

# HORIZON

NUCLEAR POWER



## Wylfa Newydd Project

### Wireline Construction Visualisations

PINS Reference Number: EN010007

19 February 2019

Revision 1.0

Examination Deadline 6

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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# 1 Methodology for wireline construction visualisations

## 1.1 Introduction

- 1.1.1 Wireline construction visualisations have been prepared with reference to the guidelines set out in *Photography and photomontage in landscape and visual impact assessment (Advice Note 01/11)* [RD1]. The purpose of the wireline construction visualisations is to provide an indication of the effectiveness of landscape mounding during Main Construction of the Power Station. Wireline parameter envelopes have been used to indicate the minimum and maximum construction landform parameter, as well as the indicative operational landscape mounding design. The worst case parameter envelopes of the Power Station buildings and Site Campus accommodation blocks, and illustrative positions of cranes, are also shown. Therefore the wireline construction visualisations are only indicative.
- 1.1.2 All wireline construction visualisations show winter views for worst case visibility. The effectiveness of planting mitigation during construction has not been illustrated, in order to indicate the worst case without any early planting.
- 1.1.3 The wireline construction visualisations have been prepared to reflect the 'worst case' and using the best available information at the time of preparation to supplement the photomontages showing views of the Power Station during operation in appendix D10-8 of the Environmental Statement (ES) (photomontage views) [APP-199].
- 1.1.4 The viewpoint locations for the wireline construction visualisations have been selected to focus on views from the local communities in Cemaes and Tregale, to address comments received from the Isle of Anglesey County Council through the statement of common ground process and in the:
- meeting with the IACC on 17 October 2018;
  - visual section of chapter 17 of the IACCs Local Impact Report (LIR) [REP2-077]; and
  - IACC response to Examining Authority's First Round of Written Questions [REP2-153] FWQ7.0.2 (including the full response in appendix 2B [REP2-157]).
- 1.1.5 Table 1-1 sets out the selected viewpoints.
- 1.1.6 The numbering of the wireline construction visualisation viewpoints matches the relevant representative viewpoint numbers in appendix D10-4 of the ES (representative viewpoints) [APP-195], where the viewpoints are existing representative viewpoints. The numbering of new representative viewpoints is in accordance with the numbering set out in the supplementary community views assessment (appendix D10-A of the ES addendum) (WN0902-HZDCO-PAC-REP-00259). The numbering is therefore not continuous.

**Table 1-1 Wireline construction visualisation viewpoint selection**

Viewpoint requested by IACC	Corresponding wireline construction visualisation viewpoint number and name
<b>Cemaes</b>	
DCO ES Representative Viewpoint 16. (Refer to figure D10-16 [APP-237] for viewpoint location.)	<b>Viewpoint 16</b> Representative community view west from public footpath at western edge of Cemaes
DCO ES Illustrative Viewpoint F (adjusted to edge of Cemaes community). (Refer to figure D10-16 [APP-237] for viewpoint location.)	<b>Viewpoint 40</b> Representative community view west from public footpath on the edge of Cemaes
DCO ES Illustrative Viewpoint G (with minor adjustment). (Refer to figure D10-16 [APP-237] for viewpoint location.)	<b>Viewpoint 42</b> Representative community view north-west from the A5025 at the southern edge of Cemaes
<b>Tregele</b>	
DCO ES Representative Viewpoint 18. (Refer to figure D10-16 [APP-237] for viewpoint location.)	<b>Viewpoint 18</b> Representative community view from A5025 on western edge of Tregele

## 1.2 Viewpoint photographic survey

- 1.2.1 For details of how the baseline photographs have been recorded and stitched together to form a panoramic view, reference should be made to the methodology in appendix D10-8 of the ES [APP-199].

