors.

BS4142 Context Assessment

5.7.5 BS4142:2014 States; “The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound sources exceeds the background sound level and the context in which the sound occurs”.

5.7.6 The first requirement of this statement has been determined within the noise impact assessment section above. To determine the context in which the proposed industrial sound will reside, three factors must be considered, these are;

- The absolute level of sound;
- The character and level of the residual sound compared to the character and level of the specific sound and,
- The sensitivity of the receptor.

Absolute level of Sound

5.7.7 The impact of a given difference between rating level and background noise level will depend upon whether the residual sound level is low or high.

5.7.8 The background and rating levels are low. The absolute level of noise, including the noise from the proposed development, is therefore more relevant than the margin by which the rating level exceeds the background. This is especially true at night. The absolute level of noise will remain unchanged due to the low noise levels associated with the proposed development and it is therefore unlikely to make the existing noise impacts any worse.

Character and Level of Residual Sound

5.7.9 The proposed development is in a rural area and dominated by light road traffic. The noise from the proposed development is industrial in nature and could therefore alter the character of noise at the ESRs, however as the predicted noise levels are so low, this is unlikely to happen.

5.7.10 The existing residual sound level is relatively low as is the rating level. It is unlikely that the noise from the proposed development would alter the residual noise levels, which would suggest that the impact at the receptors could be lower than indicated in Tables 7 and 8.

Sensitivity of Receptor and Existing Acoustic Conditions

5.7.11 The existing noise sensitive receptors are residential in nature and therefore the sensitivity of the receptors is high.

5.7.12 With regard to pertinent factors to be taken into consideration, Section 11 of BS4142 states;

“The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

- i) facade insulation treatment;*
- ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and*
- iii) acoustic screening.”*

5.7.13 It is assumed that the receptors will not have the benefit of alternative ventilation if windows need to remain closed. As such the BS4142 assessment remains unchanged.

Summary of the BS4142 Assessment

5.7.14 A BS4142 assessment has been undertaken to assess the potential noise impact from the proposed development at receptors.

5.7.15 The BS4142 assessment shows that noise from the proposed development would fall below background noise levels at all receptors during the daytime and night-time. When considering the BS4142 assessment and the context it is considered that the proposed development would have a low impact at all receptors.

5.7.16 Mitigation measures will therefore not be necessary to reduce noise levels from the proposed development.

6 COMPLIANCE WITH AGREED NOISE LIMITS

6.1.1 As noise limits have also been agreed, an assessment of the proposed development noise levels compared with the noise limits has been undertaken as shown in Table 9 below.

Table 9: Assessment of the Noise Limit Compliance						
	Daytime			Night-time		
	ESR1	ESR2	ESR3	ESR1	ESR2	ESR3
Noise rating Level	32	32	32	32	32	32
Noise limit	40	43	40	37	38	40
Exceedance of Noise Limit	-8	-11	-8	-5	-4	-8

6.1.2 Table 9 shows that the noise limits will not be exceeded at any receptor during the daytime or night-time. The assessment within Table 9 confirms that no mitigation will be required to reduce noise levels associated with the proposed development.

7 CONCLUSIONS

- 7.1.1 Wardell Armstrong has carried out a noise impact assessment to accompany the planning application process for the 24-hour operation of a proposed energy facility on land west of Rhydypany Road, Morriston, Swansea.
- 7.1.2 To establish baseline levels at existing sensitive receptors, noise data from the previous assessment prepared by Arcus has been used to determine noise levels during the daytime and night-time at the receptors.
- 7.1.3 Noise limits previously agreed for the original application have been used within the assessment.
- 7.1.4 Noise specification information has been gathered from the Arcus report and the client to determine the likely noise levels at the existing receptors from the proposed development. This report assesses the results of the noise survey carried out in accordance with BS4142 and the previously agreed noise.
- 7.1.5 When considering the results of the BS4142 assessment in the context of the site and its setting along with the proposed mitigation, the noise generated by proposed development will have a **Low** impact at existing sensitive receptors during the daytime and night-time. No mitigation is therefore required to reduce noise levels associated with the proposed development.
- 7.1.6 The report has concluded the proposed development will not exceed the agreed noise limits during the daytime and night-time at any receptors. This achieves the required noise levels as agreed with Swansea Council.

APPENDICES

Appendix A

Legislation, Policy and Guidance

Policy, Standards and Guidance

Appendix A

Planning Policy Wales

Planning Policy Wales (PPW) is the current planning policy guidance within Wales. The planning guidance defines the primary objective of the document in paragraph 1.2 as follows:

'...to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales...'

