

West Burton C (Gas Fired Generating Station)

Appendix 9F: Reptile Survey Report

EDF Energy (Thermal Generation) Limited

Project Number: 60572265

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1. Introduction

1.1 Background

- 1.1.1 This report describes the approach and findings of the reptile survey undertaken in support of the Ecological Impact Assessment (EclA) for the Proposed Development.
- 1.1.2 The need for targeted reptile survey was determined during the initial Preliminary Ecological Appraisal (PEA) of the Site in February 2017 (updated December 2017, May 2018 and January 2019 and presented in **Appendix 9C**, Environmental Statement (ES) Volume II) due to the presence of potentially suitable habitat for reptiles within the Site. There are also previous records of grass snake (*Natrix natrix*) at West Burton Power Station (Ref 9F-1).
- 1.1.3 The purpose of the reptile survey was to gather baseline information on the presence or likely absence of reptiles within the Site to inform an assessment of the likely impacts and effects of the Proposed Development.
- 1.1.4 The terms of reference used in this report to describe the different elements of the Proposed Development are consistent with those defined within the main chapters of the ES (Volume I). However, for the purposes of this report, 'the Site' refers to all parts of the Proposed Development, excluding areas proposed for landscaping and biodiversity management and enhancement area, as described within **Chapter 3: Description of the Site** (ES Volume I) and illustrated on **Figure 3.3** (ES Volume III). The landscaping and biodiversity management and enhancement area would not be impacted in the same way as other parts of the Proposed Development and they fall outside the scope of this report.

1.2 Scope of Works

- 1.2.1 The survey area for the reptile survey comprised all potentially suitable habitat for reptiles within the Site, as shown on **Figure 9F-1**.

1.3 Relevant Legislation

- 1.3.1 All widespread species of reptile (adder (*Vipera berus*), grass snake, common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*)) receive legal protection through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (Ref 9F-2). It is an offence to intentionally or recklessly kill or injure a reptile. However, unlike European protected species, their habitat does not receive legal protection.
- 1.3.2 All reptiles are listed as 'Species of Principal Importance for Conservation in England' under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 9F-3). Section 40 of the same Act

requires that local and regional authorities have regard to the conservation of biodiversity in England, when carrying out their normal functions.

- 1.3.3 The Site lies well outside the known range of the sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*), and given that the Site lacks the necessary habitat to support these species, neither are considered further in this report.

2. Methodology

2.1 Desk Study

2.1.1 Background information on the presence of reptiles at the Site was obtained from the following sources:

- Nottinghamshire Biological and Geological Record Centre (NBGRC) - protected species records within 2km of the Site; and
- Results of previous surveys at the Site relating to reptiles (Ref 9F-1).

2.2 Field Survey

2.2.1 All survey work and reporting has been undertaken and/or reviewed by suitably qualified ecologists who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM).

2.2.2 A reptile presence/absence survey was undertaken following best practice guidance by Froglife (Ref 9F-4), with reference to the Herpetofauna Workers Manual (Ref 9F-5) and English Nature guidance (Ref 9F-6). This comprised a combination of Artificial Refuge Survey (ARS) and Visual Encounter Surveys (VES).

2.2.3 A total of 80 artificial refuges (roofing felt tiles approximately 0.5m²) were placed in habitats likely to be favoured by reptiles, such as sunny areas near to cover. This equated to approximately 20 refuges per hectare of suitable reptile habitat. The refuges were set out on 3rd April 2017 and left for a period of over 2 weeks prior to the first reptile survey. Seven survey visits were then undertaken between April and July 2017, during suitable weather conditions (temperature between 9 and 18°C, no rain or strong winds).

2.2.4 The VES involved surveyors walking slowly along pre-determined transects looking for reptiles basking in suitable habitats, such as south facing banks, natural refuges (e.g log piles) and habitat interfaces. Artificial refuges were checked simultaneously for the presence of basking reptiles on top of or beneath the tiles.

2.2.5 Survey dates, times and weather conditions are presented in **Table 1**.

Table 1: Reptile survey dates and weather conditions

Visit number	Date	Time	Air Temperature (°C)	Cloud cover %	Wind speed ¹	Ground conditions ²
1	21/04/17	11:00-12:00	13-15.5	100	1-2	Dry
2	26/04/17	08:45-09:40	9	80-90	3-4	Dry

Visit number	Date	Time	Air Temperature (°C)	Cloud cover %	Wind speed ¹	Ground conditions ²
3	04/05/17	09:45-10:30	11-12	0	2-3	Dry
4	23/05/17	07.45-09.37	16	30	1	Damp
5	07/06/17	10:00-11:10	15	50	5	Damp
6	22/06/17	09.50-10.45	20	100	3	Damp
7	05/07/17	08.00-09.35	17	100	1	Dry

¹Beaufort wind force scale: 0 = No wind, 1 = Light air, smoke drifts, 2 = Light breeze, leaves rustle, 3 = Gentle breeze, small twigs move, 4 = Moderate breeze, small branches move, 5 = Fresh breeze, small trees sway, 6 = Strong breeze, large branches move, 7 = Mod Gale, whole trees in motion