## 1.3 Visualisation assumptions

### *Parameter envelopes*

- 1.3.1 To provide an indication of the effectiveness of landscape mounding during Main Construction of the Power Station, a series of 3D models have been generated, representing the maximum and minimum construction landform parameter heights, the indicative height of the landscape and noise mitigation mound opposite Tregele, as well as the indicative operational landscape mounding heights. The parameter models are shown as 'wirelines', either as a dashed line or as a combination of a dashed line and/or a transparent fill, as set out below.
- 1.3.2 The parameters listed below have been colour coded and overlaid on the baseline winter views. Where existing foreground features to be retained lie in front of wireline parameters and would therefore conceal landform, dashed

lines or transparent fill used to illustrate the parameters have been masked out.

### 1.3.3 Parameter envelopes are illustrated as follows:

- The maximum potential height of construction landform, within areas where earthworks are proposed to form temporary and permanent landscape mounding, is illustrated with a transparent beige fill (light beige for Viewpoint 18). (To model the maximum construction landform parameter, the indicative operational landscape mound modelling has been modified to increase the crest height of each mound to the maximum construction landform parameter heights set out in table D1-4 of chapter D1 of the ES (proposed development) [APP-120] and as summarised in the methodology for illustrative construction visualisations (WN0902-HZDCO-PAC-REP-00251).
- The minimum construction landform parameter is illustrated with a brown dashed line. (As no minimum construction landform parameter is stated in chapter D1 of the ES [APP-120], the minimum parameter is taken to be the existing ground level.)
- The indicative operational landscape mounding is illustrated with a dashed dark green line (based upon the assumptions set out in the methodology of appendix D10-8 [APP-199]).
- In the wireline construction visualisation for Viewpoint 18, the transparent dark beige fill indicates the indicative 7m high construction landform for the landscape and noise mitigation mound opposite Tregale, in accordance with the Landscape and Habitat Management Strategy [REP2-039]). The transparent fill allows the parameter envelopes of the proposed buildings and cranes that would be screened by the mound, to be seen through the fill.
- The maximum potential height of the Site Campus accommodation blocks is illustrated with a cyan dashed line with transparent cyan fill. (One overarching parameter envelope for the Site Campus has been generated based upon the parameter envelopes of individual blocks, in accordance with the assumptions set out in the methodology for illustrative construction visualisations (WN0902-HZDCO-PAC-REP-00251).
- The maximum potential height of the Power Station buildings and the maximum geographical extent that buildings could be sited within is illustrated with a red dashed line with transparent red fill (in accordance with the assumptions set out in the methodology for illustrative construction visualisations (WN0902-HZDCO-PAC-REP-00251).

## ***Cranes***

- 1.3.4 Cranes to be used during Main Construction are illustrated as 'wirelines' in light blue line work. The illustrations of cranes are based upon the assumptions set out in the methodology for illustrative construction visualisations (WN0902-HZDCO-PAC-REP-00251)..

## **1.4 Visualisation creation**

- 1.4.1 3D models of the various features set out above were aligned to Ordnance Survey co-ordinates along with the camera viewpoint positions in the 3D modelling package, 3D Studio Max. The models provided were set at the correct Above Ordnance Datum (AOD) height which meant the features could be placed accurately within the view.
- 1.4.2 A 3D model was assembled based upon the assumptions set out in section 1.3. Once the final output from the 3D software was generated it was then overlaid onto the original background photograph in Photoshop. Any foreground elements that may obscure the proposals were then layered back over the top of the rendered image to provide a representative image of the visual impact of the Power Station.
- 1.4.3 For each visualisation viewpoint, two images have been prepared as follows:
- the existing winter baseline ('before') view;
  - a wireline construction view during winter;
- 1.4.4 The final visualisations have been sized so that the image gives an accurate representation when held at a certain distance from the eye. The visualisation sheet displays information on the size of sheet and the distance from the eye that the image should be held in order to give an accurate representation (RD1, paragraph 5.2).