In particular reference to noise Paragraph 6.7.3 of the PPW states:

'Problematic forms of sound are generally experienced as noise pollution and can affect amenity and be prejudicial to health or a nuisance. Noise action plans drawn up by public bodies aim to prevent and reduce noise levels where necessary and preserve soundscape quality where it is good. Noise levels used to identify priority areas contained in noise actions plans are usually set quite high in order to focus resources on the most polluted areas and noise must meet a number of tests before it qualifies as a statutory nuisance. Lower levels of noise however, can still be annoying or disruptive and impact on amenity and as such should be protected through the planning process wherever necessary.'

Technical Advice Note 11: Noise (TAN 11)

TAN 11 is used to categorise noise levels for proposed residential developments. TAN 11 presents four noise exposure categories (NECs), ranging from A to D, where A represents the lowest noise levels, and D is for sites with higher noise levels. A breakdown of the NECs, and subsequent advice is provided below in Table 1 and 2.

Time	Noise Exposure Category			
	A	B	C	D
0700-2300	<55	55 - 63	63 - 72	>72
2300-0700 ⁽²⁾	<45	45 - 57	57 - 66	>66

Footnote

⁽¹⁾ **Noise levels:** the noise level(s) ($L_{Aeq,T}$) used when deciding the NEC of a site should be representative of typical conditions.

⁽²⁾ **Night-time noise levels (2300-0700):** sites where individual noise events regularly exceed $82dB_{LAmax}$ (S time weighting) several times in any hour should be treated as being in NEC C, regardless of the $L_{Aeq,8H}$ (except where the $L_{Aeq,8H}$ already puts the site in NEC D).

Table 2: Advice relating to noise exposure category		
NEC	Significance	Advice
A	Negligible	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as desirable.
B	Minor	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection.
C	Moderate	Planning permission should not normally be granted. Where it is considered that permission should be given, for example, because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
D	Major	Planning permission should normally be refused.

TAN 11 also states that:

“This note provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development.”

British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings

British Standard 8233 “Guidance on sound insulation and noise reduction for buildings” 2014, suggests the following guideline noise levels and states that they are based on guidelines issued by the World Health Organisation;

- 35 dB L_{Aeq} (16 hour) during the day time in noise sensitive rooms
- 30 dB L_{Aeq} (8 hour) during the night time in bedrooms
- 45 dB $L_{Amax,F}$ during the night time in bedrooms
- 50 dB L_{Aeq} (16 hour) desirable external noise levels for amenity space such as gardens and patios
- 55 dB L_{Aeq} (16 hour) upper guideline value which would be acceptable in noisier environments.

In addition, for internal noise levels it states;

“Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”

Furthermore, with regard to external noise, the Standard states;

“However, it is also recognised that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas,

such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited”.

British Standard 4142:2014 Methods for rating and assessing industrial and commercial sound (BS4142):

BS4142 is used to rate and assess sound of an industrial and/or commercial nature including:

- sound from industrial and manufacturing processes;
- sound from fixed installations which comprise mechanical and electrical plant and equipment;
- sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
- sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

The standard is applicable to the determination of the following levels at outdoor locations:

- rating levels for sources of sound of an industrial and/or commercial nature; and
- ambient, background and residual sound levels, for the purposes of:
 - 1) Investigating complaints;
 - 2) Assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature; and
 - 3) Assessing sound at proposed new dwellings or premises used for residential purposes.

The purpose of the BS4142 assessment procedure is to assess the significance of sound of an industrial and/or commercial nature.

BS4142 refers to noise from the industrial source as the ‘specific noise’ and this is the term used in this report to refer to noise which is predicted to occur due to activities associated with industrial noise. The ‘specific noise’ sources, of the existing industrial premises that have been observed are detailed in Section 3 of this report.

BS4142 assesses the significance of impacts by comparing the specific noise level to the background noise level (L_{A90}). Section 3 of this report provides details of the background noise survey undertaken.

Certain acoustic features can increase the significance of impacts over that expected from a simple comparison between the specific noise level and the background noise level. In particular, BS4142 identifies that the absolute level of sound, the character, and the residual sound and the sensitivity of receptor should all be taken into consideration. BS4142 includes allowances for a rating penalty to be added if it is found that the specific noise source contains a tone, impulse and/or other characteristic, or is expected to be present. The specific noise level along with any applicable correction is referred to as the 'rating level'.

The greater the increase between the rating level over the background noise level, the greater the magnitude of the impact. The assessment criteria given by BS4142 are as follows:

- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

During the daytime, BS4142 requires that noise levels are assessed over 1-hour periods. However, during the night-time, noise levels are required to be assessed over 15-minute periods.