²Dry, Damp (no standing water) or Wet (standing water present)

2.3 Limitations

- 2.3.1 The wind speed on survey visit 5 was relatively high, but conditions were otherwise deemed to be good for reptile detection as the weather was sunny and followed a period of several days of wet weather. The temperature on survey visit 6 was slightly higher than recommended for reptile surveys (Ref 9F-4), but conditions were still deemed suitable, especially for reptiles taking refuge beneath artificial refugia.
- 2.3.2 Reptiles are generally active from March to October although the standard survey guidance indicates that April, May and September tend to be the most effective months in which to survey for reptiles (Ref 9F-4). However, the guidance notes that the exact timing of surveys will depend on temperature, rainfall and other local climatic patterns that influence breeding and feeding activity. Surveys were undertaken between late April and early July, although as they were undertaken in good survey conditions i.e. daytime temperatures typically between 9°C and 18°C, the June and early July surveys that were outside the optimal survey season were still effective at detecting reptiles. On this basis, the seasonal timing of the surveys is not considered to have limited the effectiveness of surveying.
- 2.3.3 Given the objectives of the survey, and the overall results, these minor limitations are not considered to have undermined the findings.

3. Results

3.1 Desk Study

- 3.1.1 Grass snake has regularly been recorded during habitat management works within West Burton Reedbed Local Wildlife Site (LWS), located approximately 50m to the south-east of the Site. There are also anecdotal records of grass snake sightings around the flooded gravel pits within West Burton Power Station LWS, located directly adjacent to the Proposed Power Plant Site (Ref 9F-1).
- 3.1.2 NBGRC data contained several old (1987) records of grass snake within or near West Burton Power Station.

3.2 Field Survey

- 3.2.1 The results of the reptile presence/absence survey are provided in **Table 2** and illustrated on **Figure 9F.1**.
- 3.2.2 Grass snake was the only reptile species identified within the survey area. Juvenile and sub-adult age classes were found, but no adult snakes were encountered. All snakes were located beneath artificial refuges, with a maximum of 4 individuals found on a single survey visit.

Table 2: Reptile presence/absence survey results

Visit number	Date	Reptiles	Number of Individuals	Activity	Grid reference
1	21/04/17	No reptiles found	-	-	-
2	26/04/17	No reptiles found	-	-	-
3	04/05/17	No reptiles found	-	-	-
4	23/05/17	No reptiles found	-	-	-
5	07/06/17	Juvenile Grass snake	2	Beneath tile	480340, 386166
		Sub-adult Grass snake	1	Beneath tile	480281, 386172
		Juvenile Grass snake	1	Beneath tile	480274, 386315
6	22/06/17	No reptiles found	-	-	-

Visit number	Date	Reptiles	Number of Individuals	Activity	Grid reference
7	05/07/17	Sub-adult Grass snake	1	Beneath tile	480295, 386231
		Sub-adult Grass snake	2	Beneath tile	480345, 386434