## **1.5 Limitations**

- 1.5.1 Refer to limitations set out in appendix D10-8 of the ES [APP-199].
- 1.5.2 It should also be noted that the wireline construction visualisations are only indicative and intended to provide an indication of the effectiveness of landscape mounding to mitigate views during Main Construction. The wireline construction visualisations are provided for information only.

## 1.6 References

**Table 1-2 Schedule of references**

ID	Reference
RD1	Landscape Institute, March 2011. <i>Photography and Photomontage in Landscape and Visual Impact Assessment. Landscape Institute Advice Note 01/11.</i>



EXISTING VIEW

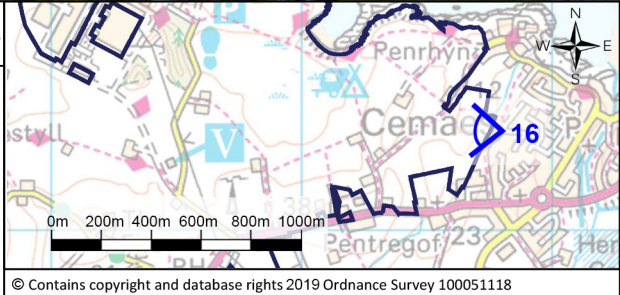


WIRELINE CONSTRUCTION VISULISATION



**VIEWPOINT 16**  
View west from public footpath at western edge of Cemaes

Date of photograph: 27.03.2016  
Time of photograph: 13:50  
Lighting conditions: Clear, Sunny  
OS grid reference: 236749, 393315  
Viewpoint ground elevation: 17.276m  
Camera height above ground level: 1.5m  
Camera type: Canon EOS 5D  
Camera lens size: 50mm  
Aperture: f.11  
ISO: 200  
Shutter speed: 1/200  
Horizontal angle of view: 80°



- Notes
1. This wireline construction visualisation is for illustrative purposes only and has been prepared in accordance with the methodology set out in this document.
  2. The type and positions of wireline cranes illustrated are indicative only and will change as construction progresses.
  3. At least one of each crane type is illustrated to its maximum parameter height. In construction zones with several tower cranes, some are illustrated at lower heights.
  4. The dashed lines/ transparent fill indicate the maximum parameter envelopes for: buildings (red), Site Campus accommodation blocks (cyan) minimum construction landform parameter (brown) and maximum construction landform parameter in landscape mound locations (beige).
  5. The dark green dashed line shows the indicative operational landscape mounding height.
  6. Viewpoint surveyed using GPS unit.
  7. Images (as printed on A3 sheet) are to be viewed at approx. 30cm from the eye.

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	App'd
1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL	HNPWL
Client						
Project						

**HORIZON**  
NUCLEAR POWER

WYLFA NEWYDD PROJECT  
ENVIRONMENTAL STATEMENT

Drawing title		
WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 16		
Scale @ A3	NOT TO SCALE	DO NOT SCALE
Jacobs No.	60PO80AG	
Client No.	-	
Drawing No.		
60PO80AG_DCO_VOL_D_WCV_V16		
This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.		




A wide-angle photograph of a Dragon petrol station and convenience store. The station is located on a road with a grassy verge on the left and a hedge on the right. Several cars are parked in the lot. A tall sign displays fuel prices and services. The sky is overcast.

A photograph of a Dragon petrol station and convenience store. The station is located on a road with a grassy verge on the left and a road on the right. A blue crane is visible in the background. A wireframe construction visualization is overlaid on the right side of the image, showing a green dashed line and a red solid line. The text 'WIRELINE CONSTRUCTION VISULISATION' is visible in the top left corner.

View from A5025 on western edge of Tregale

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1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL
Rev.	Date	Purpose of revision	Drawn	Check'd	Appr'd
<div> <div>Client</div> <div>  </div> </div>					
<div> <div>Project</div> <div> WYLFA NEWYDD PROJECT  ENVIRONMENTAL STATEMENT </div> </div>					

Drawing title		
WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 18-1		
Scale @ A3	NOT TO SCALE	DO NOT SCALE
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Client No.	-	
Drawing No.		
60PO80AG_DCO_VOL_D_WCV_V18-1		
This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.		