Where the initial estimate of the impact needs to be modified due to context, BS4142 states that all pertinent factors should be taken into consideration, including:

- The absolute level of sound;
- The character and level of the residual sound compared to the character and level of the specific sound; and,
- The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

DRAWINGS



KEY

 SITE BOUNDARY

 MONITORING LOCATION

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
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CLIENT
 STATKRAFT, MORRISTON, SWANSEA

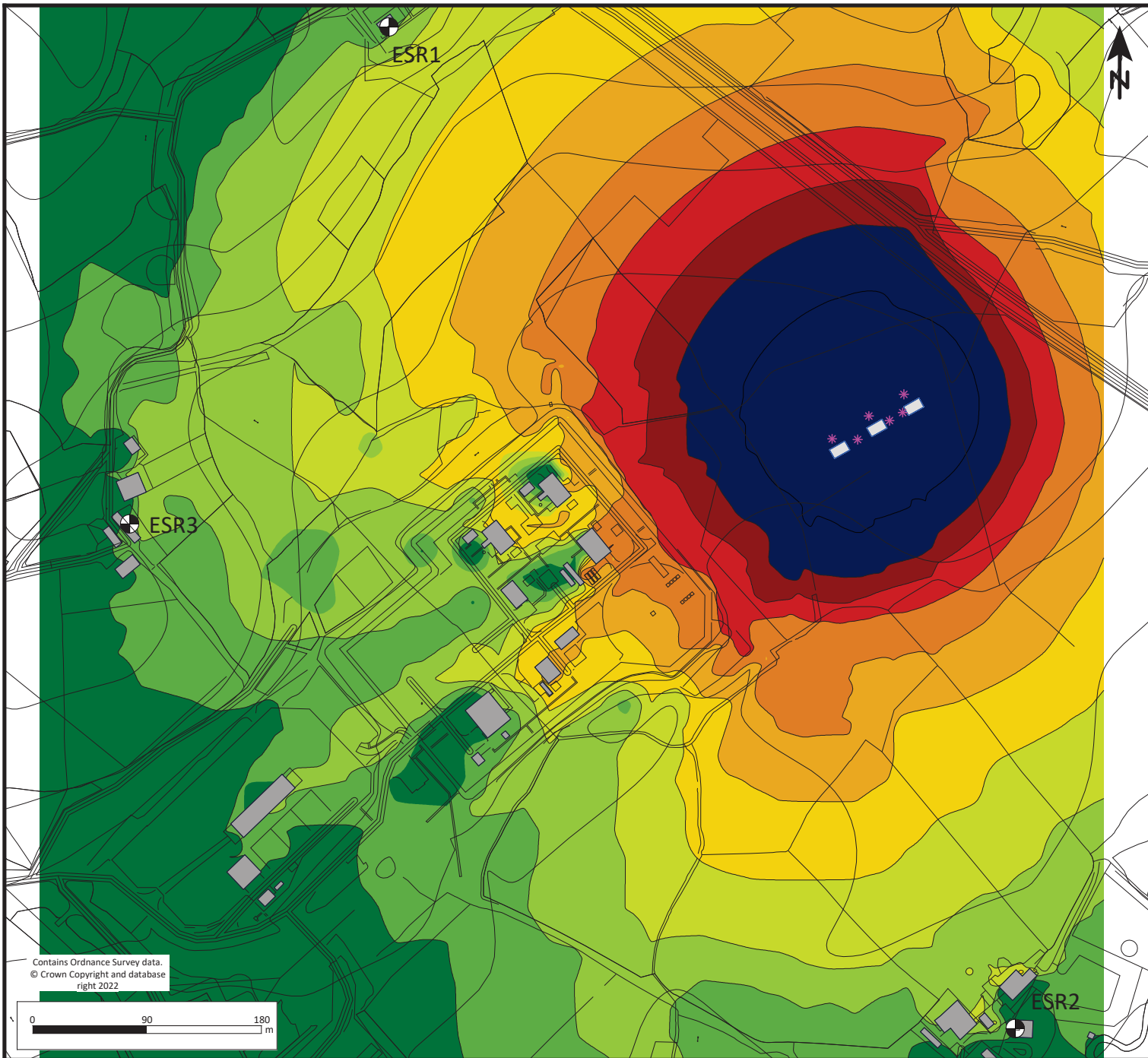
PROJECT
 LAND WEST OF RHYDYPANDY ROAD

DRAWING TITLE
 MONITORING LOCATION PLAN





DRG No	ST19905-001	REV	SUIT.
SIZE	A4	SCALE	1:10,000
		DATE	24-11-22
DRAWN BY	LK	CHECKED BY	IW
		APPROVED BY	RP



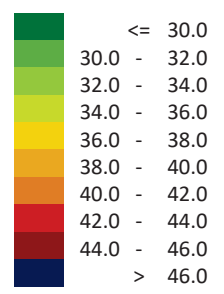
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Key

-  Energy Management Module Building
-  Existing Buildings
-  Transformers & Cooling Plant
-  Existing Sensitive Receptor

