HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

6.4.32 ES Volume D - WNDA Development App D8-7 - Surface water and groundwater modelling results (Part 6/7)

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Application Reference Number: 6.4.32

June 2018

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Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Horizon Internal DCRM Number: WN0902-JAC-PAC-APP-00019

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Key

Peak flood depth (m)
Reference Point 5
1 : 30 year AEP fluvial
Climate change 2080s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2080s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1261i2_DCO_Phase5_F30_2080sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 75
DCO Reference Point 5 peak fluvial depth 1:30 year AEP climate change 2080s - reasonably foreseeable

file: H:\Projects\35989 Wylfa NNB Modelling\Design\Task 28 - Hydrological Modelling\Figures\DCO\MXDs\35989-Lon404i2_DCO_Phase5_F30_2080sRF.mxd

233000
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394000
393000
392000
391000
N

Key

Peak flood depth (m)
Reference Point 5
1 : 100 year AEP fluvial
Climate change 2080s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2080s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1262i2_DCO_Phase5_F100_2080sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 76
DCO Reference Point 5 peak fluvial depth 1:100 year AEP climate change 2080s - reasonably foreseeable

file: H:\Projects\35989 Wylfa NNB Modelling\Design\Task 28 - Hydrological Modelling\Figures\DCO\MXDs\35989-Lon405i2_DCO_Phase5_F100_2080sRF.mxd

233000
234000
235000
236000
237000
394000
393000
392000
391000
N

Key

Peak flood depth (m)
Reference Point 5
1 : 1000 year AEP fluvial
Climate change 2080s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2080s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1263i2_DCO_Phase5_F1000_2080sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 77
DCO Reference Point 5 peak fluvial depth 1:1000 year AEP climate change 2080s - reasonably foreseeable

233000
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N

Key

Peak flood depth (m)
Reference Point 5
1 : 100 year AEP fluvial
Climate change 2080s - credible maximum

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2080s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 11/05/2017
Corresponding data:
35989-C1264i2_DCO_Phase5_F100_2080sCM.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 78
DCO Reference Point 5 peak fluvial depth 1:100 year AEP climate change 2080s - credible maximum

file: H:\Projects\35989 Wylfa NNB Modelling\Design\Task 28 - Hydrological Modelling\Figures\DCO\MXDs\35989-Lon407i2_DCO_Phase5_F100_2080sCM.mxd

233000
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394000
393000
392000
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N

Key

Peak flood depth (m)
Reference Point 5
1 : 1000 year AEP fluvial
Climate change 2080s - credible maximum

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2080s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 11/05/2017
Corresponding data:
35989-C1265i2_DCO_Phase5_F1000_2080sCM.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 79
DCO Reference Point 5 peak fluvial depth 1:1000 year AEP climate change 2080s - credible maximum

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N

Key

Peak flood depth (m)
Reference Point 5
1 : 2 year AEP pluvial
30 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1266i2_DCO_Phase5_R2_2180sRF_30m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 80
DCO Reference Point 5 peak pluvial depth 1:2 year AEP 30 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon409i2 caldi

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Key

Peak flood depth (m)
Reference Point 5
1 : 30 year AEP pluvial
30 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1267i2_DCO_Phase5_R30_2180sRF_30m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 81
DCO Reference Point 5 peak pluvial depth 1:30 year AEP 30 min duration climate change 2180s - reasonably foreseeable

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Key

Peak flood depth (m)
Reference Point 5
1 : 100 year AEP pluvial
30 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1268i2_DCO_Phase5_R100_2180sRF_30m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 82
DCO Reference Point 5 peak pluvial depth 1:100 year AEP 30 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon411i2 caldi

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NOT PROTECTIVELY MARKED

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Key

Peak flood depth (m)
Reference Point 5
1 : 1000 year AEP pluvial
30 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 28/04/2017
Corresponding data:
35989-C1269i2_DCO_Phase5_R1000_2180sRF_30m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 83
DCO Reference Point 5 peak pluvial depth 1:1000 year AEP 30 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon412i2 caldi

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Key

Peak flood depth (m)
Reference Point 5
1 : 2 year AEP pluvial
60 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1270i2_DCO_Phase5_R2_2180sRF_60m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 84
DCO Reference Point 5 peak pluvial depth 1:2 year AEP 60 min duration climate change 2180s - reasonably foreseeable

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Key

Peak flood depth (m)
Reference Point 5
1 : 30 year AEP pluvial
60 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1271i2_DCO_Phase5_R30_2180sRF_60m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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DCO
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Figure 85
DCO Reference Point 5 peak pluvial depth 1:30 year AEP 60 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon414i2 caldi

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233000
234000
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394000
393000
392000
391000

N

Key

Peak flood depth (m)
Reference Point 5
1 : 100 year AEP pluvial
60 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1272i2_DCO_Phase5_R100_2180sRF_60m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 86
DCO Reference Point 5 peak pluvial depth 1:100 year AEP 60 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon415i2 caldi

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233000
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236000
237000
394000
393000
392000
391000
N

Key

Peak flood depth (m)
Reference Point 5
1 : 1000 year AEP pluvial
60 min duration
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1273i2_DCO_Phase5_R1000_2180sRF_60m.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 87
DCO Reference Point 5 peak pluvial depth 1:1000 year AEP 60 min duration climate change 2180s - reasonably foreseeable

May 2017 35989-Lon416i2 caldi

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237000
394000
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N

Key

Peak flood depth (m)
Reference Point 5
1 : 2 year AEP fluvial
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1274i2_DCO_Phase5_F2_2180sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 88
DCO Reference Point 5 fluvial depth 1:2 year AEP climate change 2180s - reasonably foreseeable

233000
234000
235000
236000
237000

394000
393000
392000
391000

N

Key

Peak flood depth (m)
Reference Point 5
1 : 30 year AEP fluvial
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1275i2_DCO_Phase5_F30_2180sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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Figure 89
DCO Reference Point 5 fluvial depth 1:30 year AEP climate change 2180s - reasonably foreseeable

file: H:\Projects\35989 Wylfa NNB Modelling\Design\Task 28 - Hydrological Modelling\Figures\DCO\MXDs\35989-Lon418i2_DCO_Phase5_F30_2180sRF.mxd

233000
234000
235000
236000
237000

394000
393000
392000
391000

N

Key

Peak flood depth (m)
Reference Point 5
1 : 100 year AEP fluvial
Climate change 2180s - reasonably foreseeable

- 0.01 - 0.05
- 0.05 - 0.10
- 0.10 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00
- Model boundary
- MHWS Extent 2180s
- Model river centreline

Notes:
The depths represent the maximum depth achieved. The flood prediction does not represent a moment in time as maximum depths can be achieved at different times.

Model run date: 10/05/2017
Corresponding data:
35989-C1276i2_DCO_Phase5_F100_2180sRF.xlsx

Meters
0 250 500 750 1,000
Scale at A3

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DCO
Hydraulic Modelling

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Figure 90
DCO Reference Point 5 peak fluvial depth 1:100 year AEP climate change 2180s - reasonably foreseeable