EXISTING VIEW

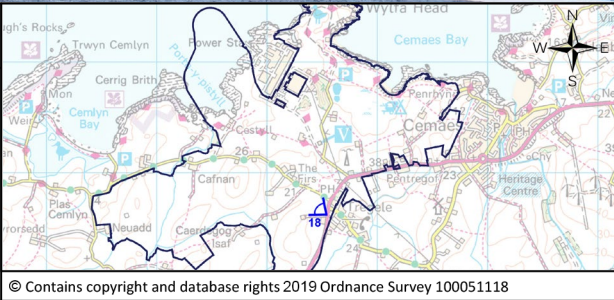


WIRELINE CONSTRUCTION VISULISATION



**VIEWPOINT 18**  
View from A5025 on western edge of Tregela

Date of photograph: 20/11/2018  
Time of photograph: 13:55  
Lighting conditions: Cloudy, Overcast  
OS grid reference: 235605, 392623  
Viewpoint ground elevation: 26.847m  
Camera height above ground level: 1.5m  
Camera type: Canon EOS 5D  
Camera lens size: 50mm  
Aperture: f.5.6  
ISO: 250  
Shutter speed: 1/ 500  
Horizontal angle of view: 80°



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  4. The dashed lines/ transparent fill indicate the maximum parameter envelopes for; buildings (red), Site Campus accommodation blocks (cyan) minimum construction landform parameter (brown) and maximum construction landform parameter in landscape mound locations (light beige).
  5. The dark green dashed line shows the indicative operational landscape mounding height.
  6. The transparent beige fill shows the indicative height of landform that would be implemented early during construction opposite Tregela.
  7. Viewpoint surveyed using GPS unit.
  8. Images (as printed on A3 sheet) are to be viewed at approx. 30cm from the eye.

1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL	HNPWL
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
Client			<div><div>HORIZON</div><div>NUCLEAR POWER</div></div>			
Project			WYLFA NEWYDD PROJECT ENVIRONMENTAL STATEMENT			

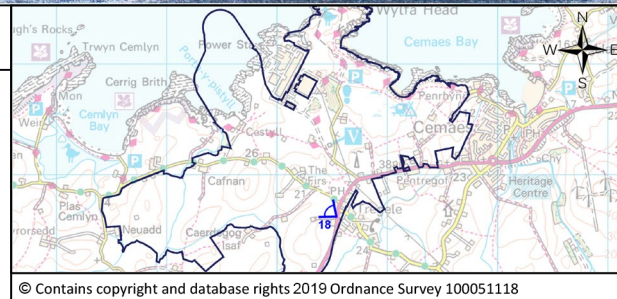
Drawing title			WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 18-2		
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Client No.	-				
Drawing No.	60PO80AG_DCO_VOL_D_WCV_V18-2				
This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.					




EXISTING VIEW

## A photograph of a road junction with a wireline construction visulisation overlay. The overlay shows a large, semi-transparent orange and green area representing the construction site, with a dashed green line indicating the boundary. In the background, there are power lines, a large crane, and a building.

<b>VIEWPOINT 18</b> View from A5025 on western edge of Treglele
Date of photograph: 20/11/2018 Time of photograph: 13:55 Lighting conditions: Cloudy, Overcast OS grid reference: 235605, 392623 Viewpoint ground elevation: 26.847m Camera height above ground level: 1.5m Camera type: Canon EOS 5D Camera lens size: 50mm Aperture: f.5.6 ISO: 250 Shutter speed: 1/ 500 Horizontal angle of view: 80°



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5. The dark green dashed line shows the indicative operational landscape mounding height.
6. The transparent beige fill shows the indicative height of landform that would be implemented early during construction opposite Tregle.
7. Viewpoint surveyed using GPS unit.
8. Images (as printed on A3 sheet) are to be viewed at approx. 30cm from the eye.