4. Discussion

4.1 Evaluation of results

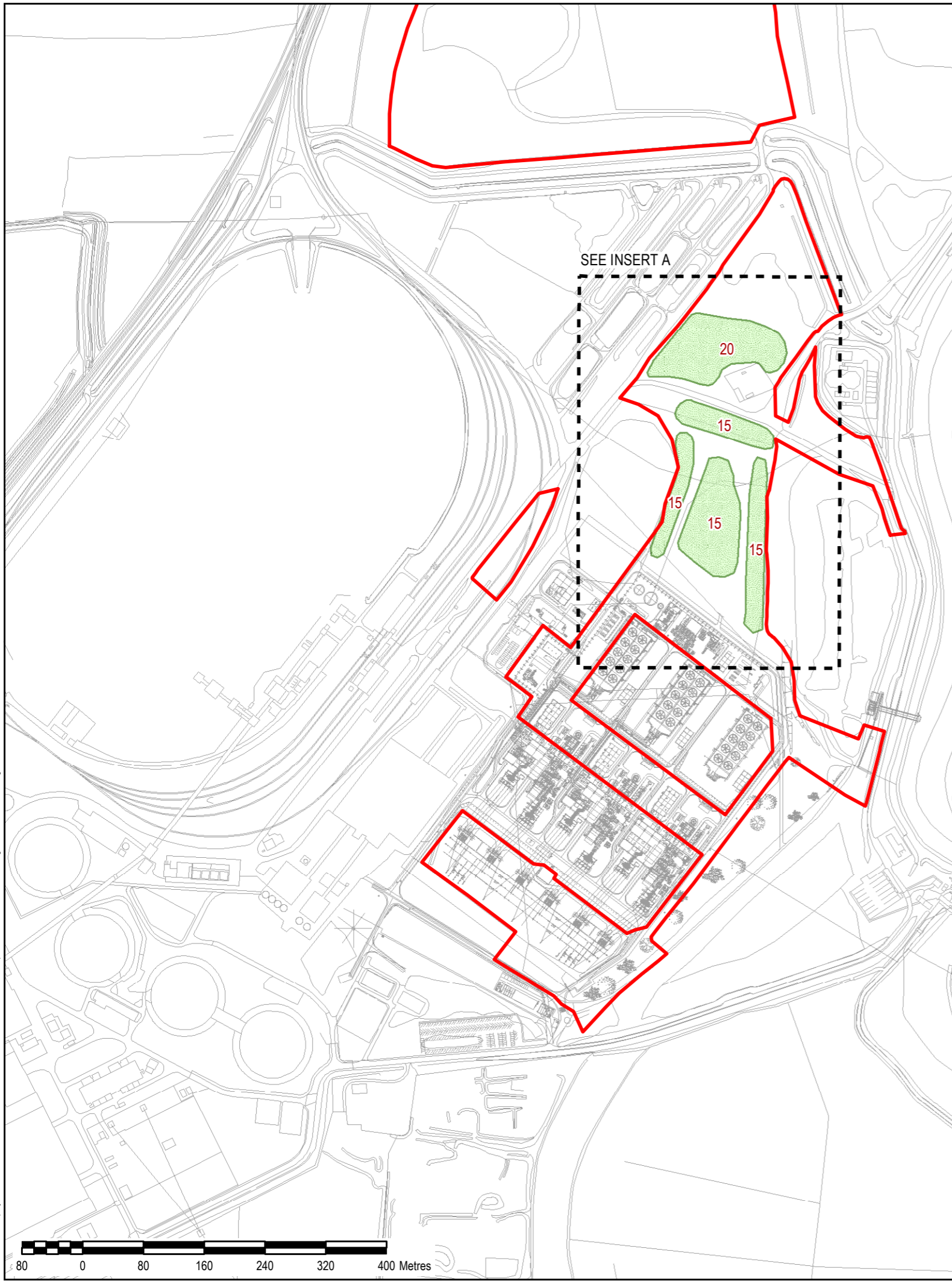
- 4.1.1 The reptile survey confirmed the presence of grass snake at the Site. The other three widespread reptile species were not encountered during the survey and are therefore considered likely to be absent. The results are consistent with previous surveys and records of reptiles at West Burton Power Station.
- 4.1.2 The relative population size of grass snake at the Site cannot be reliably determined from the survey effort employed for the purposes of establishing the presence or likely absence of reptiles. At least 20 survey visits per season are recommended in best practice guidance (Ref 9F-4) to enable an evaluation of population size. Furthermore, the population size classes are based on the number of adults recorded during surveys, and no adult grass snakes were recorded during the surveys.
- 4.1.3 However, based on the low numbers of individuals encountered during the surveys, and the limited value of the habitats within the Site for grass snake (mainly comprising recently seeded grassland), it is considered unlikely that the Site supports a notable population. Grass snakes typically have large home ranges of several hectares or more of suitable habitat. Their presence within the Site is, therefore, likely to be relatively transitory as they move between more optimal habitats in surrounding areas, such as the series of ash lagoons and associated habitat to the north, and the flooded gravel pits and reedbed habitats to the south and east. These areas are outside the boundary of the Proposed Development.
- 4.1.4 The number of grass snakes identified during the survey falls below the threshold of 3 adults recorded in a single survey that would indicate a significant population size for Nottinghamshire (Ref 9F-7).
- 4.1.5 In view of the above, the population of grass snake associated with the Site is considered to be of local nature conservation value.

5. References

- Ref 9F-1 Parsons Brinckerhoff (2014) *West Burton CCGT Power Station: Survey to Inform Protection of Great Crested Newts, Reptiles and Badgers During Operation*. Parsons Brinckerhoff, London.
- Ref 9F-2 HM Government (1981) *Wildlife and Countryside Act 1981*.
- Ref 9F-3 HM Government (2006) *Natural Environment and Rural Communities Act 2006*.
- Ref 9F-4 Froglife (1999) *Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.
- Ref 9F-5 Gent, T. & Gibson, S. (1998) *Herpetofauna Workers' Manual*. JNCC, Peterborough.
- Ref 9F-6 English Nature (2004) *Reptiles: guidelines for developers*. English Nature (now Natural England), Peterborough.
- Ref 9F-7 Crouch, N.C. (2014) *Nottinghamshire LWS Handbook – Guidelines for the selection of Local Wildlife Sites in Nottinghamshire. Part 2A – Local Wildlife Sites selection criteria: species*. Nottinghamshire Biological and Geological Records Centre, Nottingham.

Figures

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THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order Limits
- Survey Areas (no of refuges)
- * Grass Snake Record (no. Found)

First Issue	GB	SE	05.01.18	0
Revision Details	By	Check	Date	Suffix

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Purpose of Issue
ENVIRONMENTAL STATEMENT

Client
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 (THERMAL GENERATION) LIMITED**

Project Title
**WEST BURTON C (GAS FIRED
 GENERATING STATION)**

Drawing Title
**FIGURE 9F.1
 REPTILE SURVEY**

Drawn SM	Checked SB	Approved SW	Date 05.01.18
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