

TECHNICAL APPENDIX 13.3: SOURCE NOISE LEVELS

CONTENTS



1.1 Source Noise Levels

Table 0-1 Equipment Sound Power Levels – Spittal to Peterhead and Eastern Green Link 3 HVDC Converters

Equipment	Quantity	Housing Arrangements	Sound Power Level (SWL) (dB(A))
Alternating Current (AC) Hall Heating Ventilation Air Conditioning (HVAC)	2	External	80
Air Exhaust HVAC	4	Internal	71
Air Intake Climate System Air Handling Units (AHU)	4	Internal	70
Air Intake HVAC System AHU	4	Internal	67
Chiller	14	Internal	4 @ 70, 4 @ 80, 2 @ 85, 4 @ 92
Climate System Overpressure Fresh Air Intake	4	Internal	2 @ 68, 2 @ 71
Climate System Fresh Air Reactivation	4	Internal	2 @ 57, 2 @ 60
Climate System Wet Air Outlet	8	Internal	4 @ 40, 4 @ 71
Cooler Bank	2	External	95
DC Hall AHU	8	External	80
Exhaust Air Outlet Climate System	4	Internal	71
Relay Building HVAC	3	External	2 @ 75, 1 @ 80
Storage Building HVAC	3	External	80
Transformers Fans	6	External	80
Transformers in Building	6 (across 2 buildings)	Internal	106
Filter Reactor	6 (across 2 buildings)	Internal	75
Converter Reactor	6 (across 2 buildings)	Internal	90

Table 0-2 Equipment Sound Power Levels – HVDC Switching Station

Equipment	Quantity	Housing Arrangements	SWL (dB(A))
Climate System inlet/outlet	20	Internal	67
Standby Diesel Generator	1	Internal	80.0
Auxiliary Transformer	2	Internal	73.0

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Table 0-3 Equipment Sound Power Levels – 400 kV AC Substation and 132 kV AC Substation

Equipment	Quantity	Housing Arrangements	SWL (dB(A))
Air Handling Units (AHU) – 400 kV	6	Internal	3 @ 75, 3 @ 85
AC Transformer – 400 kV	2	Internal	87.0
Standby Diesel Generators	1	Internal	65.0
Earthing Transformers	2	Internal	55.0
Control Room EVAC fans – 132 kV	2	External	65.8
Wet Area EVAC fans – 132 kV	2	External	78.0

Table 0-4 Equipment Sound Power Levels – Operations Depot Site

Equipment	Quantity	Housing Arrangements	SWL (dB(A))
Service Building HVAC inlet/outlet	2	External	81.0
Auxiliary Transformer	2	Internal	73.0
Standby Diesel Generator	1	Internal	80.0

TRANSMISSION

Table 0-5 Sound Reduction – Building Facades - 200mm Rockspan and Firemaster Ultima

Sound Insulation Prediction (v7.0.13)

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- Key No. 2517

Margin of error is generally within Rw +/- 3 dB

Job Name:

Job No.: Page No.: Notes:

Date: 30 Apr 20 Initials:tim ashley

File Name: insul



Rw 36 dB C -3 dB C_{tr} -5 dB

INSUL

System description

Panel 1 Outer layer: 1 x 200.0 mm Rockspan Ultima 200mm- (m=37.7 kg/m², fc=119690 Hz, Damping=0.01) Profile

frequency (Hz)	R(dB)	R(dB)
50	22	The second
63	23	23
80	25	
100	26	
125	27	27
160	29	200
200	30	
250	31	31
315	32	
400	33	
500	33	32
630	30	
800	24	
1000	36	28
1250	44	
1600	46	
2000	48	48
2500	49	
3150	51	
4000	53	53
5000	55	