							Drawing title WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 18-3		
1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL	HNPWL			
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd	Scale @ A3	NOT TO SCALE	DO NOT SCALE
<div>Client</div> <div></div>							Jacobs No.	60PO80AG	
							Client No.	-	
<div>Project</div> <div>WYLFA NEWYDD PROJECT ENVIRONMENTAL STATEMENT</div>							Drawing No.	60PO80AG_DCO_VOL_D_WCV_V18-3	
							This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.		



EXISTING VIEW



WIRELINE CONSTRUCTION VISULISATION



VIEWPOINT 40

View west from public footpath on the edge of Cemaes

Date of photograph: 20/11/2018

Time of photograph: 11:30

Lighting conditions: Cloudy, Windy

OS grid reference: 236727, 393721

Viewpoint ground elevation: 14.457m

Camera height above ground level: 1.5m

Camera type: Canon EOS 5D

Camera lens size: 50mm

Aperture: f.5.6

ISO: 200

Shutter speed: 1/ 500

Horizontal angle of view: 80°

Notes

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5. The dark green dashed line shows the indicative operational landscape mounding height.

6. Viewpoint surveyed using GPS unit.

7. Images (as printed on A3 sheet) are to be viewed at approx. 30cm from the eye.

								Drawing title		
1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL	HNPWL	WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 40-1			
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd	Scale @ A3	NOT TO SCALE	DO NOT SCALE	
Client							Jacobs No.	60PO80AG		
Project							Client No.	-		
							Drawing No.	60PO80AG_DCO_VOL_D_WCV_V40-1		
							This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.			



EXISTING VIEW



WIRELINE CONSTRUCTION VISULISATION



<div>VIEWPOINT 40</div> <div>View west from public footpath on the edge of Cemaes</div>			
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EXISTING VIEW

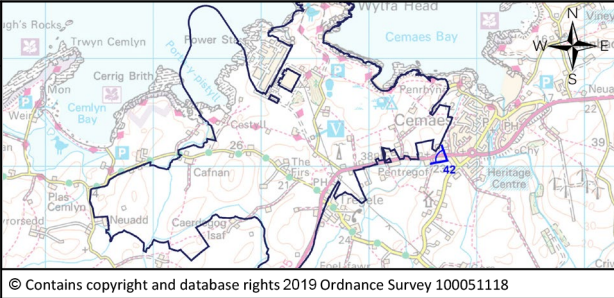


WIRELINE CONSTRUCTION VISULISATION



**VIEWPOINT 42**  
View north-west from the A5025 at the southern edge of Cemaes

Date of photograph: 20/11/2018  
Time of photograph: 12:25  
Lighting conditions: Cloudy, Sunny Spells  
OS grid reference: 236683, 393088  
Viewpoint ground elevation: 21.623m  
Camera height above ground level: 1.45m  
Camera type: Canon EOS 5D  
Camera lens size: 50mm  
Aperture: f.5  
ISO: 250  
Shutter speed: 1/ 500  
Horizontal angle of view: 80°



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  5. The dark green dashed line shows the indicative operational landscape mounding height.
  6. Viewpoint surveyed using GPS unit.
  7. Images (as printed on A3 sheet) are to be viewed at approx. 30cm from the eye.

1	FEB 2019	DCO Submission	HNPWL	HNPWL	HNPWL	HNPWL	
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd	
Client			<b>HORIZON</b> NUCLEAR POWER				
Project			WYLFA NEWYDD PROJECT ENVIRONMENTAL STATEMENT				

Drawing title			WIRELINE CONSTRUCTION VISUALISATIONS VIEWPOINT 42		
Scale @ A3	NOT TO SCALE		DO NOT SCALE		
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Client No.	-				
Drawing No.	60PO80AG_DCO_VOL_D_WCV_V42				
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