Daytime L_{Aeq} 1hour dB



CLIENT: DWD LLP

PROJECT: Starkraft Swansea

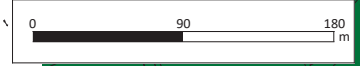
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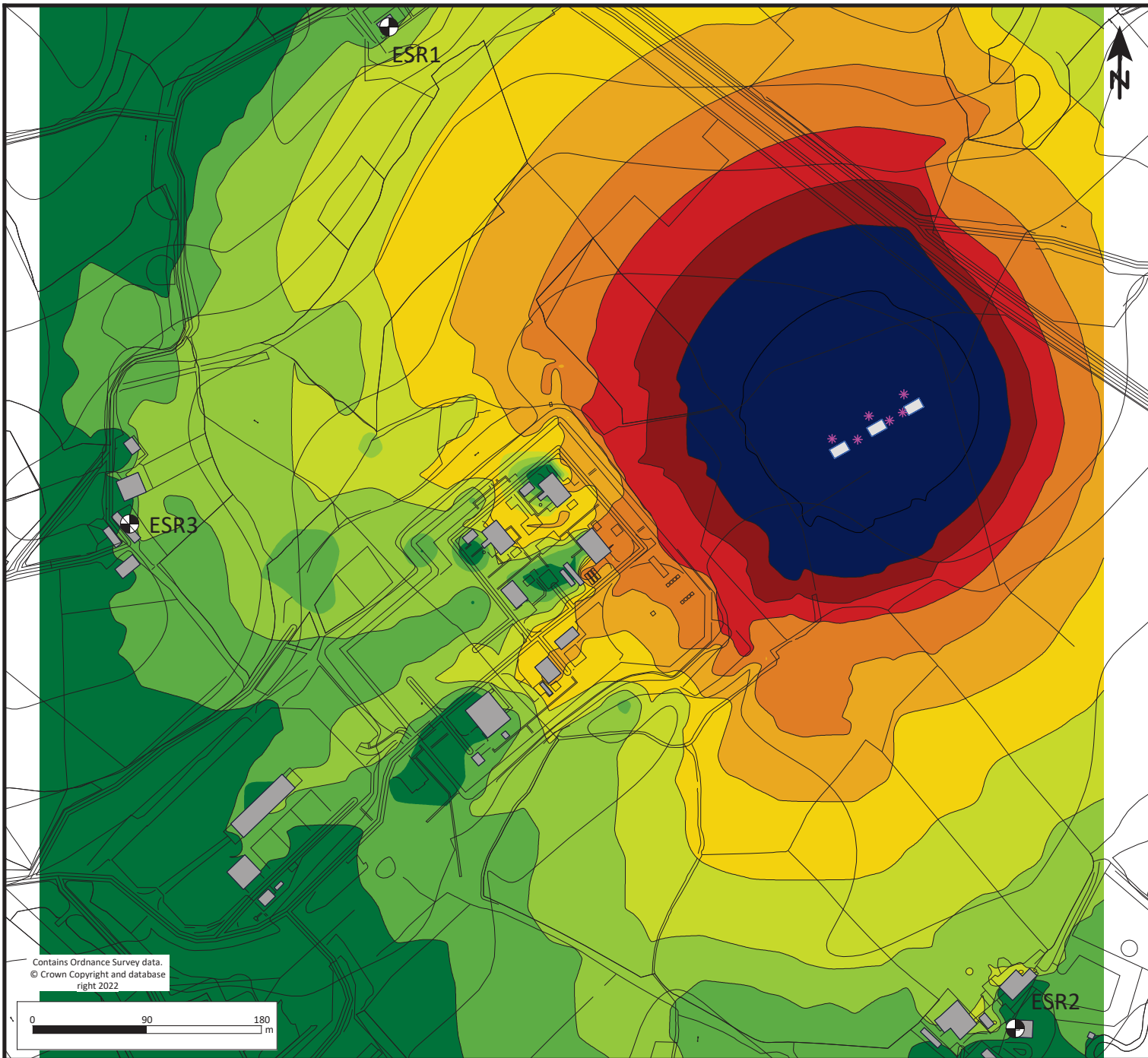
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DRG SIZE:	A3	SCALE:	1:3000	DATE:	09/02/2023
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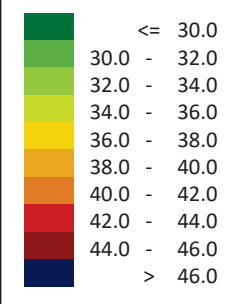




Key

-  Energy Management Module Building
-  Existing Buildings
-  Transformers & Cooling Plant
-  Existing Sensitive Receptor

Night-time L_{Aeq} 15 mins dB



CLIENT: DWD LLP

PROJECT: Starkraft Swansea

TITLE: Figure 2 - Night-time Noise Contour Plot

DRG NO:	Figure 2	REV:	A
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DRG SIZE:	A3	SCALE:	1:3000	DATE:	09/02/2023
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